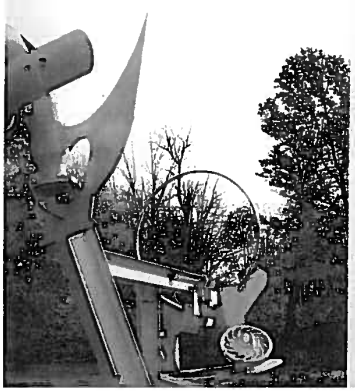
Art Works for Schools

A Curriculum for Teaching Thinking In and Through the Arts

DeCordova Museum and Sculpture Park

Harvard Project Zero

Underground Railway Theater



Art Works for Schools

A Curriculum for Teaching Thinking In and Through the Arts

Developed by:
Tina Grotzer, Harvard Project Zero
Laura Howick, DeCordova Museum and Sculpture Park
Shari Tishman, Harvard Project Zero
Debra Wise, Underground Railway Theater

Fact Sheet

Educators are busy people. Perhaps you don't have time to read the Introduction to *Art Works for Schools* right now, but you'd like to know if the program is for you. Here are some facts at a glance:

- *Art Works for Schools* teaches high-level thinking in and through the arts, focusing mainly on visual art and theater.
- The program is primarily about responding to art rather than making art.
- It is written mainly for classroom teachers who are not art specialists, but it is easily adaptable for art and theater specialists as well as museum and theater educators.
- It is written for grades 3–8, but it is easily adaptable for younger and older students.
- The curriculum consists of four modules. At the rate of one 45-minute lesson per week, a typical module takes about two months to teach, and the entire curriculum takes about one year.
- The modules focus on four forms of high-level thinking that are central to thinking in art, and also central to other subjects:
  reasoning
  perspective taking
  problem finding
  metaphor making
- The program emphasizes transfer across the curriculum by providing lessons in each module that make a connection between thinking in art and thinking in other subjects.
- *Art Works for Schools* can be used without prior training.

Acknowledgments

The *Art Works for Schools* curriculum guide is the product of five years of collaboration between three organizations, several schools, and many individuals. This project would not have been possible without generous funding from the Massachusetts Cultural Council, a state agency, through its Education Partnership Initiative Grant. Designed to support long-term partnerships between cultural organizations and schools, this three-year grant allowed substantive and sustained work to be accomplished without the distraction of raising funds every year. We sincerely thank the Massachusetts Cultural Council for its support and innovative grant structure.

We are also grateful for funding from the National Endowment for the Arts, which supported the production and dissemination of the curriculum guide and video.

For additional support we gratefully thank: The Ogden Codman Trust, Alice Willard Dorr Foundation, FAO Schwartz Family Foundation, Horizon Foundation Inc., Bessie Pappas Charitable Foundation, School Bell Foundation, Tiny Tiger Foundation, A. C. Ratshesky Foundation, and The Charles Stark Draper Laboratory, Inc.

Several people played key roles in the early years of the project but have since moved on to other endeavors. We are deeply indebted to Eleanor Lazarus, former Director of Education at DeCordova Museum and Sculpture Park, who provided vision and inspiration for most of the project until her retirement in 1999. We also gratefully acknowledge Wes Sanders, Founding Artistic Director of Underground Railway Theater, who made invaluable contributions to this program during its first two years.

Patricia Palmer of Harvard Project Zero has played a key role in the later stages of the project. We are deeply indebted to her vision and energy and to the invaluable editorial and organizational assistance she has provided.

Many staff members from the three organizations helped the project immensely. The Development Department of DeCordova Museum raised money for much-needed matching funds. Since 1999, the museum's new Director of Education, Claire Loughheed, has unwaveringly kept the project on track for completion. Jill Brown, former DeCordova Museum Guide Instructor, skillfully brought the Art Works concepts to the DeCordova Museum Guides.

Harvard Project Zero provided extensive administrative support as well as invaluable research assistance from Carrie O'Leary, Betty Nhan, Maggie Jacobberger, Aimee DeCoste, Kiki Donis, and Stephanie Ault.

Underground Railway Theater provided administrative and development support. Booking Director Tom Vance brought *Art Works for Schools* to the attention of many schools.

The theater techniques in this curriculum are all drawn from the practices of Underground Railway Theater with the exception of the Playwriting Improvisation activity sheet, which was originally created by Steve Seidel of Harvard Project Zero.

Several of the ideas in this program, especially the Looking at Art techniques and the "Artful Reasoning" module, draw on the inquiry-based strategy of The Museum of Modern Art's Visual Thinking Curriculum (VTC). The VTC was originally developed under the direction of Philip Yenawine in collabora-

tion with researcher Abigail Housen and others. We gratefully acknowledge the work of Philip Yenawine and all the others at MoMA and elsewhere who have contributed to the development of this inquiry-based method of looking at and talking about art. We are also grateful to the more recent collaboration between MoMA and Harvard Project Zero, which has inspired aspects of this program.

Also, many of the ideas in this program, especially ideas about the nature of thinking and learning, draw on a long history of work at Harvard Project Zero. In particular, the authors are grateful to colleagues David Perkins, Heidi Goodrich Andrade, and others who developed the original version of the Learning Spiral, on which the *Art Works for Schools* lesson format is based.

Many Massachusetts public schools have been involved in the development of this program, and the authors wish to acknowledge their contributions, especially the four schools in Cambridge and Lincoln that boldly agreed to partner with us at the beginning of this project.

Principal Joe Petner, Vice Principal Annemarie Mahoney, and teachers at the Haggarty School in Cambridge have been invaluable colleagues over the five years of this program's development. Our thanks to all who participated, with particular gratitude to Karen Daniels, speech specialist; Karen Kosko, librarian; and teacher Leslie Kramer.

The Graham and Parks Alternative Public School in Cambridge was also involved during the first two years, and we are particularly grateful to teacher Kathleen Cafferty.

Mark McQuillan, Superintendent of the Lincoln Public Schools, has been especially supportive of our work. Teachers at the Lincoln School (K–8) and at the Hanscom Primary and Middle Schools in Lincoln worked with the program for three years, with notable contributions by teachers Denise Gilbert, Melissa Hartemink, Donna Lubin, and Howard Worona.

We commend Principal Mark Springer and the entire K–5 teaching staff of the Mason Rice School in Newton for inviting Debra Wise to pilot many of these ideas in their classrooms during the 2000 school year. And we thank Linda Cohn, coordinator/teacher of the ACE program in the Arlington Public Schools, for making arrangements for us to test these lessons with her students. Extra special thanks to many of her students, who volunteered to stay after school to do such fine thinking about and through visual art and performance!

Reflections on *Art Works for Schools:* A Transformative Experience

In 1996 I had the great fortune of meeting Ellie Lazarus, then Director of Education at the DeCordova Museum. We talked about the involvement of the Haggerty School in a collaboration involving the Museum, Project Zero, and the Underground Railway Theater. Our school's interest in this collaboration was sparked by a commitment to making art more central and integral to the school experiences of our students, as well as the need to respond to the mandate of the Education Reform Act of 1993, which calls for the arts to be part of the basic school curriculum. We believed that our participation in the *Art Works for Schools* project held great possibilities for the school to explore "thinking and learning through art" and would provide critical staff and curriculum development experiences for teachers.

Our experiences over the past five years have proven to be transformative. The program components of *Art Works for Schools* were innovative and interactive for teachers as well as students and their families. The goals of the project were rooted in the experiences of seeing artworks and watching theater performance. Teachers and students were asked to develop critical, imaginative, and reflective thinking skills in relation to these experiences. We took away from this collaborative experience a better understanding of how art *works* as a tool for learning across the curriculum. We were helped to see how art *works* for students who are differently abled. We were able to use the resources of *Art Works for Schools* to create a professional community with our collaborators where teachers were engaged in reflection about their craft and were asked to help shape the direction and focus of the content and activities. The influence of the initiative was evident in the level of confidence teachers demonstrated in their ability to think about and discuss art, and their willingness and commitment to integrate it into the curriculum.

The *Art Works for Schools* project served as a critical agent for change by creating the conditions for learning about ways to use visual and theater art as a tool for teaching and learning. It powerfully emphasizes the importance of the arts in our schools. Someone once wrote: "To know neither the rich storehouse of human experience contained in the arts nor the use of the expressive and communicative functions of the arts is to be educationally deprived." The *Art Works for Schools* project has helped us as a community of learners to attain a higher level of literacy. In this regard, it has truly been a "transformative" experience.

Joe Petner

Joe Petner, Principal
April 12, 2001

About the *Art Works for Schools* Collaborating Partners

DeCordova Museum and Sculpture Park, located 16 miles from Boston, is the only major art museum in New England dedicated exclusively to the exhibition, interpretation, and collection of modern and contemporary American art. DeCordova presents as many as 16 groundbreaking individual and group exhibitions a year, with a special emphasis on the work of New England artists. The surrounding 35-acre sculpture park exhibits over 80 artworks and is the only ongoing exhibition of large-scale, contemporary American outdoor sculpture in New England. Education is a top priority at DeCordova Museum, and the public can enjoy tours, lectures, family days, and a vast array of classes in many media for adults and children. In addition, the museum supports outreach programs for schools and community centers. Laura Howick, Manager of Outreach Programs, produces educational programs, exhibitions, and written materials.

Harvard Project Zero is a research organization at the Graduate School of Education at Harvard University. Beginning with early studies into the cognitive nature of artistic work, Project Zero has been investigating learning processes in children, adults, and organizations for over 30 years. It has gradually expanded its concerns to include not just the arts but education across all disciplines. Project Zero is an umbrella research institution, within which a variety of research projects are carried out simultaneously. While each project has its own focus, all projects share in a broad mission: to understand and enhance learning, thinking, and creativity in the arts, as well as in humanistic and scientific disciplines, at individual and institutional levels. Tina Grotzer and Shari Tishman are principal investigators and research associates at Harvard Project Zero. Patricia Palmer is a research associate at Harvard Project Zero and a visual artist.

Underground Railway Theater is a professional, non-profit theater based in the Boston area. For 25 years, URT has been creating, commissioning, and presenting new theater works, both at its home theater and on national tours. URT specializes in combining acting, puppetry, and music to engage diverse audiences in theater that provokes discussion in a spirit of celebration. The company produces a full repertoire for young people, families, and adults, and performs in venues ranging from fine arts centers to public schools. The company also creates puppet spectacles that have been performed with most of the nation's major symphony orchestras. Along with their professional work in theaters, URT artists offer residencies at community settings during which people can create theater of their own. They also work in museum settings; for instance, besides its work with the DeCordova Museum and Sculpture Park, URT created a play for the Boston Museum of Science and enlivens Boston's Museum of Fine Arts family program. The company's educational work with teachers and students of all ages is focused on using theater as a window on the world—a tool for investigation, understanding, and building community. Debra Wise is URT Artistic and Education Director.

Contents

Introduction

What is *Art Works for Schools*?

Art Works for Schools is a program that teaches high-level thinking in and through visual art and theater. The purpose of the program is to help teachers and students discover the power of the arts to enrich thinking across school subjects. Intended primarily for grades 3–8, but used by teachers of younger and older students as well, *Art Works for Schools* is designed for classroom teachers to use alongside their regular curriculum. The program consists of four modules, each of which contains about eight 45-minute lessons plus additional resources and lesson suggestions. Although the program can be used flexibly, teachers tend to teach an average of one lesson per week.

Art Works for Schools focuses on four forms of high-level thinking that are central to art, and also central to thinking and learning in other subjects:

1. Reasoning
2. Perspective taking
3. Problem finding
4. Metaphor making

The program focuses on these forms of thinking because they satisfy three criteria: (1) All of them are authentic modes of thinking when responding to and making art, in the sense that they are the things that people who view and make art actually tend to do; (2) all have genuine cognitive power in the arts, in the sense that they significantly contribute to aesthetic learning and understanding; and (3) all have genuine cognitive power in other areas of learning, particularly traditional school subjects.

Who can use *Art Works for Schools*?

Art Works for Schools is written primarily for classroom teachers who are not art specialists. It does not require prior experience using art in the classroom or any special background in art, although teachers who enjoy the arts might be naturally drawn to the program. With minor adaptations, the program can also be used by art teachers, museum educators, and theater educators.

The lessons are written to be used directly with grades 3–8, but many of the lessons are easily adaptable to younger grades and older grades. Indeed, teachers at the kindergarten as well as the college levels have used several of these lessons successfully.

Why teach thinking through art?

Most educators believe that it is important to teach students to think critically and creatively. Why? Because doing so helps students to do a better job of constructing and interpreting the meaning of things, which is what, sooner or later, all learning is about. Here are four reasons why art makes a particularly good starting place for teaching thinking.

1. *Art invites thinking.* Responding to art is *about* constructing and interpreting meaning. This is perfectly obvious to children, whose first response to a work of art is typically either to invent a story about it or to guess at what it means. Because art is multilayered and complex, metaphorical and ambiguous, it naturally invites—and rewards—critical and creative thought.

2. *Thinking about art encourages visual literacy.* Our culture is increasingly visual. From computer and TV screens to newspapers and billboards, we are bombarded by visual images that need decoding and interpretation. Increasingly, students need to be able to probe and interpret visual images thoughtfully, critically, and creatively. Because works of art are complex visual objects that invite multiple interpretations, thinking about art is an excellent way to develop visual learning skills.

3. *Thinking about art draws on different learning modalities.* Thinking and talking about art naturally bring together multiple modes of perception and cognition. When children talk about works of art, they freely refer to a variety of senses—they talk about what they see, feel, think, hear, and so on. And they naturally use all of this information cognitively. That is, they use information from all of their senses to make meaning out of works of art. Consequently, emphasizing the cognitive dimension of responding to art helps children to develop an integrative rather than a "dry" concept of thinking—one that includes emotions and perceptions and any other faculties that contribute to insight and understanding. Also, because art invites multiple modes of perception, it is accessible to children with a range of different thinking styles.

4. *Forms of thinking that are central to art are also important in other disciplines.* The forms of thinking emphasized in this curriculum—reasoning, perspective taking, problem finding, and metaphor making—have been chosen because of their centrality to thinking about art *and* their centrality to thinking in other domains. For example, reasoning thoughtfully about interpretations is as important in science or history as it is in art. Similarly, adopting multiple perspectives is a powerful way to explore an artwork, just as it is a powerful way to explore historical events, scientific phenomena, and social issues. Metaphor making and problem finding have the same kind of cross-domain relevance.

How does *Art Works for Schools* view the connection between thinking in art and thinking in other disciplines?

The *Art Works for Schools* program stresses the transfer of thinking about art to thinking about other curriculum areas with the aim of encouraging a deeper understanding of each. The program assumes that some aspects of the broad forms of thinking can be transferred to other curriculum areas, which is an issue of some academic debate.

The *Art Works for Schools* program takes the following stance. As students move from novice to expert in any area of understanding, they tend to move from more general to more nuanced understanding of the thinking patterns involved. Helping students learn thinking techniques in their more generalizable sense opens the door to later learning of the more nuanced patterns. However, helping students adopt the various disciplinary lenses—thinking like a scientist, a historian, a mathematician, and so on—involves eventually teaching the nuances as well as the generalities. But students are not miniature scientists, historians, and so forth, and they don't hold all of the textured knowledge and assumptions (the epistemologies) of the disciplines in their minds. They need to start their learning of thinking patterns somewhere. The techniques in *Art Works for Schools* are a good place to start.

What kind of art is emphasized in *Art Works for Schools*?

Art Works for Schools mainly emphasizes visual art and theater. The program uses these art forms in different ways.

The role of visual art in *Art Works for Schools*

Every thinking technique introduced in the curriculum first appears in a lesson in which students respond to a work of visual art; other lessons then transfer that form of thinking to other topics. In other words, every thinking technique starts with visual art. The visual art images used in the lessons are drawn from the DeCordova Museum's collection, but other images can be substituted. In fact, the program encourages the use of images from local museums and collections (see "Making the Most of a Museum Visit" in the resource section at the end of the curriculum).

In addition to being the subject of several *Art Works for Schools* lessons, visual art also plays another role in the curriculum: drawing and other visual techniques are occasionally used in the lessons to enhance thinking. But these techniques are always used as *tools*, not as ends in themselves. *Art Works for Schools* does not aim to teach the craft of making visual art. Rather, art techniques are used in the service of helping students learn to think.

The role of theater

Theater is used in *Art Works for Schools* primarily as a tool for enhancing and enacting thinking, rather than as a topic of study itself. It is usually introduced as a tool for deepening understanding about a work of visual art and is then

transferred as a tool for deepening understanding about literature, science, history, or any other topic of study. For example, several *Art Works for Schools* lessons use theater techniques such as improvisation, monologue, and dialogue as vehicles for engaging students in thinking through a topic, whether the topic is a work of visual art or something drawn from the regular curriculum. Theater is used as a tool in part because children's natural affinity for dramatic play makes theater an especially powerful vehicle for exploring topics across the curriculum. But the larger reason is practical. In visual art, students can easily explore a variety of artworks right in their own classroom simply by viewing reproductions of them. Providing students with comparable theater experience is much more difficult, since it would mean mounting a full-scale dramatic production every time theater was the topic of a lesson. That said, *Art Works for Schools* strongly encourages teachers to find ways to expose their students to theater performances and to use *Art Works for Schools* techniques to explore these performances just as they do when exploring visual art (see "Making the Most of a Theater Performance" in the resource section).

How does *Art Works for Schools* connect to the curriculum frameworks?

Through its focus on thinking skills and interdisciplinary learning, *Art Works for Schools* directly addresses many goals of the Massachusetts state curriculum frameworks. For example, the Massachusetts Common Core of Learning states that students should be able, among other things, to "read and listen critically, write and speak clearly, factually, persuasively, and creatively, . . . distinguish fact from opinion, and recognize bias." It also states that students need to "make careful observations and ask pertinent questions, analyze, interpret, and evaluate information. Make reasoned inferences and construct logical arguments [and] develop, test, and evaluate possible solutions." All of these goals require the thinking skills and dispositions of the four areas of thinking that *Art Works for Schools* focuses on—reasoning, perspective taking, problem finding, and metaphor making. *Art Works for Schools* was developed in Massachusetts, so the resource section of this curriculum contains a sheet detailing several specific connections between the Massachusetts curriculum frameworks and this program. Since state frameworks across the country have many similarities, educators in other states may also find this a useful resource.

The components of the *Art Works for Schools* curriculum: A thumbnail overview and philosophy

The authors of *Art Works for Schools* believe in the "no secrets" approach to teaching and learning. Just as students learn best when the goals of their learning experiences are explicitly shared with them rather than hidden in the teacher's manual, teachers teach best when the rationale for the design of the programs they teach is made visible rather than hidden in the program developers' minds. Additionally, we believe it is useful to take a bird's eye view of a program before teaching it, in order to know what to expect.

Here, then, is an overview of the sequence of the *Art Works for Schools* program, including information about how long each component takes to teach. Following it is an overview of and rationale for the lesson format used in the

program. Every lesson in *Art Works for Schools* follows the same format. This format is a very important part of the program, because it reflects the research-based beliefs and commitments that we hold about the nature of good learning. We share this thumbnail philosophy with you so that you can see whether it fits with your own educational philosophy and teaching style.

The sequence of the program

Art Works for Schools is written quasi-sequentially. This means that we recommend following the sequence in which the curriculum appears, but we also recognize that people have special interests and circumstances and may prefer to teach some of the sections out of order or only teach certain sections and not others. Consequently, each section is written so that it can be used alone, without reference to other sections. But the sections do build on each other, both in terms of the concepts they deal with and the techniques they teach. So the program tends to feel more cohesive and manageable when it is taught in the sequence in which it appears. The program consists of the following sequence of components:

- Looking at Art and Using Theater: The Basics
- Module One: Artful Reasoning
- Module Two: The Power of Perspective
- Module Three: Problem Finding
- Module Four: The Magic of Making Metaphors

The "Looking at Art and Using Theater" section

Many of the *Art Works for Schools* lessons require you, the teacher, to lead a class discussion about a work of art or an activity in which students use a theater technique. The lessons are written so that no background knowledge in these areas is necessary, but we also believe that some basic information can be very helpful. The first section of the curriculum provides this resource. It discusses some basic techniques for conducting good classroom discussions about works of art and provides some basic guidance for using theater techniques in the classroom. This section is short; it includes two 45-minute lessons for students as well as background information for you, the teacher.

The format of the four modules

The four modules all follow the same format. First, there is a general overview of the type of thinking the module focuses on. Then, the module introduces a handful of thinking techniques within the module area. For example, "Artful Reasoning" introduces several reasoning techniques, "Power of Perspective" introduces several perspective-taking techniques, and so on. The techniques are clustered, so that each thinking technique is introduced first in a lesson that focuses on art and then in a lesson that transfers the technique to other subjects in the curriculum. At the end of each module are additional resources and lesson suggestions. Lessons take an average of about 45 minutes to teach.

The design of the lesson format

All of the lessons in *Art Works for Schools* follow the same format. This format isn't arbitrary; it's designed to take maximum advantage of research on learning, and it draws on pedagogies and practices developed at Harvard Project Zero that emphasize high-level thinking and learning for understanding. The format of each lesson is as follows (you may want to have a lesson in hand while reading this section, in order to have a concrete example in front of you):

- Understanding Goals
- Step 1: Get Ready
- Step 2: View the Artwork (or Consider the Topic)
- Step 3: Deepen Understanding
- Step 4: Reflect and Connect

Understanding Goals. These are the big ideas, or understandings, that the lesson is meant to communicate to students. The Understanding Goals are written in language that is meant to be used directly with students, so that they can be fully aware of their own learning goals. These goals are typically revisited and reinforced at the end of the lesson.

Step 1: Get Ready. Learning happens best when learning experiences provide students with an opportunity to get ready to learn by putting on the right "mental set." This can be accomplished in a variety of ways—by asking students to connect to prior knowledge or personal experiences, by encouraging them to explicitly adopt a particular attitude or mindset, or by asking them to recall previous learning experiences that are relevant. *Art Works for Schools* uses a variety of "get ready" techniques, many of which will feel familiar to teachers.

Step 2: View the Artwork (or Consider the Topic). This is the point in the lesson when students first see the artwork, or, if it is a transfer lesson, when they consider the specific topic of study. Looking and considering take time: this step makes a place for this quiet aspect of learning by building it into the lesson format. Students have the chance to simply let their eyes and thoughts wander fruitfully. This step also often includes brief mini-exercises designed to enhance students' initial exploration of the artwork or topic.

Step 3: Deepen Understanding. Educational research overwhelmingly supports the theory that students understand best when they have an opportunity to actively engage with the material they are studying, especially in ways that involve high-level thinking. The activities you'll find in this step are designed to help students actively engage with the topic of the lesson by using the forms of high-level thinking emphasized in this curriculum.

Step 4: Reflect and Connect. Two other research-proven components of powerful learning are (1) metacognitive reflection (sometimes called "thinking about thinking"), and (2) explicit attention to transfer. These two components fit together naturally in the final step. The "reflect" part of the step asks students to reflect back on the thinking they did and draw big messages. The "connect" part of the step asks them to explicitly seek connections between what they just learned and other subjects and topics.

Looking at Art and Using Theater: The Basics

Looking At Art

Seeing takes time, like to have a friend takes time.
—Georgia O'Keefe

Looking at art can be a powerful learning experience, not just for those who are art savvy, but for those who may never have stepped into a museum or gallery. This is why, along with theater techniques, the activity of looking at art is the foundation of the *Art Works for Schools* curriculum. It is easily done in the classroom, using slides and the tips in this chapter.

This section provides an overview of looking at art and a lesson for students that introduces the basic looking at art technique used in the curriculum.

Looking at Art

Overview

What does looking at art involve?

- **Looking takes time.** Most visitors to museums spend an average of only a few seconds looking at an artwork. Looking requires that we slow down and be willing to give up scanning many artworks quickly in exchange for deeply experiencing a few. In *Art Works for Schools* lessons, you may easily spend up to 45 minutes looking at one artwork. Teachers who tested these lessons found the time went quickly!

- **Looking is observing.** The dictionary defines *observe* as "To perceive; notice. To watch attentively." Careful observation is a valuable skill that can be applied to many fields such as math, science, and history. Children who practice observing improve their ability to notice details, relationships between forms, overall patterns, and structures.

- **Looking provides a basis for thinking deeply.** When children look at art, they are often motivated to answer the question "What's going on here?" or, in other words, "What does this mean?" Careful observation provides the visual data for problem finding, perspective taking, reasoning, and making metaphors, all thinking skills that help children gain a deeper understanding of the art and the world.

- **Looking includes feeling.** Perceiving a mood, sense of energy, or movement in the colors, brushstrokes, or images is an important aspect of becoming visually literate. Feelings evoked by an artwork provide legitimate evidence on which to base interpretation.

- **Looking and interpreting reflect the viewer.** Everyone brings their own unique experiences and knowledge to looking at works of art, which influence their interpretations of the meaning. Looking at art in a group can be especially enlightening because of the many different perspectives that emerge from discussing the artwork.

I don't know much about art. How can I lead my students in a discussion about it?

Art Works for Schools believes that deep engagement with art does not necessarily require a lot of background knowledge about it. The different thinking skills highlighted in the lessons provide rich and wonderful experiences that will promote a greater appreciation of the art.

We realize that this approach differs from most museum or art history lessons, which often focus on understanding the artist's intention, the time period or culture of the artwork, the movement in art history to which it belongs, the narrative story of the image, or the artist's technique. All of these aspects are important for a full appreciation of art. After being engaged deeply in the artworks through *Art Works for Schools* lessons, students are often inspired to research background information about artworks on their own.

What if I don't like art or the artworks included in this packet?

No one likes every artwork she or he sees. Keep an open mind and encourage your students to do the same; don't let your feelings about the work prejudice those of your students. There is always the possibility that you may find an artwork rewarding even if you don't come to like it.

Tips for Looking at Art

- **Get your students ready.** Ask your students to put away distracting thoughts. Remind them to be respectful of others and to listen carefully to each others' responses.

- **Be open to all kinds of responses. Remind students that there are no right or wrong answers.** Sometimes contemporary art may be intentionally ambiguous or multilayered. Many contemporary artists are pleased when viewers interpret their works in personal ways that may not have been intended.

- **Begin by asking "What do you see?"** Have the students name what they observe, that is, literally *what they see*: "a yellow line," "a man leaning against a house," "a large blue shape."

- **Remember to give "think time" after asking questions.** Wait patiently for students' responses and resist the temptation to supply answers. If you like, try counting silently to six before prompting.

- **Repeat students' answers so that the entire class may hear.** Hearing others' responses may broaden the ways students perceive the artwork.

- **Respond to students' answers in a non-judgmental, enthusiastic manner, and keep the discussion open for more interpretations.**
  Examples: "That's an interesting way of looking at it. Does anyone else see that? Does anyone see something different?"

- **Keep students' interpretations grounded in physical evidence. Ask: "What do you see that makes you say that?"** If a student responds without referring to the artwork, ask this question. It encourages students to connect their responses to physical evidence in the artwork, thereby clarifying and supporting their interpretations.

- **Point to things in the artwork as students talk about them. Ask: "Does everyone see the (shape/line/object/etc.) that Mary sees?"** Pointing encourages students to be alert to details and insures that everyone notices the part being talked about.

- **Refer to the "Observation and Interpretation Questions" on the next page to deepen the discussion.**

- **Summarize by asking students to connect the art to something else they are studying or to something in their lives.**

Looking at Art Questions

Basic Questions

What do you see?
What else do you see?
What's going on in this picture?
What do you see that makes you say that?
What else is going on?
What do you see that makes you say that?

Observation Questions

What is the first thing you noticed? Where does your eye want to go after that? What draws it there?
Are the lines wavy, jagged, diagonal, straight?
Are the shapes geometric or organic, large or small, recognizable or abstract?
Are the colors bright or dull?
Are the brushstrokes large, small, noticeable, solid, ragged?
Which shapes are in front, which ones behind? Which are smallest, which largest?
Are things in correct proportion to each other?
How is the image organized? What's in the foreground, middleground, background?
Where is it lightest, and darkest, in the picture?
If there are figures in the image, what are their facial expressions like? Their poses? Their clothes?
Where are they placed in relation to each other?

Interpretation Questions

What feelings does the picture give you? What is the mood in the picture?
Is anything happening here? How can you tell?
What, in your opinion, is the most important thing in the picture? Why?
Does anything seem like it's moving? What makes you think so?
What do you think will happen next?
What is not shown that you might expect to see?
Is there a story to this picture? Could there be a different story also?
Does the artwork look real or unreal? Why?
What title would you give this picture?
What time of day or season is shown?
What sounds, smells, or temperature might you experience if you could walk into this picture?
What questions could you ask about this picture?
What do you think the artist was thinking about when he or she made this picture?

Looking at and Thinking about Art Activity

Try this simple activity with students as a warm-up to *Art Works for Schools*. The technique is a useful foundation for many of the *Art Works for Schools* lessons.

Understanding Goals for Students

- Looking carefully at art for a long time reveals new ideas about it.
- Listening respectfully to others' ideas about an artwork can influence your own thinking.

Materials

- A slide projector and screen
- Slide: *Baneberry Night* by Morgan Bulkeley
- Paper and pencils for students
- Blackboard (optional)

Preparation

- Read over the lesson plan and the "Looking at Art" questions.
- Set up the slide projector and screen.

Procedure

Step 1: Get Ready

Five minutes

Ask your students to put away distracting thoughts and put on their imaginary detective's eyeglasses. Remind them to be respectful of others by listening carefully to their responses. Tell them they will be looking at an artwork.

Step 2: View the Artwork

Five minutes

Show the slide for five seconds, asking students to notice as much as they can in the picture. Do not tell them the title of the picture until the end of the lesson.

Turn off the projector.

Ask:

- What color was the sky? The bird?
- How many plants had white berries on them?
- Where was the straight, tube-shaped object in the picture?
- Where were the orange flowers?

Do not be surprised if students do not have answers to any or all of these questions.

Explain:

- It is very easy not to notice everything in a work of art unless we take a lot of time to really look. Even with ten seconds, we did not see everything. Let's look at it again, but this time we'll look at it and discuss it together.

Step 3: Deepen Understanding

25 minutes

Show the slide again, this time asking the "Looking at Art" questions. Be sure to ask the basic questions and, if you have time, some of the additional questions as well (see page 20). Do this for at least ten minutes. If possible, record their observations and interpretations on the board.

Step 4: Reflect and Connect

Ten minutes

Ask:

- How did their thinking change after they looked at the art for a long time?
- Did anyone see the art differently after someone else made a comment about it?
- When else would taking time to look carefully be useful?

Using Theater: Performances for Deepening Understanding

Performance can be used to explore almost anything. A performer (actor, puppeteer, dancer, or musician) at first carefully considers someone or something outside his or her own experience. Then the performer steps inside this "otherness" and tries it on. In the process, the performer has to draw on both *knowledge* of the topic being explored and *empathy* gained from personal experience. The performer's exploration engages his or her mind, emotions, voice, and body, often simultaneously. The performer's entire self is given up to the goal of deepening understanding about something or someone else, for the benefit of both the performer and the audience. Viewed in this way—as a means of deepening understanding—performance is of particularly rich value for the classroom. That is why, in the *Art Works for Schools* program, performance is used as a tool for engaging higher-level thinking.

You don't have to be a polished performer—or create a finished production—to use performance as an enjoyable and powerful technique for deepening understanding. All that is required is an adventurous spirit, an inquiring mind, and a willingness to think on your feet and share your discoveries.

This section provides an overview of key ideas about performances for deepening understanding, and a lesson for students that introduces the basic performance techniques used in the curriculum.

Using Theater: Performances for Deepening Understanding

Overview

What makes performances for deepening understanding unique, and different from other kinds of performance?

- **They are improvisational and experimental.** Students are exploring what they know, think they know, and want to know more about—and are usually not working from a written script. Their success should be judged not by how polished their performances are, but rather by how well their performances reflect and extend understanding, or by what new, useful, or beautiful ideas they discover, express, or inspire.

- **They are a window on the world, and can be about anything life is.** A student can:
  - become an object in a painting, a character in a haiku, or a drop of water in a tidepool,
  - perform a dialogue testing an interpretation of history,
  - create a dance that contrasts parallel and series electrical circuits,
  - interview a white blood cell, or
  - compose a piece of music that is a metaphor for a different experience of time.

- **They can be used to encourage broad and adventurous thinking.** A performer improvising is an explorer. Like Alice stepping through the looking glass to discover what's on the other side, the performer steps into a new reality, looks around, explores what this new reality looks like, moves like, and has to say for itself, and reports as discoveries are being made.

- **They can be used to assess student understanding of a subject.** When a performer performs, knowledge is made concrete. The student brings to bear on the performance all he or she knows.

- **They can be collaborations with the audience.** This entails a shift from most students' expectations that, as audience members, they should be entertained. Instead, student audiences need to be encouraged to think of themselves as learners in partnership with the performer.

- **They reflect the performer, as well as the topic being explored.** Everyone shapes their performances from a combination of their own knowledge, perspectives, and interpretations. That's why it's particu-

larly useful if more than one student can present performances inspired by the same topic.

- **The skills required to use performance to deepen understanding can be learned incrementally.** Performing to deepen understanding does not require "natural talent" or depend on innate ability. We all play as children to explore our world. In large part, performing to deepen understanding is just an application of a process in which we all naturally engage as young children.

How to Create a Good Improvisation

Key Moves

Root your improvisation in the topic you are exploring.

Clarify what you know.

Ask:

Who am I?
What is happening?
Why is this happening?
When is this taking place?
Where am I?
What do I want?

Set a clear structure for your improvisation.

Is there a beginning and an end?

(For instance, maybe you set a first and last line, or a limit of three minutes.)

Are there any other limitations?

(Maybe the actors have to sing all their lines, or need to stay seated.)

Call "Curtain up" to start the improvisation, and "Curtain down" to end.

Accept and explore conflict! Conflict is at the heart of drama!

Say "Yes!" to yourself.

Be brave! If you get an idea, try it out.
The braver the experimentation the better the improvisation.

Say "Yes!" to your acting partner.

If your acting partner comes up with an idea, try it out.
For instance, if your partner says "It's raining so hard." don't say "No, it's not!" Try instead: "And it was clear just a minute ago," or "Don't hog the umbrella!"

Tips for Teaching Performances for Deepening Understanding

- **Provide a safe and supportive atmosphere.** Be encouraging. Teach performance with the same enthusiasm with which you would teach any other tool for deepening understanding—like group discussion or experimentation. Remind students that as audience members it is their job to enable the performer to feel free to take risks, and to identify the performer's discoveries. They are fellow explorers.

- **Give clear guidelines.** When students are asked to improvise, a clear structure is a strong safety net, enabling them to take risks.

- **Set clear goals.** For example, early on during a unit of study in history, a student may improvise from inside a historical character with the goal of **making new discoveries.** In that case, the student should be encouraged to think broadly and adventurously, even to ramble and change directions, in search of new insights. Later on in the same unit, after the student has gained a more sophisticated understanding of that character, the teacher might request that the student set a goal of **demonstrating understanding** through another performance activity. In this case, the student should be encouraged to be as precise as possible (rather than freewheeling) and to carefully construct his or her performance from accumulated knowledge.

- **Model for your students.** Show them the rewards of taking risks by taking risks yourself! If you have never performed, or if it gives you pause, acknowledge that to your students but also register your enjoyment whenever a performance takes you to a new insight. Model an appreciation of your own efforts and progress, and feel free to laugh at yourself.

- **Help students draw on what they know.** Whenever a student is stuck for an idea during a performance, refer him or her to the topic at hand and ask leading questions, for instance, "Look back at the painting, and ask yourself what your character sees," or "Remember that the textile mill worker in this photograph couldn't speak the same language as the person working next to her. How do you think that might shape her thoughts and feelings?"

- **Keep students grounded in the topic being explored.** When a student is whirling far away from the topic into the realms of his or her own subjectivity, or getting too silly, refer the student back to the topic. Although the *Art Works for Schools* curriculum encourages broad and adventurous thinking, a completely "anything goes" attitude toward creative thinking can do students a disservice by not teaching them the basic disciplines required to develop truly productive habits of mind.

- **Encourage students to allow themselves a free and relatively unedited flow of ideas.** Once students are securely rooted in the topic at hand, they should be invited to free associate and to think aloud as they perform. They should be reassured that this is part of the process of

discovery. Some of their ideas will end up being more useful than others, and that is the way it should be. They should not allow their self-judgements to get in the way as a potentially rich idea moves from their minds to their mouths.

- **Conversely, reiterate the importance of "think time."** As long as pausing in a performance does not mean a performer is editing out a good idea, it is essential to take time to think.

- **Congratulate students for small victories.** Simplicity is often the key to discovery through performance. Invite students to keep things simple by investigating one thing at a time and taking that exploration as deep as possible.

- **Find many opportunities for students to perform.** Most student performers improve markedly when given frequent opportunities to hone their abilities. Try to build in performance activities throughout the year, so that the shy students become more comfortable and the boisterous more disciplined. Try different formats, and use the ideas in this curriculum to invent your own methods. Don't limit performance to the classroom. Expand your "stage" to art galleries, science museums, and the out doors.

- **After performances, always allow time for students to reflect on discoveries made and make connections between their discoveries and their own lives and/or topics being studied in the curriculum.** Ask students "In what ways is thinking like a performer useful for a historian? A scientist?"

- **Attend live theater as often as possible.** Make appointments to have actors talk to students after performances, and ask actors how they use improvisation and performance to help them deepen their understanding of their world.

See the Appendix "Making the Most of a Field Trip: Going to the Theater or Concert Hall."

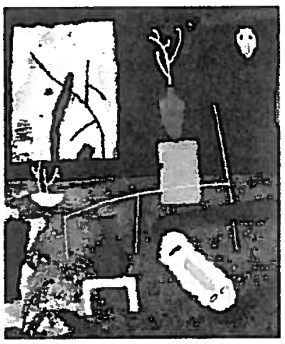
Performances for Deepening Understanding: A Theater Techniques Tool Box for Exploring Visual Art

Try these activities as warm-ups for the performance techniques introduced in *Art Works for Schools*. You can also use these techniques to inspire transfer lessons of your own invention in other areas in the curriculum.

Adaptable to any age
40–90 minutes

Understanding Goals for Students

- You can explore and deepen your understanding about an artwork—or about someone or something outside yourself—through performance.
- Performance can engage your entire self: mind, body, and voice.
- Thinking through performance can give you ideas you might not get otherwise.



Materials

- A slide projector and screen
- Slide: *What's Happening Here* by Todd McKie
  (Note: Although we have chosen here a work from the DeCordova Museum collection, you can use any work of art or photograph you think would be worth exploring.)

Preparation

- Read over the lesson plan.
- Depending on the amount of time you have for this lesson, choose which of the Theater Techniques you would like to use from Step 3: Deepen Understanding.

Procedure

Step 1: Get Ready

Five minutes

Ask:

- When have you pretended to be something or someone else?
- When have you watched someone else do that?

Explain:

- Today you are going to explore a work of art the way an actor would, by entering it with your imaginations, bodies, and voices, and performing what you discover.

Step 2: View the Artwork

Five to ten minutes

Tell students that they will have one full minute to look silently at the artwork. Invite them to carefully observe as much as they can. Show the slide.

Ask:

- What do you see?
- What else do you see?
- What's going on?
- What do you see that makes you say that?

Collect different impressions, asking students to back up their interpretations with what they see and what they think they know.

Step 3: Deepen Understanding

20–60 minutes

Depending on the amount of time you have, invite students to engage in one or more of the following activities. Model the activities first yourself.

Explain:

- We're going to experiment with a number of techniques for stepping into this work of art the way an actor might.

Character Monologues

Ask:

- Which "character" in the artwork seems to you the most important or interesting? (It may be an object or a color or a shape, rather than a person.)
- What might it say?

Have individual students point to their choice of character first and then give the character a voice, saying what they feel that character might be thinking or saying.

Help students provide structure to their improvisations by saying "Curtain up" when they are ready to begin and "Curtain down" when they are ready to stop. However, if they stop too soon, and you think they have more to explore, feel free to request a second act!

You might invite students to speak from inside the character of the medium as well: "What might the paintbrush have said as it was creating this work of art?" "What might the lens have said as it was choosing how to frame this picture?"

Character Dialogues
Have two students choose characters and improvise a dialogue.

Character Dialogues with Movement
Invite two students who have volunteered to perform a dialogue to come up and stand next to the artwork and take on some aspect of the characters with their bodies before they begin speaking. Encourage them to add movement throughout their dialogues.

Refer students back to the artwork and help them base their ideas on what they see there:
"What do you see that gave you the idea to say that? Move like that? Make that sound?

Jazz Improvisation
Ask:

- If the characters in this artwork were to make sounds without words, what could they be?

Collect a few possibilities, and then explain that the entire group will create a jazz improvisation together, with you as the bandleader. Point to a "character" in the art work to which you would like to give sound, and bring in students one at a time (or one group at a time), adding a new sound with each, until you have a full and complex "orchestration" that reflects the art work. As the leader, you might "conduct" the jazz piece, lifting or quieting the volume and changing the speed.

Ask:

- Are there other possible jazz pieces in this artwork?

Let students conduct other interpretations.

Movement Improvisation
Ask:

- If the characters in this artwork were to move like dancers do, how might they move?

Invite volunteers up one at a time, adding performers until there is a collective improvisation in motion.

Ask:

- Are there other possible dances in this artwork?

Let students choreograph other interpretations.

What Play is This?

Ask:

- If this work of art were a stage set, what kind of play would take place here? Do you imagine a comedy, tragedy, tragi-comedy, farce, musical, etc.?
- What actions can you imagine?
- What sounds do you hear?

Divide students into pairs. Have them discuss and write dramatic scenes inspired by the artwork. Read the scenes aloud.

Experiment with alternative formats to suit your curriculum goals. Most of these activities can be adapted or expanded into writing exercises (with students writing monologues or scenes) or visual art activities (with students illustrating the dramas they imagine taking place or creating puppets that would appear in the artwork if it were a set).

Step 4: Reflect and Connect

Five to ten minutes

As the students discuss their experiences, revisit the Understanding Goals set out at the beginning of this lesson.

Ask:

- What activities did you find most enjoyable? Most challenging? Why?
- Did using performance to explore the artwork lead you to any thoughts that you might not have had through observing with your eyes alone? If so, why?
- What other topics from life or from the school curriculum would be interesting to explore through performance?

Module 1

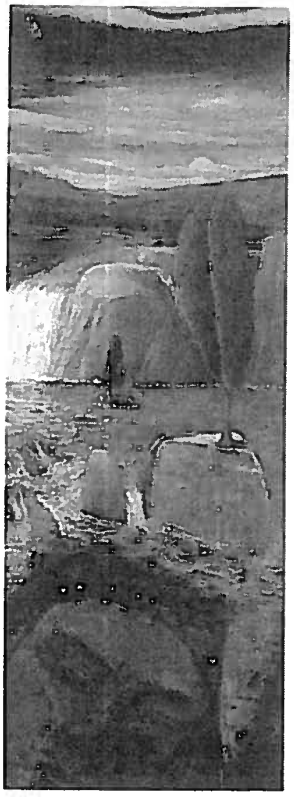
Artful Reasoning

Lead author Shari Tishman, with assistance from
Tina Grotzer, Laura Howick, and Debra Wise

Artful Reasoning

Artful Reasoning

What's happening here?
What does this mean?
What's this picture all about?



These are questions of interpretation, and they are the most natural questions in the world. They are also questions that naturally invite reasoning. Put simply, reasoning is what we do when we try to answer the question "What does this mean, and why?"

This module teaches students how to build thoughtful interpretations about works of art. By emphasizing transfer, it also teaches students to reason thoughtfully in other areas of the curriculum.

Artful Reasoning
Contents

Before You Start: The Basics for Teachers

Tools and Techniques: Lessons for Students

Resource Materials

Before You Start: The Basics for Teachers

Overview

What is reasoning?

In everyday usage, the word *reasoning* has an elastic definition. Sometimes it is used narrowly, to refer to formal, objective, or logical thinking. Other times it is used as a synonym for thinking or intelligence in general. Broadly, reasoning refers to the thinking processes involved in forming conclusions, interpretations, and explanations. Reasoning is what we do when we try to understand what something means, or how something works, by using all of the information available to us in a thoughtful, sensible way.

Reason is sometimes contrasted with emotion and intuition and other "subjective" internal experiences, and philosophers have long debated about how narrow or inclusive the concept of reasoning should be. In an everyday sense, the extent to which reasoning is broad or narrow, strictly logical or inclusive of the role of emotion, has to do with its context—with the thing we are reasoning about. If what we are trying to understand—an artwork, for instance—is informed by emotions and intuitions, then it is "reasonable" to include them in our concept of reasoning about art.

What does reasoning have to do with art?

When people look at works of art, they often ask questions like "What does this mean? What's going on here? What's this work of art all about?" These are questions of interpretation, and they are the most natural questions in the world.

An interpretation of an artwork is an explanation of what it means. Reasoning about art means trying to build good interpretations. It involves paying very close attention to what your eyes and your senses tell you about an artwork, and thinking carefully about how these observations add up.

This module teaches students how to build thoughtful interpretations of works of art. And, by emphasizing transfer, it also teaches students to apply their reasoning skills to other subjects and topics in the curriculum.

How is reasoning about art like, and unlike, reasoning in other areas?

Reasoning about art has the same structure as reasoning about things in other areas. The structure is this: there is an interpretation of something—a painting, a scientific phenomenon, a historical or current event—and the interpretation is based on observations and inferences. In addition to a

structural similarity, reasoning in art and in other areas shares some of the same standards. For example, in all areas it is useful to make careful observations, to be clear about the difference between observations and interpretations, to identify areas of uncertainty, and to be aware of bias.

Although there are similarities in the structure and standards of reasoning across disciplines, there are important differences too. One difference concerns what sorts of observations and impressions legitimately count as reasons. In art, a person's emotional response can legitimately be a reason invoked in support of an interpretation. For instance, if a painting makes you feel joyful, it may be reasonable to cite that as a reason for interpreting the painting as being celebratory in spirit. In science, on the other hand, it is generally not viewed as legitimate for emotions to support interpretations in this way.

Another important difference between reasoning in art and reasoning in the sciences is that, in art, there is often no single correct interpretation. Works of art are open to many different interpretations, none of which may be objectively right or wrong but many of which may be insightful and revealing. One painting can legitimately have many different interpretations. On the other hand, a physical phenomenon such as an eclipse has only one correct scientific explanation.

If there is not a single correct interpretation of a work of art, what's the point of reasoning about art? Doesn't reasoning involve deciding which interpretation is right?

One of the wonderful things about art is that most works of art are open to multiple interpretations. People see many different things in artworks and bring many different perspectives to their art experiences. But just because something can have many different interpretations doesn't mean that all interpretations are equally good. A good interpretation is one that yields insight or understanding into the artwork. Interpretations tend to be good when they are well reasoned, that is, when they are built out of careful observations and good inferences. Teaching students to reason about art means helping each student to craft his or her best interpretation. It doesn't mean teaching all students to see a work of art in the same way.

What about the artist's intentions? Don't they count as the "correct" interpretation?

Sometimes people think that interpreting a work of art means guessing correctly what the artist had in mind when he or she made it. Probing artists' intentions is certainly important, but it is also important to remember that often artists themselves don't know exactly what their works mean. Or, even if they are fully aware of what they think they were trying to express in a work of art, the work often means more than they intended. This "more" can be a matter of many different things, such as the artist's unconscious intentions, the social context of the work, the physical context of the work, and the viewer's own context.

Why teach students to reason about art?

1. **Interpreting the meaning of what we see is a natural part of looking at art.** Consider the six-year-old who points to a painting in a museum and says "Look, Daddy, that's a painting of a dragon attacking a castle. See the dragon's tail and the flames coming out of its mouth?" The child is giving an interpretation of the work that is structurally similar to one that an expert art critic gives. She is explaining the meaning of something and supporting her explanation with reasons. Reasoning is a natural cognitive impulse in response to artworks, so we might as well try to do a good job of it. Just as a talented basketball player works on cultivating her natural athletic gifts, reasoning about art means trying to get better at what comes naturally.

2. **Reasoning about art deepens our understanding of particular works of art, because it pushes us to see artworks more deeply and more clearly.** Instead of taking our observations and inferences for granted, constructing well-reasoned interpretations challenges us to pay close attention to the artwork—to look again and again at a work to explore and test what we see. Because art is multilayered and complex, paying close attention to it tends to be very rewarding. The closer you look, the more you see and feel and learn.

3. **Because art is so vivid and engaging, and because it so naturally invites interpretation, many people find the structure of reasoning more visible in art than in other subjects.** It is generally easiest to learn about things in contexts where we can see them most clearly. The visibility of reasoning in art makes art an especially good place to draw students' attention to the structure of reasoning in general and to make students more sensitive to the presence of reasoning in other areas.

Reasoning: Key Moves and Attitudes

Key Moves

Observe carefully; notice details.

Observe broadly: look at things from lots of different perspectives and points of view.

Always come back to the artwork or topic—look closely at it, again and again.

Notice your own feelings and sensations.

Separate observations and interpretations.

Be aware of slanted viewpoints (biases) and incomplete information.

Make sure you can give good reasons for your views.

Look for reasons for and against your interpretation.

Look and listen for lots of different interpretations.

Don't be afraid to change your mind, when there are good reasons to do so.

Key Attitudes

Be observant.

Be probing.

Be thoughtful.

Be open to changing your mind.

Tools and Techniques: Lessons for Students

Building Interpretations

An interpretation explains or tells the meaning of something. Interpretations are built out of impressions, observations, and background information that are used as reasons to support and justify the interpretation. Interpretations are strengthened when they take into account alternative interpretations or counter-arguments, and when they suggest provocative questions. The Interpretation Organizer, introduced to students in Lesson 2, is a tool for understanding something more deeply by building a thoughtful interpretation of it. It works by leading students through a series of questions that explore the various elements of thoughtful interpretations.

Tips for Teaching the Building Interpretations Lessons

Find ways to challenge students to observe more and more deeply, and be creative in drawing out students' observations. For example, ask them how they would describe the artwork to someone over the telephone. Can they list at least five things they see that haven't been mentioned? Can they elaborate on other people's observations?

Help students develop their concept of reasoning by encouraging them to use the language of reasoning. Encourage them to use the words *observation, interpretation*, and *reason*, and use these words often in your interactions with them.

Encourage students to try to distinguish between observations and interpretations, but don't feel you need to be a stickler about it. There's always plenty of gray area, and students will have more practice making the distinction in later lessons.

Remember to encourage students to look for counter-arguments, especially when using the Interpretation Organizer. Recognize that the most common form of counter-argument that students will give is an alternative interpretation (i.e., a more convincing story). This is fine, as long as the alternative interpretation accommodates all of the observations that the original interpretation includes *and* seems to do a better job of making sense of them.

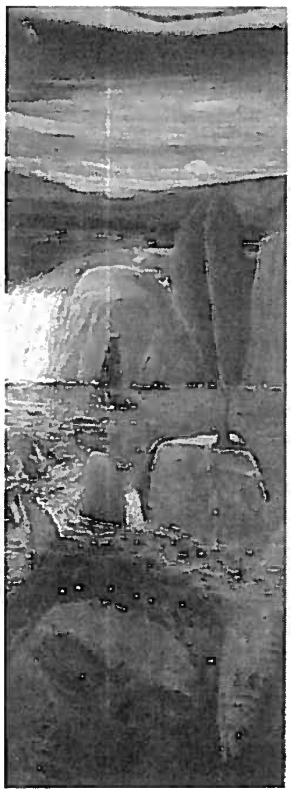
When giving students verbal or written feedback, use the items here and in the Touchstones section as guides. (For example, note that a student has made detailed observations, given a well-supported counter-argument, used the language of reasoning, etc.)

Lesson 1

Building Interpretations: Visual Art

In this lesson, students learn how to explore a work of art by reasoning about it. The reasoning process involves making *observations*, forming *interpretations*, and supporting interpretations with *reasons*.

Suitable for middle elementary/adaptable for all ages
45 minutes



Understanding Goals for Students

- When you look at a picture and describe the things you see in it, you are making observations.
- When you look at a picture and ask "What does this mean? What's going on?" you are forming an interpretation of the picture.
- When you use observations in support of, or against, an interpretation, they become reasons.
- Making observations and then forming an interpretation that is supported by reasons is a powerful way to explore a work of art.

Materials

- Slide: *Journey's End* by Candace Walters
- Slide projector

Preparation

- Read through the lesson before you begin.

Procedure

Step 1: Get Ready

Five minutes

Tell students that today they will start the lesson by looking at a work of art and simply making lots of observations.

Ask:

- Can anyone explain what the word *observation* means?

An *observation* is a description of what you see.

Take a few ideas.

Explain:

- In a moment, we will make observations of an artwork. I want you to describe everything you see, and to hold off on giving your opinions or ideas. Later in the lesson, we'll have a chance to give our opinions.

Step 2: View the Artwork

Five minutes

Show the class the slide of *Journey's End*. Tell students to take a full minute of quiet time to look and to concentrate on observing as much as they can.

Step 3: Deepen Understanding

25 minutes

This three-part step asks students to practice making observations and introduces two more terms: *interpretations* and *reasons*.

Step 3A. Practice Making Observations

Ask:

- What do you see? Remember, just tell me what you see. Try to hold off on giving any opinions or interpretations for now.

Collect responses and encourage students to make more detailed observations by asking things like "Can you describe that in detail?" Students will probably drift towards giving opinions and interpretations about what they see. When this happens, ask students to hold on to their ideas for now: you'll be asking for their ideas and opinions later in the lesson, after you've collected people's observations.

Continue to ask the class "What else do you see?" until it feels natural to stop.

Ask:

- What sensations and feelings does this work give you?

Again, continue to ask this question until all ideas have been collected.

Step 3B. Introduce the Idea of Interpretation

When students start to run out of observations, tell them that now you are going to ask them for their *interpretations* of the picture.

Ask:

- Can anyone give us a definition of the word *interpretation?*

An *interpretation* explains or tells the meaning of something.

Take a few ideas, then ask students for their interpretations of the picture.

Ask:

- What's going on in this picture?
- What do you think is happening?
- What story is this picture telling?
- What's this picture about?

After some ideas have been suggested,

Ask:

- Does anyone else see anything else going on? Does anyone have a different interpretation, or want to add to someone else's interpretation?

Lakisha interpreted the picture as a sleeping goddess. Joshua interpreted the picture as a polluted river in a land where an ancient civilization had been.

Strengthen students' understanding of interpretation by using the word to summarize the different interpretations that students have given. Acknowledge that people may have many different interpretations of a picture. That's fine.

Step 3C. Introduce the Idea of Reasons

When you think your students have grasped the concept of interpretation, move on to the idea of *reasons*. Tell students that now you are going to ask them to give reasons for an interpretation.

A *reason* is something you say in response to the questions "Why?" or "What makes you think that?" The function of a reason is to support, or argue against, an interpretation.

Ask:

- Can anyone explain what *reasons* are?

Take a few ideas, then explain that observations become reasons when they are used in connection with an interpretation.

Choose an interpretation from the ones that students have given. If possible, choose one that is shared by several students. Ask students to give reasons for the interpretation by stating what they observe in the picture that makes them think that. Even if some students don't agree with the interpretation, ask them to try to find reasons to support it—just for practice! As you did with the term interpretation, help strengthen the students' concept of reasons by using the word frequently and encouraging them to use it too.

Question: What's going on in this picture?

Interpretation: The woman is dreaming.

Questions: What do you see that makes you think that? What are your reasons?

Reasons: Her eyes look closed, and the landscape doesn't look real.

Question: What's your reason for thinking it's a woman?

Reasons: Her face looks soft, and she has little jewels on her forehead.

Step 4: Reflect and Connect

Ten minutes

Conclude the activity by asking students to reflect on what they have learned. Keep in mind the Understanding Goals listed on the first page of this lesson.

Ask:

- What new ideas do you have about this picture that you didn't have when you first looked at it?
- How did the concepts of observations, interpretations, and reasons affect your thinking about the picture?
- Can you think of other times when people make observations and then form interpretations supported by reasons, as we did in this lesson? For example, do you think scientists do this? Journalists? When else would it be good to use this process?

Lesson 2

The Interpretation Organizer: Visual Art

In this lesson, students learn how to use a tool called the Interpretation Organizer—an activity sheet that helps them build thoughtful interpretations of works of art.

Suitable for middle elementary/adaptable for all ages
45 minutes

Understanding Goals for Students

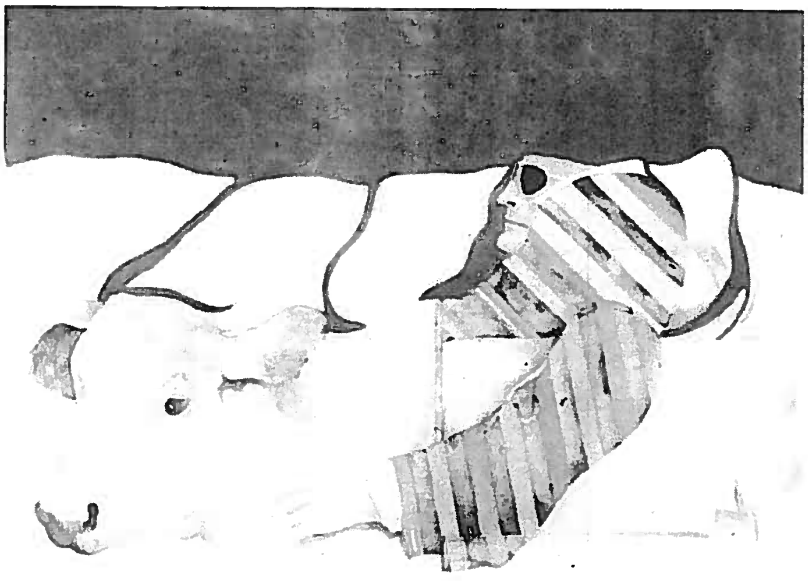
- Interpretations of an artwork can grow and change as you continue to look and think more deeply.

Materials

- Slide: *The Ambassador* by Frederick Lynch
- Slide projector
- Copies of the Interpretation Organizer: Visual Art activity sheet for every student

Preparation

- Read through the lesson plan.
- Review the Interpretation Organizer activity sheet and plan how you will explain it to students.
- Set up the slide projector.



Procedure

Step 1: Get Ready

Five minutes

Remind students that, in the last lesson, they started learning how to build a thoughtful interpretation of an artwork. An interpretation is thoughtful when it is supported by reasons.

An *interpretation* explains or tells the meaning of something.

A *reason* is something you say in response to the questions, "Why?" or "What makes you think that?"

Ask:

- Can anyone remind us what the words *interpretation* and *reason* mean?

Tell students that today they will use an activity sheet called the "Interpretation Organizer." The Interpretation Organizer is a tool to help them organize their thoughts about an artwork in order to build a more thoughtful interpretation of it.

Step 2: View the Artwork

5 minutes

Show the slide and give students a minute to look at it quietly.

Ask:

- What do you see? What do you think is going on in this picture?

Take a few comments, but don't try to hear from everyone. After three or four responses, tell students that now they will each work on their own, writing down their ideas on an activity sheet.

Step 3: Deepen Understanding

25 minutes

Pass out a copy of the Interpretation Organizer to each student and explain the activity sheet. Tell students that it asks several questions that will help them build a thoughtful interpretation of the picture and explore the picture more deeply. They will have 20 minutes to work on it.

Tell students to try to answer every question. Assure them that there are no "right answers." What's important is to observe the picture carefully and link their answers to what they actually see in the picture.

Explain that, as they work through the activity sheet, they may find that they want to go back and change, or add to, some of their earlier answers. That's good! It means that their ideas are growing.

Step 4: Reflect and Connect

Ten minutes

When students are done, ask for volunteers to share their ideas. Make sure to collect a few ideas for all of the questions on the sheet.

Remind students of the lesson's Understanding Goal—that interpretations of an artwork can grow and change as you continue to look and think more deeply.

Ask:

- When else do people make interpretations that grow and change over time as a result of continued looking and thinking?

Anticipate the next lesson by mentioning that one place people make thoughtful interpretations of things they see is in science. In the next lesson, students will use a slightly modified Interpretation Organizer to explore an image from science.

Picture of Practice

Student work sample from a fifth grade student

Interpretation Organizer
VISUAL ART

Name Andy artwork: The Ambassador

1. What do you see?
(Look at what stands out...look at what's hidden. Look at small things and big things.)

I see a cow and a man. They look like they're in the snow and The Blue streaks look like rivers. Then the blue looks like a sky. On the cow is a thing with stripes that looks like a human body.

2. What's going on? In two or three sentences, give your interpretation. .

A Man is taking An Injured person to safety on his cow. The Injured person is laying on the cow in bandages.

3. Why do you think so? What are your reasons? What do you see and feel, and what information do you have, that supports your interpretation?

I think the man is injured because he has clothes over him. I think s man because its white background.

4. **What would someone say or do to argue *against* your interpretation?**

They would probly say something about the cloth raped something. I think it's a man but people could think other things.

5. **How have your ideas or feelings about artwork changed? Is there something you see now that you didn't see before?**

My ideas of artwork have changed because this picture shows that artwork can mean different things to different people. A thing I saw ~~now~~ than before was some of what looks like over loping paper.

6. **List two questions you have about this artwork.**

What was the artist thinking.

What is it representating.

Lesson 3

Transferring the Interpretation Organizer to Science

In this lesson, students use the Interpretation Organizer to build a thoughtful interpretation of a visual image from science. The image, which we will call "Fossil Evidence," is a picture of some fossilized animal tracks. Paleontologists study such tracks to try to interpret what they mean.*

Suitable for middle elementary/adaptable for all ages
45 minutes

Understanding Goals for Students

- Just as in art, reasoning in science involves constructing thoughtful interpretations.
- Just as in art, exploring arguments against an interpretation in science sharpens your understanding of the image or topic.
- Just as in art, scientific interpretations can grow and change and raise new questions and puzzles.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- Copies of the Interpretation Organizer: Science activity sheet, for every three students (students will work in groups of three or four)
- Copies of the image "Fossil Evidence" for each student

Preparation

- Read through the lesson plan.
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want students to understand.
- Review the Interpretation Organizer activity sheet and plan how you will explain it to students.
- Plan how you will divide students into groups.

*This lesson is adapted from "Observing Footprints from the Past," an assessment activity developed by D. Lopath, C. Matlock Sr., C. Matlock Jr., B. Pease, and E. Snyder for the Connecticut Common Core of Learning, Performance Assessment Project, Sponsored by the National Science Foundation (nd).

Procedure

Step 1: Get Ready

Five minutes

Remind students that in the previous two lessons they have been learning how to build thoughtful interpretations. In the last lesson, they used a tool called the Interpretation Organizer. Today, they'll use the Interpretation Organizer on a science topic instead of an artwork.

Ask:

- What kinds of things do scientists try to interpret?

Take a few ideas.

Explain:

- Scientists look at things and events in the physical world and try to explain how they work or what they mean. For example, astronomers look at the universe and try to interpret what they see in order to explain how the stars and planets work. Microbiologists look through microscopes at tiny organisms and try to interpret what they see in order to explain how different kinds of cells work.

- Today you will imagine that you are paleontologists. Paleontologists are scientists who look at physical evidence from the distant past and try to interpret it in order to explain what happened a long time ago. Often, this evidence is in the form of fossils. *(If necessary, explain to students what a fossil is.)*

Step 2: View the Image

Five minutes

Divide students into groups of three and give each group the "fossil evidence" image. Ask students to take a minute of quiet looking time before they begin talking. Tell them to look carefully at the image. As they do with artworks, they should begin by focusing simply on what they see.

Step 3: Deepen Understanding

25 minutes

Pass out an Interpretation Organizer to each group. Have one member of each group record the group's ideas in writing.

Tell students that, for the purpose of the activity, they may make three assumptions about the image:

Explain (or write on the blackboard):

- The toes are on the front feet of the animals.
- The animals walk forward.
- The animals are earth-type animals, not aliens.

Review the Interpretation Organizer with students, and tell them that they will have about 20 minutes to work on it. Remind them that, as they work through the activity sheet, they may find they want to go back and revise their earlier answers. For example, they may want to revise their answer to question #2 *(What's going on?)* once they think deeply about question #3 *(What would another scientist say to argue against your interpretation?)*. That's fine. Revising one's views based on further thought and observation is an important part of science. Urge students to try to answer all of the questions as best they can.

When students are done, ask each group to briefly report their ideas. Make sure they report their interpretation *and* the argument they invented against it. Also make sure they share some of the questions they came up with (question #6).

Step 4: Reflect and Connect

Ten minutes

Conclude the lesson by asking students to reflect on the activity. Because this is a transfer lesson, it is especially important to recall the Understanding Goals of the lesson and emphasize them as you lead the discussion.

Ask:

- What was challenging about this lesson? What was fun? What was surprising?
- How does using the Interpretation Organizer on an image from science compare to using it on an artwork?
- Where else in science could you use the Interpretation Organizer?

Lesson 4

Transferring the Interpretation Organizer to Social Studies: Witnessing a Conflict, Part I

In this lesson, two students stage a dramatic improvisation of a conflict and the rest of the students are "eyewitnesses." Then, students use the Interpretation Organizer to build a thoughtful interpretation of the conflict they have witnessed.

Suitable for middle elementary/adaptable for all ages
45 minutes

Understanding Goals for Students

- People who witness events can interpret them in different ways.
- Reasoning carefully about an event you've witnessed helps deepen your interpretation of it.
- When people reveal their reasoning behind their interpretation of an event, it is easier to understand the differences in people's interpretations.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- The Playwriting Improvisation sheet from the resources section
- Copies of the Interpretation Organizer: Witnessing a Conflict activity sheet, for every student, or every pair of students, depending on the format you choose

Preparation

1. Familiarize yourself with the lesson a few days before you teach it. Note that you will need to work with two students in advance of the lesson to help them prepare a staged conflict.
2. Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want students to understand.
3. Choose a subject for a conflict between two characters that relates to a concern of the students or something you're studying in class. For example, you could choose two characters from a historical event, or invent two characters who represent different sides of an issue, or use two characters from a newspaper article.

4. Decide how you will have the students prepare: you can have them rehearse the conflict ahead of time (with or without having written a script), or you can fill them in on their roles and have them improvise the conflict for the first time on the day of the lesson.
5. Try not to let anyone but the two actors know the subject of the conflict in advance.

Procedure

Step 1: Get Ready

Ten minutes

Ask:

- Have you ever seen a conflict in a situation where there were also other witnesses?
- Do you think the other witnesses interpreted it in the same way you did?

Give students a minute to recollect, then take a few examples.

Tell students that today's lesson has three parts. First, they will witness a conflict staged by some classmates. Next, they will use the Interpretation Organizer to construct interpretations of what happened. Finally, they will compare and discuss their interpretations.

Step 2: View the Conflict

Five minutes

The student actors stage the conflict. The rest of the class observes it carefully.

Step 3: Deepen Understanding

20 minutes

Pass out the Interpretation Organizer and review it with students. They will have about 15 minutes to work on it. Students can work in pairs or individually. The student actors should also do the activity, although they should not be partners, since they will each interpret their own improvisations differently.

When everyone is done, have students share their reasoning with the rest of the class. You'll probably find that students interpreted the conflict in different ways by focusing on different details.

Remind your students that good reasoning anchors interpretations to evidence.

Step 4: Reflect and Connect

Ten minutes

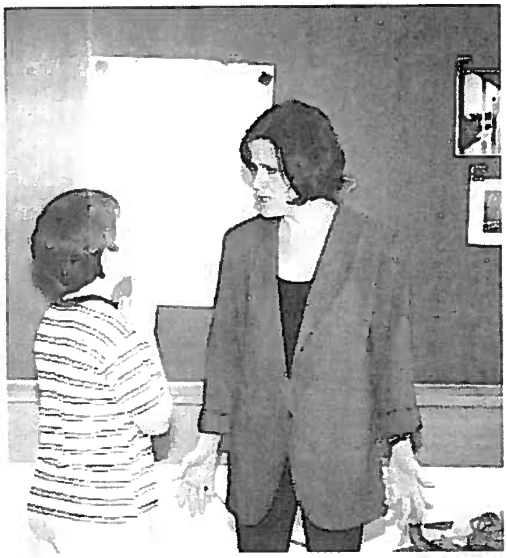
Help students reflect on what they have learned in this activity. Explicitly remind students of the Understanding Goals of the lesson.

Ask:

- What were the differences and similarities in interpretations of the conflict?
- How was this like or unlike forming interpretations of an artwork or an image from science such as "Fossil Evidence"?

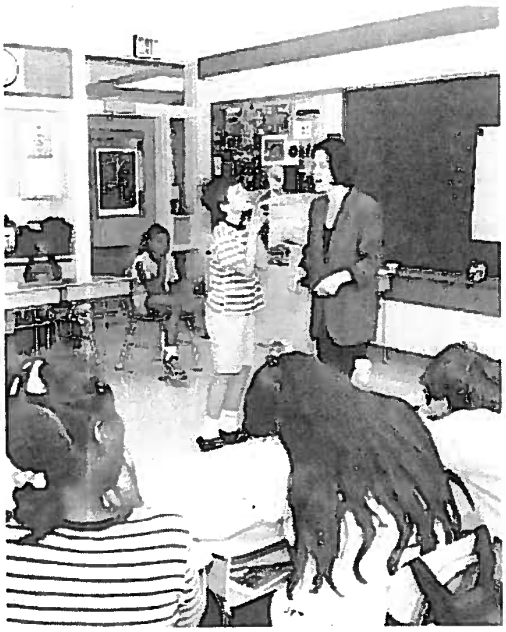
Picture of Practice

Transferring the Interpretation Organizer to Social Studies: Witnessing a Conflict, Part I



The Conflict

The teacher and a student create and stage a conflict based on an actual conflict being faced by a student in another classroom. The situation is between a mother and a son. The mother wants her son to go to a music camp, for which she has already placed a deposit. Paying for this camp is a stretch for this family. The son wants to skip the first day of camp to attend a concert of his favorite band. Doing so would require one of his parents to miss work to drive him to camp late.



Discussing Answers to the Interpretation Organizer

In response to the question "What did you see?" these seventh-grade students were able to make detailed observations that fed the discussion about their differing interpretations of the conflict.

Student: "The boy was standing up straight."
Teacher: "How might that affect your interpretation of him?"
Student: "That he was proud and thought that he had good reasons."
Another Student: "No! He was being disrespectful to his mother."

When asked about questions they had about the conflict, many students wanted to know how it was going to play out ("What happened when the father came home?").

Touchstones for the Building Interpretations Lessons

How to tell if things are going well:

Students make lots of diverse observations. Occasionally they make observations that surprise you!

Students make *generative* observations—observations that open up new perspectives or dimensions.

During discussions, there is a conversational feel in the classroom: students listen and respond respectfully to one another.

Many students participate in the discussion, particularly students who tend to be quiet.

Students express their feelings but don't let their feelings stop the discussion or block the flow of responses.

Students feel comfortable disagreeing with one another.

Students aren't afraid of appearing wrong. They are able to let go of an interpretation they've made in favor of another one.

Students use the word *because* a lot.

Students use appropriately the words *observation, interpretation*, and *reasons*.

Students gradually start using more conditional language to state their interpretations, moving from saying *This is a . . .* to saying *This might be a . . .* or *This could be . . .* or *This might mean . . . .*

Students want to talk about an artwork or topic for a long time—longer, even, than the time period allows!

Students support their interpretations by referring to things that they actually see in the artwork.

Separating Observations and Interpretations

Observations and interpretations are different things. An observation involves *noticing something and describing what you see.* An interpretation involves *explaining what something means.* When we look closely at things, especially works of art, it's natural to bounce back and forth between making observations and making interpretations. More observations spark new and deeper interpretations, which in turn spark more observations, and so on. Sometimes it's hard to tell the difference between an observation and an interpretation, because so much of what we see is filtered through our prior ideas and assumptions. Nonetheless, even if "pure" objectivity is impossible, the idea that observations differ from interpretations is important and intuitively accessible even to young students. Separating observations and interpretations is a tool for building thoughtful interpretations, because it helps students to organize their ideas and impressions and think carefully about exactly what they see and feel and think.

Tips for Teaching the Separating Observations and Interpretations Lessons

Help students deepen and expand their observations by asking them to observe specific features, such as line, shape, color, and texture.

Encourage students to be precise when they describe their observations, and to notice details.

Find ways for students to make observations in other modalities. For example, have students sketch an artwork or part of an artwork as a way of observing it. Or have them make "kinesthetic sculpture" by using their bodies to simulate and observe forms or shapes in the artwork.

Remind students frequently of the definitions of observation and interpretation, and refer to them when there's a question about what category a comments belongs in. You may even want to post the definitions on the wall.

Acknowledge to students that it can sometimes be very tricky to separate observations and interpretations, and make it a game rather than a high-stakes, right or wrong task.

Remember that the purpose of separating observations and interpretations is to deepen overall understanding of the artwork or topic. While you want to help students recognize the difference between the two, you don't want them to get so absorbed in worrying about the distinction that they miss the big picture.

As always, give students plenty of time to look.

Lesson 5

Separating Observations and Interpretations: Looking at Art

In this lesson, students continue to practice making detailed observations of a work of art. They also continue to practice separating their observations from their interpretations.

Suitable for middle elementary/adaptable for all ages
45 minutes

Understanding Goals for Students

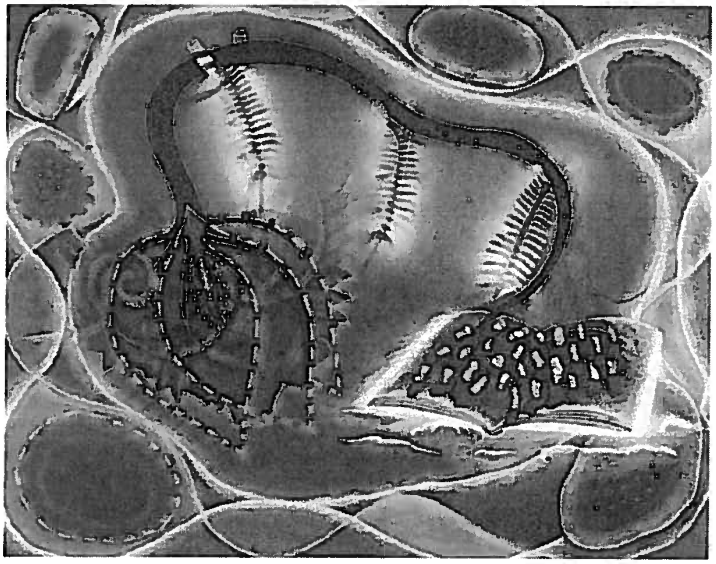
- Looking long and deeply helps you to notice more things.
- Observations are different from interpretations.
- When we look closely at a work of art, it's natural to bounce back and forth between making observations and making interpretations: more observations spark new and deeper interpretations, which in turn spark more observations, and so on.

Materials

- Slide: *Transfusion* by Marcy Hermansader
- Paper and pencils

Preparation

- Read through the lesson before you begin.
- Familiarize yourself with the definitions of *observation* and *interpretation.*



Procedure

Step 1: Get Ready

Ten minutes

Tell students that today they will look at a picture and focus on the difference between making observations and forming interpretations about it. Acknowledge that they have done this before in previous lessons. Today they will practice getting better at it.

Ask:

- Can anyone remind us what the words *observation* and *interpretation* mean?

An *observation* involves noticing something and describing what you see.

An *interpretation* explains or tells the meaning of something.

Step 2: View the Artwork

Ten minutes

Make sure everyone has paper and a pencil. As usual, give students a moment of quiet time to look at the picture.

Ask:

- As you look at the picture, write down five observations—five things you see in the artwork. Try to write down just what you see, not your interpretation of what's going on.

Step 3: Deepen Understanding

15 minutes

Put two headings on the blackboard: *Observations* and *Interpretations*.

Ask students for some observations from the lists they just made and write them on the board. You may get some interpretations instead of observations. That's fine; just put them in the *Interpretations* list. When students do give an interpretation, push them to state the observations underlying their interpretation by following up with the question: "What do you see in the picture that makes you say that?"

After you've written down several observations, ask students to switch to thinking about interpretations. Ask: "What is going on in the picture (or in any part of it)? What story is it telling? What is it about?" Take some ideas. Follow up every interpretative statement with a question that pushes students to state the observations underlying their interpretation ("What observations have you made that make you say that?") and add the observations to the *Observations* list.

Continue to alternate between asking for observations and asking for interpretations.

Help students make careful observations by saying things like:

- Describe exactly what you see.
- Describe one section of the picture in detail.
- Elaborate on your description by adding details (e.g.: "I see a black oval. I see a black oval surrounded by a brownish circle, surrounded by black dots. I see that the black dots are surrounded by a bit of white, inside a red shape that looks like these other shapes."

Step 4: Reflect and Connect

Ten minutes

After the discussion is over, have students reflect on the experience, keeping the Understanding Goals in mind.

Ask:

- What new ideas do you have about this picture that you didn't have when we started the discussion?
- Is it hard to distinguish between observations and interpretations? Why or why not?
- Did you notice that we went back and forth between making observations and interpretations, and that new interpretations seemed to spark more observations, and vice versa? What do you make of that?
- Can you think of other situations, outside of art, when it is useful for people to distinguish between observations and interpretations?

Lesson 6

Transferring Observation and Interpretation to Social Studies: Witnessing a Conflict, Part II

In this lesson, as in Lesson 4, two students stage a dramatic improvisation of a conflict and the rest of the students are "eyewitnesses." This time, instead of using the Interpretation Organizer, students refrain from making interpretations and instead practice making "objective" observations.

Suitable for middle elementary/adaptable for all ages
45 minutes

Understanding Goals for Students

- People can see the same sequence of events in very different ways.
- What seems objective to one person can seem like an interpretation to someone else.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- The Playwriting Improvisation sheet from the resources section
- Paper and pencils

Preparation

- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want students to understand.
- Choose a subject for a dramatic conflict and two students to enact it, as you did in Lesson 4. Note that in this lesson you won't be using the Interpretation Organizer, just paper and pencils.

Procedure

Step 1: Get Ready

Five minutes

Remind students of the first "Witnessing a Conflict" lesson in this module (Lesson 4).

Ask:

- When we watched the conflict that [name of student] and [name of student] enacted, what did we learn about how we make observations and form interpretations?

Explain:

- Today we'll witness a conflict again, but we'll do something slightly different. This time, instead of trying to form an interpretation of what's going on, we'll simply record our observations as objectively as possible ("Just the facts, ma'am!").

Make sure students have paper and pencil handy so that they can write down their thoughts as quickly as possible after the conflict is enacted. In fact, they can make quick notes to themselves during the conflict, if they like, as long as that doesn't make it too difficult for them to observe carefully.

Step 2: View the Conflict

Five minutes

Have the actors stage the conflict while the rest of the class observes.

Step 3: Deepen Understanding

25 minutes

Ask students to write down exactly what they saw, trying not to interpret but just to record. (This time, the student actors needn't do the activity, since, as participants, they can't also be "objective" observers. But they should definitely participate in the follow-up discussion.)

When students are done, have several students read their written records. Compare the results aloud. Did everyone see the same thing? If not, why not? What might be the reasons for the differences?

Step 4: Reflect and Connect

Ten minutes

Ask students to reflect on the kind of thinking they did in this exercise.

Ask:

- How different was it to try to observe something objectively, as opposed to observing something when they were trying to construct an interpretation? What did they do differently this time?
- When might it be important, or hard, to observe something objec-

tively? (For example, imagine you are a journalist whose goal is to objectively report on a conflict. What might be the barriers to being objective? How might you overcome some of these obstacles?)

- Does this activity affect anyone's thoughts about what they read or hear in the media?

Picture of Practice

Separating Observations and Interpretations: Witnessing a Conflict, Part II

The Conflict

Students arrive at their own conflict, based on one experienced by a classmate. The scene begins with a girl reading, sitting near an open backpack. A boy enters the scene, begins to collect his books, and notices that his planner is missing. He accuses the girl of taking it. She claims she did no such thing. He finds out that she is reading a library book taken from his backpack, and she insists that he had borrowed the library book from her, that she had found it on the ground, and that he should pay her the late fee for the book.

Separating Observations and Interpretations

Most students list the same observations, though there are some differences of opinion. For instance, one student thinks she heard the girl in the conflict say that the planner was hers, while most students remember that she said the library book was hers. The most common mistakes that students make between observations and interpretations involve value judgements on the characters ("He was too careless and he didn't know where he put his things"). Students engage in a lively discussion about the kinds of professions that require the ability to distinguish between observation and interpretation—most of their suggestions have to do with the law, though by the end of the class they are making connections with what historians and scientists do. Their discussions reflect their own experiences and the concerns that they have about people in their homes and school communities.

Touchstones for the Separating Observations and Interpretations Lessons

How to tell if things are going well:

Note: Most of the Touchstones from the previous section, "Building Interpretations," are also relevant here. This page adds a few points and highlights some earlier ones that are especially important.

Students make lots of diverse observations. Occasionally they make observations that surprise you!

Students make *generative* observations—observations that open up new perspectives or dimensions.

Students gradually become more precise in describing their observations, noting qualities like line, shape, color, etc.

Students gradually start using more conditional language to state their interpretations, moving from saying *This is a . . .* to saying *This might be a . . .* or *This could be . . .* or *This might mean . . . .*

Students are aware of the definitions of *observation* and *interpretation* and use them appropriately.

Students feel comfortable challenging and being challenged by each others' classifications, for example by pointing out that an observation is really an interpretation.

Students are able to dwell on details of the image or topic but don't get lost for too long and are able to bounce back up to see the big picture.

Exploring Bias

Having a *bias* means having a perspective or opinion that is slanted or prejudiced by incorrect assumptions or incomplete information. Sometimes people are aware of their biases, but just as often they aren't. We are often unaware of the beliefs and assumptions we bring to reasoning experiences, just as we are often unaware that the background information we have may be incorrect or incomplete. As a reasoning technique, exploring bias helps students probe their assumptions and background information in order to explore the slanting effect these things may have on making observations and forming interpretations.

Tips for Teaching the Exploring Bias Lessons

As you have been doing in the previous lessons, encourage students to make detailed observations and continually remind them to connect their interpretations to what they see in the artwork or enactment.

When students are working in pairs, if you think they need some structure in order to have a rich discussion, have the pair write down their observations and interpretations, separating them into two columns.

Bias isn't necessarily an obstacle to reasoning, as long as it is ultimately revealed. It can be very informative to experience something from a particular slant or perspective, as long as you are able to step outside or beyond the perspective at a certain point in order to see the bigger picture. (The perspective-taking module explores this theme in detail.) In the closing discussions of the lessons, ask students when they think it would be useful to have a bias, and how they could be sure to be able to recognize and go beyond their biases when necessary.

Lesson 7

Exploring Bias: Looking at Art

In this lesson, students interpret a work of art about which they have some limited information. Half the class gets one version of information about the picture, the other half gets another version. Afterwards, students compare their interpretations and discuss the differences among them.

Suitable for middle elementary/adaptable for all ages
45 minutes

Understanding Goals for Students

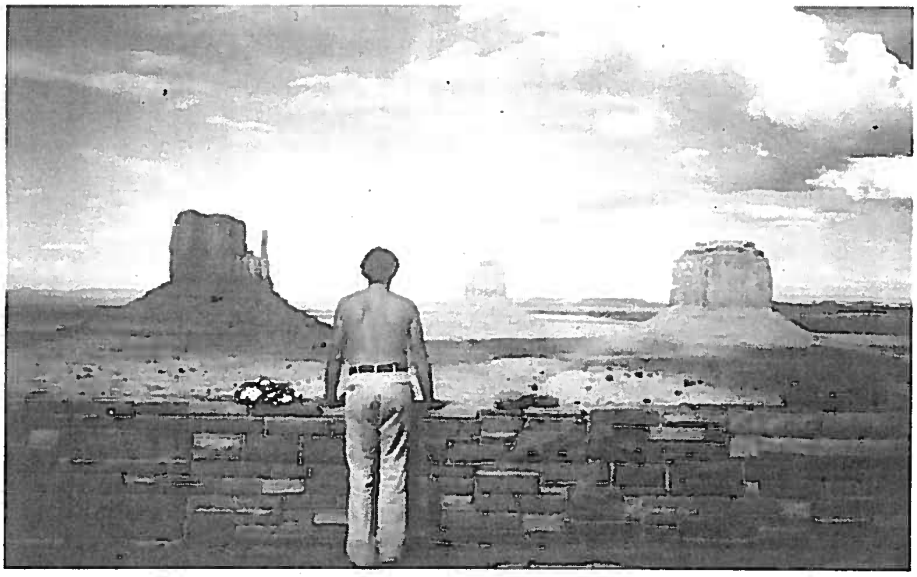
- When we reason about something, it's natural to use all of the information available to us.
- Information can bias our interpretations of things, especially when the information is very limited or incomplete.

Materials

- Slide: *Monument Valley, Utah* by Rodger Kingston
- Slide projector
- Enough copies of each information blurb for half the class

Preparation

- Familiarize yourself with the lesson.
- Decide how you will distribute the information blurbs, and how you will divide students into pairs.



Procedure

Step 1: Get Ready

Five minutes

Tell students that today they will be looking at a picture as usual, and ask them to ready their minds to do their best looking. You will be giving them a little bit of written information about the artist beforehand. Half the class will get one set of information, labeled "A," and the other half will get another set, labeled "B."

Distribute the information blurbs, giving half the class version A and the other half version B. Make sure neither group sees the other's version!

Step 2: View the Artwork

Five minutes

Show the slide and, as usual, take a full moment of quiet time to look at it.

Step 3: Deepen Understanding

25 minutes

Students should work in pairs. **Each member of the pair should have the same information blurb.**

Remind your students of the difference between *observation*, describing what you see, and *interpretation*, thinking about what something means.

Students should talk together about their observations, and then about their interpretations. Give them about ten minutes for discussion.

After ten minutes, ask students to stop their discussions. Before having the pairs share their ideas, read both blurbs aloud to the class or have a student volunteer read them. Then ask each pair to report on their discussion. Before each report, tell the pair to state which blurb they were given.

Step 4: Reflect and Connect

10 minutes

Reflect with students on the activity and discuss the role that the information blurb played in people's reasoning. Keep the Understanding Goals in mind as you lead the discussion:

Ask:

- What new questions or ideas do you have about the picture?
- Where else in life—in school or outside of school—do we make interpretations based on limited information that might bias our thinking?

Information Blurb A

Artwork: *Monument Valley, Utah* by Rodger Kingston

This is a photograph, made in the 1980s, of a national park in Utah. The artist, who is from New England, took the picture while he was sightseeing for the first time out west. He was especially attracted to the unique landscape and the sky.

Information Blurb B

Artwork: *Monument Valley, Utah* by Rodger Kingston

This photographer tries to "capture America" with his work. He loves wild country and seeks to preserve it in his photographs. The man in the foreground is a Navaho Native American who lives on a reservation.

Lesson 8

Transferring Exploring Bias to Social Studies: Witnessing a Conflict, Part III

In this lesson, as in Lesson 4, two students stage a dramatic improvisation of a conflict and the rest of the students are "eye-witnesses." This time, instead of remaining impartial, students will take the side of one of the actors and view the conflict from that perspective.

Suitable for middle elementary/adaptable for all ages
45 minutes

Understanding Goals for Students

- The side you take influences how you see a conflict.
- People who take different sides often notice different things.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- The Playwriting Improvisation sheet from the resources section
- Paper and pencils

Preparation

- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want students to understand.
- Choose a subject for a dramatic conflict and two students to enact it, as you did in Lesson 4 and Lesson 6. When you're choosing a subject, try to choose something that doesn't have an obvious bad guy/good guy structure, but that does have two strongly conflicting viewpoints. Some examples might be a parent arguing with her child about how much TV to watch, or two politicians arguing about whether or not to use part of a public park for a basketball court.

Procedure

Step 1: Get Ready

Five minutes

Remind students of the previous "Witnessing a Conflict" lessons.

Explain:

- Today I want to ask you to do something different and try to take the side of one of the actors in the conflict, rather than staying objective. For example, you can imagine that you are close friends with the person the actor is portraying, and/or that you are very sympathetic to the point of view the actor is expressing. When you are observing the conflict, try to see it from your assigned actor's point of view.

Assign half the class to take the point of view of one actor and half the class to take the point of view of the other.

Make sure students have paper and pencil handy so that they can write down their thoughts as quickly as possible after the conflict is enacted. They can make quick notes to themselves during the conflict, if they like, as long as that doesn't make it too difficult for them to observe carefully.

Step 2: View the Conflict

Five minutes

Have the actors stage the conflict while the rest of the class observes.

Step 3: Deepen Understanding

25 minutes

After the conflict is over, ask students to write down what they saw. Remind them to take the point of view of the actor they were assigned, trying to see the conflict as he or she saw it. The two actors should also write down the story of what they did from their own points of view.

When students are done, have several students from each of the points of view read their written records. Make sure to have the two actors read their own stories.

Step 4: Reflect and Connect

Ten minutes

Have students reflect on the kind of thinking they did in this activity. Keep in mind the Understanding Goals as you lead the discussion:

Ask:

- What difference did it make to take the point of view of one of the actors as opposed to trying to be objective as you did in previous lessons?
- What kinds of things did you tend to notice when taking a particular point of view? What kinds of things did you tend not to notice? When are people likely to take sides when witnessing a conflict or listening to an argument? When might it be important to be careful about taking sides?

Touchstones for the Exploring Bias Lessons

How to tell if things are going well:

Note: Many of the Touchstones from the previous sections, "Building Interpretations" and "Separating Observation from Interpretation," are also relevant here. This page adds a few points and highlights ones that are especially important.

Students are increasingly able to separate observations and interpretations.

Students are increasingly able to describe their observations precisely and in detail.

Students increasingly use conditional language to state their interpretations, moving from saying *This is a . . .* to saying *This might be a . . .* or *This could be . . .* or *This might mean . . .*

Students are becoming more aware of the complicated nature of interpretation and how difficult it can be sometimes to separate observations and interpretations.

Students are learning that what they think they see objectively is often affected by the information that is available to them and the point of view they take.

Students are growing more comfortable with their "fallibility"—that is, their susceptibility to the influence of information and point of view. They come to see this as a natural human tendency that is important to stay aware of and guard against, rather than something about which to be defensive.

Resource Materials for the Artful Reasoning Module

Frequently Asked Questions about Reasoning

"Sometimes students have strong feelings about artworks. How do I handle students' emotions? I don't want to tell them not to express their feelings, but shouldn't emotions be kept separate from reasoning?"

Art can evoke strong as well as subtle feelings. Although sometimes reason and emotion are viewed as opposites, in fact emotions play an important role in reasoning about art because they provide essential input and information from which interpretations are built.

Although it is certainly important to encourage and validate people's emotional responses to art, it is equally important not to let emotions block an exploration of an artwork. Sometimes, when we ask people how a work of art makes them feel, there's an unspoken sense that once someone has stated their feelings, the discussion should be over. *Those are my feelings, and that's that.* But stopping the discussion once emotions are mentioned does a disservice to their contribution to the reasoning process. Emotions can be probed and explored and challenged, just like any other perception. Practice asking students follow-up questions that help them examine their emotions. For example, instead of having dialogues like these:

Teacher: How does this painting make you feel?
Student: I like it; it makes me feel good.
Teacher: Oh . . . that's nice.

or

Student: It's creepy; it makes me feel scared.
Teacher: Oh . . . well, I can understand that.

Aim for:

Teacher: How does this painting make you feel?
Student: I like it; it makes me feel good.
Teacher: That's great. Can you say more about how it makes you feel good? What do you think is going on in the painting to make you feel this way? Are there some parts that make you feel better than others? Why or why not?

Student: It's creepy; it makes me feel scared.
Teacher: I can certainly see that. Can you say more about what parts of the painting are scary? What do you think is going on in the painting that makes you feel this way? Do you think the person who painted it wanted to scare people? Why or why not?

"Often my students tell long, elaborate stories about the work of art used in the activity. The stories are great, and I don't want to stifle children's creativity. But they seem to get caught up in inventing the story and lose sight of the point of the activity. What should I do?"

Many teachers use works of art as springboards for students' creativity. That's great! A work of art can be a wonderful point of departure for students to make art of their own, whether in response to the particular artwork or simply inspired by it. For example, often teachers show students a painting and then ask them to make a painting themselves, perhaps using similar techniques. Or they show students a painting and then invite them to use it as a starting point in making up a story. These activities are great ways to stimulate students' creativity. But they don't necessarily involve reasoning. Reasoning about interpretations is only one of many ways to explore works of art. But if you have made a commitment to teaching a reasoning activity, it is important to maintain that commitment throughout the activity.

Children are natural storytellers and the lure of telling a fanciful story about an artwork can be strong. Stories are fine, but in terms of reasoning, it's important to be clear about the purpose of stories. In the context of reasoning, stories are a way of presenting an interpretation. As such, they need to be closely connected to what students actually see in the artwork. If students seem to be going off on a storytelling tangent, remind them to stay connected to the artwork and press them to focus on observational details.

Discouraging students from spinning off into creative expression for its own sake doesn't mean that students can't build or present their interpretations in the form of a story—or through drawing, or theater, or any other medium. On the contrary! It's great to use different art forms to explore what a work of art means, and other lessons in *Art Works for Schools* have students do exactly that. For example, in the "Magic of Making Metaphors" module, students use dramatic techniques to make metaphors for an artwork. In the "Problem Finding" module, students use drawing techniques to explore a question or puzzle about an artwork. Whatever medium students use, what's important is for students to stay anchored to what they actually see. Helping them stay anchored is relatively simple: all you need to do is frequently encourage students to tell you, or point to, exactly what they see in the artwork that makes them think the way they do.

"Sometimes when I ask students to separate observations and interpretations, it's hard for them (and me!) to decide exactly what's an interpretation and what's an observation. Does it matter where you draw the line?"

At a fundamental level of perception, all observations can be considered interpretations, since we can't step outside of the human condition to view our experiences from another perspective. Nonetheless, the idea that there is a difference between immediate sensory experience and complex "constructed" thought is intuitively grasped, even by young students. To illustrate

this, just ask a six-year-old to tell you the difference between knowing and guessing. But while the idea of the distinction between observation and interpretation is clear to students, actually making the distinction can be challenging. Almost always, the difficulty has to do with mistaking an interpretation for an observation, rather than the other way around. The reason for this is that the mind likes to make sense of things and does so even unconsciously. Our ideas appear to us as "given," and we often have to unpack our first impression of something in order to see that it's really an interpretation rather than a direct perception.

Naturally, young children are less sensitive to the nuances of interpretation than older children. For example, a ten-year-old may look at an ambiguous figure in a painting and say "I think that's a little boy," while a six-year-old may simply "see" the figure as a little boy and not recognize its ambiguity. Despite different developmental levels, a good way to help students of any age sharpen their ability to make the distinction between observations and interpretations is to encourage them to use precise language when describing what they see. For instance, prompt them to precisely describe the colors, lines, and shapes they see. Or, in the "Witnessing Conflict" lessons, prompt them to precisely describe the gestures, actions, and expressions of the actors.

The important thing to remember is that making the distinction between interpretations and observations isn't an end in itself. Rather, it is a useful way of sharpening and clarifying thought. As a teacher, you want students to be as rigorous as they can be about making the distinction, without losing sight of the larger purpose of the activity. One way to do this is to enlist your students' help in looking for signs, or clues, that something that has been labeled an observation is really an interpretation. For example, telling a story about something is a sign of an interpretation. A statement that goes beyond what can actually be seen in the artwork is a sign of an interpretation. Ascribing inner intentions or motivations to someone or something is a sign of an interpretation.

"If there can be many different interpretations of an artwork, does that mean that all interpretations are equally good? How do I get my students to aim for high-quality interpretations and also send the message that lots of different interpretations are okay?"

Because art is made by humans and is inherently metaphorical and complex, many different interpretations of an artwork can exist simultaneously. In science, this isn't the case: we generally believe that there is only one correct interpretation or explanation of physical phenomena. Nonetheless, there are some guidelines for constructing thoughtful interpretations that apply across the disciplines. These guidelines aren't strict rules. But they are useful yardsticks in creating and identifying high-quality interpretations. Because science aims for one correct interpretation of things, these guidelines help scientists determine the single "best" interpretation. In art, these guidelines can be used to judge the merit of multiple interpretations without forcing one interpretation to supplant another.

One guideline concerns comprehensiveness. A good interpretation is comprehensive in the sense that it takes into account, or explains, all available data. For example, in science, an explanation of an eclipse should take into account all aspects of the eclipse. In art, a good interpretation of a work of art should take into account all relevant, observable aspects of the artwork. In both art and science, an interpretation is weak when it only explains a small piece of something and leaves large pieces out of the story.

Another guideline for constructing good interpretations concerns what philosophers of science sometimes call *generativity*. An interpretation (or scientific theory) is generative if it yields interesting and important questions or research directions. In other words, an interpretation is generative if it helps you identify what else you need to learn or do in order to understand something better.

Yet another guideline connects to what scientists call *replicability*. In science, of course, this means that the observations and tests on which a theory is based can be performed by another person and yield the same results. Replication in art is much less formal. It has to do with explaining your interpretation in a way that gets other people to "see" the artwork the way you do. A good interpretation often causes a shift in other people's perception, causing them to look at the work anew and say "Oh, I see what you mean." This doesn't mean that a good interpretation is necessarily the one most people agree upon, nor does it mean that experiencing a perceptual shift as a consequence of someone else's interpretation will necessarily make you change your original interpretation. But, as an informal guideline, replicability helps guard against total subjectivity.

Interpretation Organizer

Visual Art

Name:

Artwork:

1. What do you see?
(Look at what stands out and what's hidden. Look at small things and big things.)

2. What's going on? In two or three sentences, give your interpretation.

3. Why do you think so? What are your reasons? What do you see and feel, and what information do you have, that supports your interpretation?

4. What would someone say or do to argue against your interpretation?

5. How have your ideas or feelings about the artwork changed? Is there something you see now that you didn't see before?

6. List two questions you have about this artwork.

Interpretation Organizer

Witnessing a Conflict

Name:

Image or Topic:

1. What did you see? Try to describe as much as you can.

2. What was happening? In two or three sentences, give your interpretation.

3. Why do you think so? What are your reasons? What did you see, and what knowledge do you already have, that supports your interpretation?

4. Suppose another eyewitness disagreed with your interpretation. What would he or she say to argue against your interpretation?

5. Have your ideas about this conflict changed, now that you've thought about it? Is there something you now see or think that you didn't before?

6. List two questions you have about this conflict.

Interpretation Organizer

Science

Name:

Image or Topic:

1. What do you see?
(Look at what stands out and what's hidden. Look at small things and big things.)

2. What's going on? In two or three sentences, give your interpretation.

3. Why do you think so? What are your reasons?
What do you see, and what knowledge do you already have, that supports your interpretation?

4. Suppose another scientist disagreed with your interpretation. What would he or she say to argue against your interpretation?

5. How have your observations and interpretations of this topic changed? Is there something you see now that you didn't see before?

6. List two questions you have about this topic.

Playwriting Improvisation Sheet

(Character 1)
and

(Character 2)
are

(Where)

(Talking about and doing what)

Brief descriptions of characters. *Consider age, gender, family, and background. Consider what this character:*

- *Perceives (hears, sees, feels)*
- *Thinks and cares about*
- *Knows or thinks he or she knows*

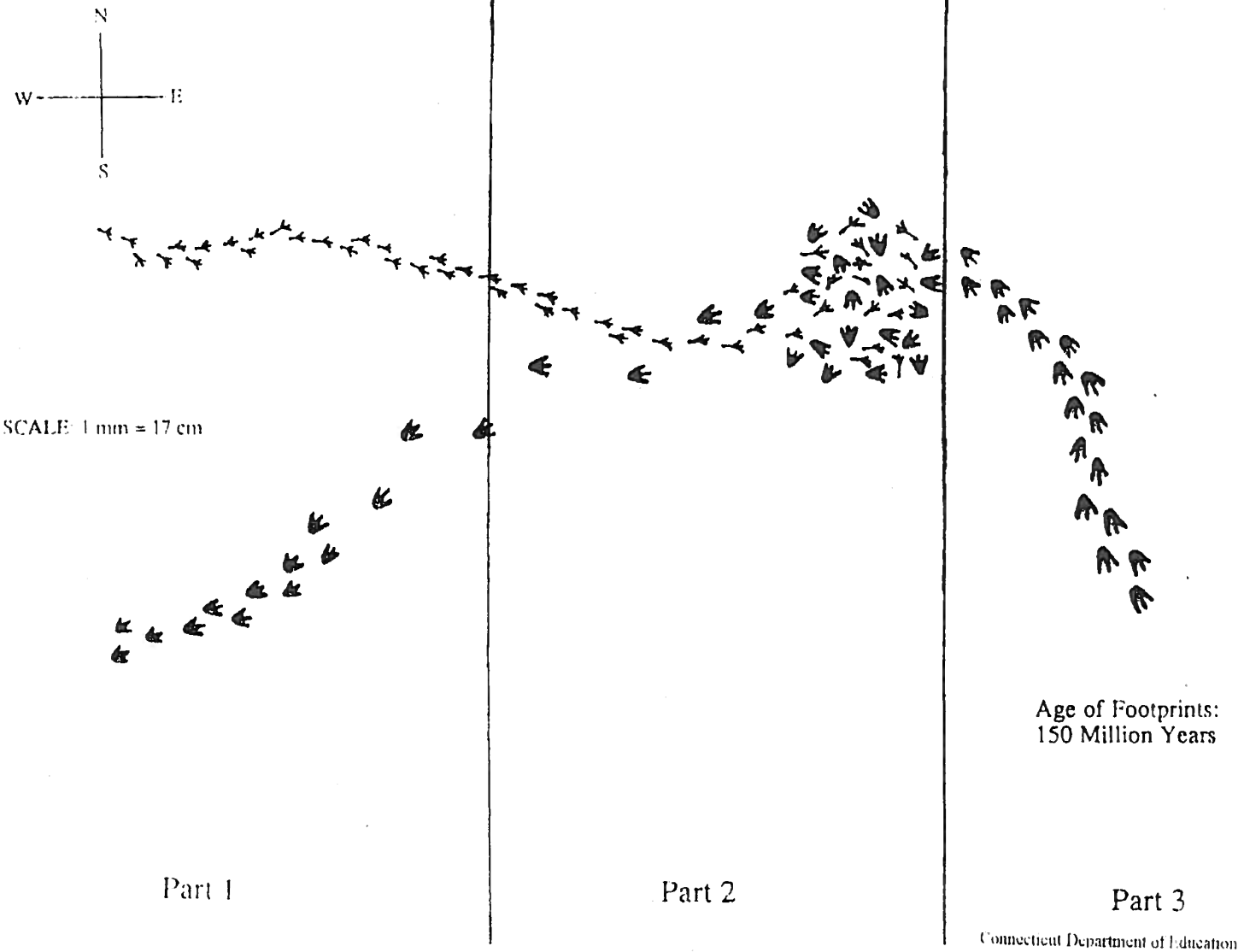
Character 1:

Character 2:

Special conditions of time and place:

Improvise ten lines of dialogue each. *Pass papers to each other, after deciding who goes first. Never speak except on paper, or exhibit any judgement of the other's ideas! Listen and react from within your character.*

Footprints #1



Age of Footprints:
150 Million Years

Connecticut Department of Education

Additional Lesson Suggestions in Brief: Reasoning Module

Experiencing a poem: listening openly at first, then moving to interpretation

Choose a short poem, or a stanza from a longer poem.

Get ready by telling students that you're going to read a poem aloud and that you want them to simply listen openly. Explain that, at this point, they should just enjoy the poem and not try to decide what it means.

Experience the poem by reading it aloud, twice. Before reading it a third time, tell students that now you'd like them to start thinking about what the poem means and to begin forming an interpretation of it.

Deepen understanding by reading the poem aloud a third time. Then either write the poem on the blackboard or give students copies of it. Ask students to take some time to think carefully about what the poem means, and to support their interpretation with things they notice in the poem. (If you want, you can use the Interpretation Organizer activity sheet). Collect students' ideas and discuss the poem.

Reflect and connect by asking students how they formed their interpretation and whether it made a difference to hear the poem several times. Ask them whether there are other things that it can be good to experience a few times openly at first, before forming an interpretation.

Separating observations and interpretations: exploring an image in the media

Find a current events picture in a newspaper or magazine.

Get ready by asking students to recall what they have learned about separating observations and interpretations.

View the image by showing students the picture and giving them a few moments of quiet time to look.

Deepen understanding by asking students to list several observations about the image, taking care to try to withhold from making interpretations at this point. Eventually, ask students to switch to interpretations: based on their observations, what do they think is going on in the picture? What do they see that supports their interpretation? Continue to note any new observations that are mentioned as students articulate their interpretations.

Reflect and connect by asking students to think about (1) how their understanding of the image developed as they explored it; (2) how the activity of

separating observations and interpretations affected what they saw and thought; and (3) what new ideas they have about images in the media.

Variations: Do the same activity using an image from an advertisement, or use an interesting physical object that students are unfamiliar with, such as a specialized tool.

Exploring historical bias by comparing two different images of the same person

Find two different images of a well-known historical figure, such as George Washington, Pocahontas, or Harriet Tubman. Look for images that have been made either at different times or by people with quite different cultural perspectives (most libraries will have more than one book about these people, with more than one illustration of the historical figure).

Get ready by explaining to the class that they will be looking at two different images of the same person. Ask them to predict what sorts of orientations, or biases, they might expect to see reflected in the images.

View the images by giving students a moment of quiet time to look. If possible, first show one image, then the other, then the two together.

Deepen understanding by discussing the similarities and differences in the images. Ask students what's going on in each picture, and in particular what the pictures tell them about each artist's ideas about the historical figure. Also, ask students what questions they have about the historical figure, based on comparing the two different artists' perspectives on him or her.

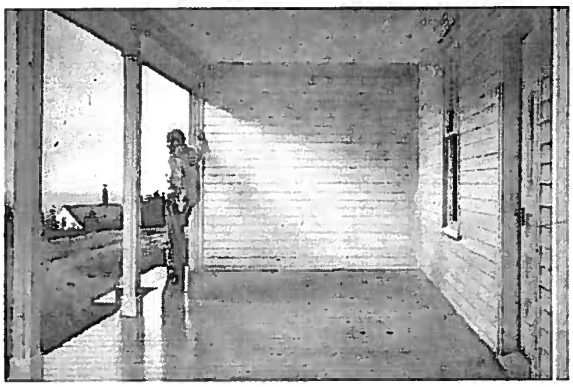
Reflect and connect by discussing how different artists' perspectives can affect how they portray someone. How should this affect the way we interpret historical pictures? What clues can we look for in historical pictures to help us better understand the influence of artists' perspectives?

Module 2

The Power of Perspective-Taking

Lead author Tina Grotzer, with assistance from
Shari Tishman and Debra Wise

The Power of Perspective-Taking



What do you think about the artwork? . . .
What might the person pictured be thinking about? . . .
How does knowing what the person might be thinking change what you think?. . .

Questions like these invite us to engage in perspective taking. Wanting to know what others are thinking is a natural human tendency and such questions can open doors to new understanding.

Perspective taking involves stepping out of our own subjectivity as much as possible and adopting someone else's subjectivity. It invites us to learn about the world vicariously through others' experiences. It's what draws us into a good novel or a heartfelt movie. It invites us to dream about many possible lives to help us live our own lives more fully and insightfully.

This module teaches students techniques for "seeing through new eyes" and for considering diverse perspectives in order to more deeply appreciate works of art. By emphasizing transfer, it also teaches students to apply these perspective-taking techniques to other subjects, building a deeper understanding of different curriculum areas.

The Power of Perspective-Taking
Contents

Before You Start: The Basics for Teachers

Tools and Techniques: Lessons for Students

Resource Materials

Before You Start: The Basics for Teachers

Overview

The real voyage of discovery consists not in seeking new landscapes, but in having new eyes.

—Marcel Proust

What is perspective-taking?

Perspective-taking involves the act of "seeing through new eyes." It engages the viewer in what some philosophers consider to be an impossible act, that of stepping outside of one's own perception and attempting to perceive as someone else would. Philosophical questions aside, the very act of *trying* to see through someone else's eyes invites us to imagine new possibilities. It also helps us to step outside our own perspective enough to realize that we hold one and that it can limit or encourage insight.

Art Works for Schools attends to both the physical contributions (i.e., what we perceive) and the attitudinal contributions (i.e., what we think and feel about what we perceive) to our overall perspective. It invites learners to consider how each contributes to our perspective and to appreciate the fact that they interact in complex ways. While it can be simplifying to separate them for young learners, it is ultimately important to help students recognize their inseparability.

More specifically, what do we mean by the *physical contributions* to our perspective? In art, the term *perspective* can refer to a specific drawing technique that makes a scene appear as if it has depth. However, in Artworks for Schools, physical contributions refer to physical orientation and composition. By physical orientation we mean the position of the viewer in relation to the image. Our physical orientation often dictates what information is available to us and can profoundly influence our experience of an artwork. It includes what we perceive from our physical location—what we can see, hear, smell, taste, and feel. By physical composition we mean the way the artist has composed the image. Compositional variables include relationships of positioning, scale, dimensionality, scope of view, and illumination. These variables can draw our attention to different aspects of the work.

The following questions focus on the *physical* contributions to our perspective. The examples in parentheses refer to the artwork on the opening page of the module.

- Where am I as a viewer? ("It appears as though I am at eye-level with the man on the porch.")
- What is the size and position of the most prominent part of the image in relation to other parts? ("The man on the porch is large and central, dwarfing the distant views beyond him.")
- How does the angle of perception influence what is seen? ("I am looking straight at the corner of the porch which makes its emptiness stand out.")
- What physical perspectives did the artist choose to depict? ("The artist picked an angle that shows the man looking at the view but not the view itself. It makes me wonder about what the man sees and what his thoughts are.")
- Where can I project myself into the artwork so that I can gain a new physical perspective? ("The artist does not reveal what the man is staring at. I could imagine what I might see standing on that porch.")

You can encourage students to try to "live inside" many different physical points of view by:

1. Varying their perceptions:
   - Changing their positions.
   - Thinking about the sizes and scale.
   - Looking at the artwork or object in different kinds of lighting.
   - Noticing relationships between dimensions.
   - Widening or narrowing their field of vision.

2. Stepping outside their own perceptions:
   - Looking from imagined, unlikely positions.
   - Imagining the artwork as a different size.
   - Imagining that the lighting is different.
   - Imagining that the dimensions are changed.

Art Works for Schools also explores *attitudinal contributions* to our perspective: how states of mind shape our experience of an artwork. This includes beliefs (what one thinks and knows), values (what one holds in esteem), intentions (what one intends and aspires to), and mindsets (whether one assumes a flexible or rigid stance). We may seek to understand these by considering our history of experiences and knowledge; affiliations and politics; stable characteristics such as ethnic background, cultural orientation, and gender; temporary states such as mood, feelings, or level of comfort; and orientation toward the future, as in goals, intentions, dreams, fears, and hopes.

The following questions focus on the *attitudinal* contributions to our perspective. Again, the examples in parentheses refer to the artwork on the opening page of the module.

- How do my own moods, feelings, and beliefs influence how I view this artwork? ("I see it as sad because it appears to be the end of summer and that's when my own children will head off to college. It makes me feel empty.")
- What would it be like to look at this artwork through the eyes of other viewers? ("If I were a child looking at this, it might seem like an inviting place to explore." "At first I thought this artwork was about early Spring and the promise of summer, but after hearing other people's perspectives, I think it might be about autumn and a time of reflection.")
- What would it be like to look at this artwork through the attitudes of someone or something in the artwork? ("I became the light in the artwork and thought about how it illuminated the porch but made the distant views fade away.")
- What might the artist have been thinking when he made the decision to focus on the man? ("Perhaps he was feeling reflective about life's changes and wanted us to ponder what might be happening for this man.")

You can encourage students to try to "live inside" many different attitudinal points of view by:

1. Varying their own attitudes:
   - Considering how their goals, intentions, and feelings affect what they see.
   - Thinking about how what they care about affects what they see.
   - Considering the influence of their beliefs, experiences, and culture.
   - Examining their own assumptions.
   - Considering their own knowledge base.

2. Stepping outside their own attitudes:
   - Imagining how different feelings or intentions impact their viewpoints.
   - Considering how things they *could* care about impact their experience.
   - Trying on cultural backgrounds, imagining how each impacts their experience.
   - Imagining the experience through the eyes of different people or characters.
   - Imagining living at different times and how it changes what they perceive.

The various contributions to our perspective interact in complex ways. For instance, we might adopt a certain attitude toward something (threatened, for instance) because our physical perspective encourages it (perhaps we are looking up at it). Similarly, our attitude can invite certain physical perspectives (deciding to view from afar or getting right up close). Therefore, it is important to consider how both physical position and attitude contribute to our perspective.

Why teach perspective-taking?

Seeing with new eyes is crucial to deeply understanding many situations, concepts, and topics, from simple to complex. Living in a social world requires that we adopt different perspectives in order to empathize, negotiate, and resolve conflict. Understanding current and historical events requires examining multiple viewpoints on "what happened." Writing stories often involves developing a variety of perspectives. Many science concepts require that we step outside our immediate perceptions.

Perspective-taking techniques can help us become more aware of the existence and influence of our own perspectives. Our perspectives can easily be limited by assumptions that we make (in extreme forms, our stereotypes and prejudices); the range of our experiences, which can limit what we can empathize with or imagine; blindnesses, or that which we choose not to attend to; and/or information that is withheld, selectively presented, or otherwise manipulated.

We can learn to proactively expand our perspective by seeking out opportunities to expand our range of experiences; seeking out opportunities to live inside others' views; seeking out and evaluating assumptions; revealing our own cultural beliefs and learning how they influence reasoning and behavior; reasoning by analogy to understand different beliefs; and proactively evaluating how information is presented and deciding how to accept the portrayal.

Research shows that students do not necessarily learn these proactive skills and habits on their own. They need opportunities to learn them. While students are often given opportunities to adopt different perspectives, they are seldom taught techniques to help them do so. Perspective taking is learnable, and the techniques in this module should help your students learn to see with new eyes.

How does perspective-taking transfer between disciplines?

As students move from novice to expert in any area of understanding, they tend to move from more general to more nuanced understanding of the thinking patterns involved. What are some of the more nuanced perspective-taking patterns that experts in various disciplines engage in and that teachers can draw into activities as students become more expert? Here we will contrast how a scientist and a historian might emphasize perspective taking. Both recognize that subjectivity enters their work, and both use techniques to approach objectivity. Scientists employ experimental designs, methods of statistical analyses, and so forth to encourage greater objectivity. While a lot of scientific research is model driven, scientists recognize that key insights often result from flexible thinking, from taking on a different perspective, and from shifting paradigms. Scientific knowledge advances by the purposeful discarding of hypothesis or theory. New theories are developed that enable us to further our understanding; these in turn are discarded when they no longer explain the current evidence. Observation—without imposing what one thinks ought to be so—is cru-

cial to recognizing where there are cracks in the explanatory usefulness of a theory.

Similarly, historians employ techniques that recognize issues of subjectivity. Techniques such as triangulation (viewing from three or more perspectives) recognize that we are all subjective viewers, yet we can come closer to objectivity by increasing the number of contributing subjective stances: what emerges is a more objective view of "what happened." Adopting a historian's lens also involves recognizing the state of knowledge at the particular time in history. Without this understanding of perspective, it is easy to fall into the fallacy of *presentism*, the belief that people were not as capable or as smart in the past. The benefit of 20/20 hindsight contributes to this belief; it is easy to second guess from the stance of looking back into the past.

As the examples illustrate, there are overarching similarities and subtle differences between the thinking patterns in the various disciplines. Each discipline has its own set of nuances for thinking techniques and patterns. These nuanced versions can build upon the more general techniques introduced in *Art Works for Schools* that give novices a good start in learning effective patterns of thinking.

There are also opportunities to transfer the techniques such that they benefit learning but don't necessarily fit within the lens of a discipline. For example, one teacher had her students create a conversation between the numerator and the denominator of a fraction in math. While this isn't something mathematicians are likely to do, it was a great way for students to think deeply about the relationship between numerators and denominators—a topic they often have confusions about.

What perspective-taking tools does this *Art Works for Schools* module introduce?

This module introduces four tools or thinking techniques to help your students learn the skills of perspective taking. *Viewscopes* is a looking technique that involves systematically varying one's physical focus and contrasting what one learns from each physical viewpoint. *Thought bubbles* is a drawing technique for imagining others' perspectives. *Projection* is a theater tool for entering different personas in order to explore their perspectives from within. *Interviewing* is a technique that theater artists use when coming to a deeper understanding of a character. The order in which they are presented is the suggested order; however, it is possible to vary it to some extent. Each tool is explained in depth in the pages that follow. We hope that your students have fun learning and using these perspective-taking tools!

Seeing through Different Eyes

Key Moves and Attitudes for Perspective-Taking

Key Moves

In what you see . . .

Try to see through different eyes.

Move to different positions to change your point of view.

In what you think . . .

Think about what you believe and try not to let it get in the way.

Look out for information that tells only one side of the story.

Check out the information you get, then decide if you want to believe it or not.

Key Attitudes

Keep your mind open to different ways of seeing and thinking.

Be curious and pay attention to what others are thinking.

Look out for other people's narrow viewpoints and don't make them your own.

Tools and Techniques: Lessons for Students

Viewscopes

Viewscopes refers to a "looking technique" that involves systematically varying one's physical focus and making comparisons among what is learned with each view. It can be used from multiple positions to look at different aspects of a single object or from one position to discover multiple viewpoints from that location. Through immediate and repeated comparison, viewscopes highlight how physical viewpoint affects what we see and what we think about what we see. By drawing or making notes on what they see as they see it, students have a history of their thought processes that they can reflect on when considering how their thinking changed with each new view.

Tips for Teaching Viewscopes

Encourage students to draw what they actually see, not what they think they should see. Looking is the most important part.

If students worry about the quality of their sketches, encourage them to think of the sketches as "thinking drawings" to help them explore an idea, not finished products to be looked at later.

Encourage students to notice sizes and scale, differences in lighting, different dimensions, and relationships between parts. They should increase their number of viewings when considering a complex object.

Depending on class size, you may need to do some planning to make sure that everyone can get a number of clear viewpoints on the object. Help them find interesting angles from which to look.

Arrange the timing so that students get to try out different viewscopes one right after another. This way, ideas from earlier positions are still fresh in their minds and they can compare them.

Help your students look for or become sensitive to opportunities to use viewscoping by pointing out instances when it can lend a particularly rich insight and by asking them to find such instances on their own.

Having extra Viewscope sheets available in the classroom can be a nice reminder to students to engage in viewscoping independently.

When transferring viewscoping to other topics, consider that viewscopes lend greater insight into some questions than others. These questions tend to involve objects or phenomena where the shape is different (and informative) from different angles or the comparison of different views reveals an important piece of information.

Lesson One

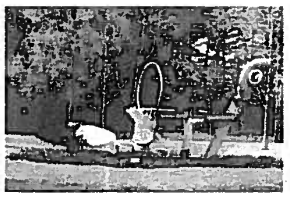
Learning Viewscopes through Thinking about Art

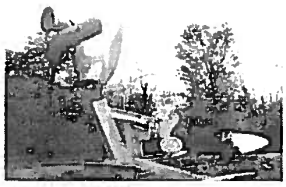
In this lesson, students learn how to use a looking technique called viewscopes to consider the physical contributions to our perspective and to come to a deeper understanding of a work of art.

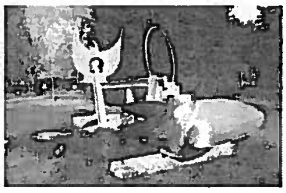
Suitable for early elementary through middle school/adaptable for all ages

A variation on this lesson that is appropriate for older students is called "Attitude Scoping." It can be found in the resources section of this module. It invites students to systematically explore different attitudinal perspectives and to contrast what they learned from each.

50 minutes







Understanding Goals for Students

- Physical aspects (the way things look or are shaped, their position, and so on) affect what we see and what we think about what we see.
- Looking from different physical viewpoints can increase what we notice.

Materials

- Slides (4): *Sunflowers for Vincent* by Mark di Suvero
- Slide projector and a place to project it
- Viewscopes sheets (see the resources section for this module)
- Pencils, markers, or drawing material

Preparation

- Read through the lesson plan.
- Set up a slide projector.
- Copy enough Viewscope sheets for the class.

If you have a particularly young or inexperienced group, you may want to do a "Get Ready" exercise with a concrete object. Invite students to walk around it and look at it from different sides as well as from below and above. Some objects you could use include a stapler, a chart paper stand, student desks, or cubbies.

Procedure

Step 1: Get Ready

Five to ten minutes

Ask:

- Can you remember a time when you were up really high (such as when you were on somebody's shoulders or looking down from the top of a tall building)?
- Can you think of a time when you were looking up at something else that was really tall (such as a tall building, a statue, a mountain, or a person)?

Invite some students to share their ideas.

Explain to the students that they are going to think about what it is like to see things from different viewpoints or places to look from.

Step 2: View the Artwork

Five to ten minutes

Show the first slide, revealing one side of a sculpture, and give the students about one minute of quiet looking time.

Pass out the Viewscope sheets.

Ask:

- What do you notice about this view of the sculpture? What stands out?

While students are working, encourage them not to worry about creating a beautiful drawing. They should focus on the *seeing and thinking* part instead. Encourage students to really "see" what is there.

The students should draw, or take notes, under view #1 on the Viewscope sheet, showing what they particularly noticed. They don't need to actually draw the sculpture. Rather, they should make a brief sketch of what stood out for them. Looking is the most important part. They should try to notice sizes and scale, differences in lighting, different dimensions, and relationships between parts.

Step 3: Deepen Understanding

15–20 minutes

The next steps involve looking at the same sculpture from new views or different positions. Show each one in turn. As you did the first slide, for each new slide give the students a whole minute of quiet looking time and then additional time to sketch what they notice about the view of the sculpture. After each, discuss their ideas before moving on to the next slide. Make sure the students understand that they are seeing the same sculpture but from different viewpoints.

For each slide ask:

- What do you notice? What stands out to you from this viewpoint?

Students should draw or make notes under a different quadrant on the Viewscope sheet for each new slide.

Step 4: Reflect and Connect

Ten minutes

After you have shown all the slides, have the students look back at the views they have drawn.

Ask:

- How did looking and comparing the different viewscopes change the way you saw the object?
- How did your thinking change with time?
- What are some of the new things you noticed?

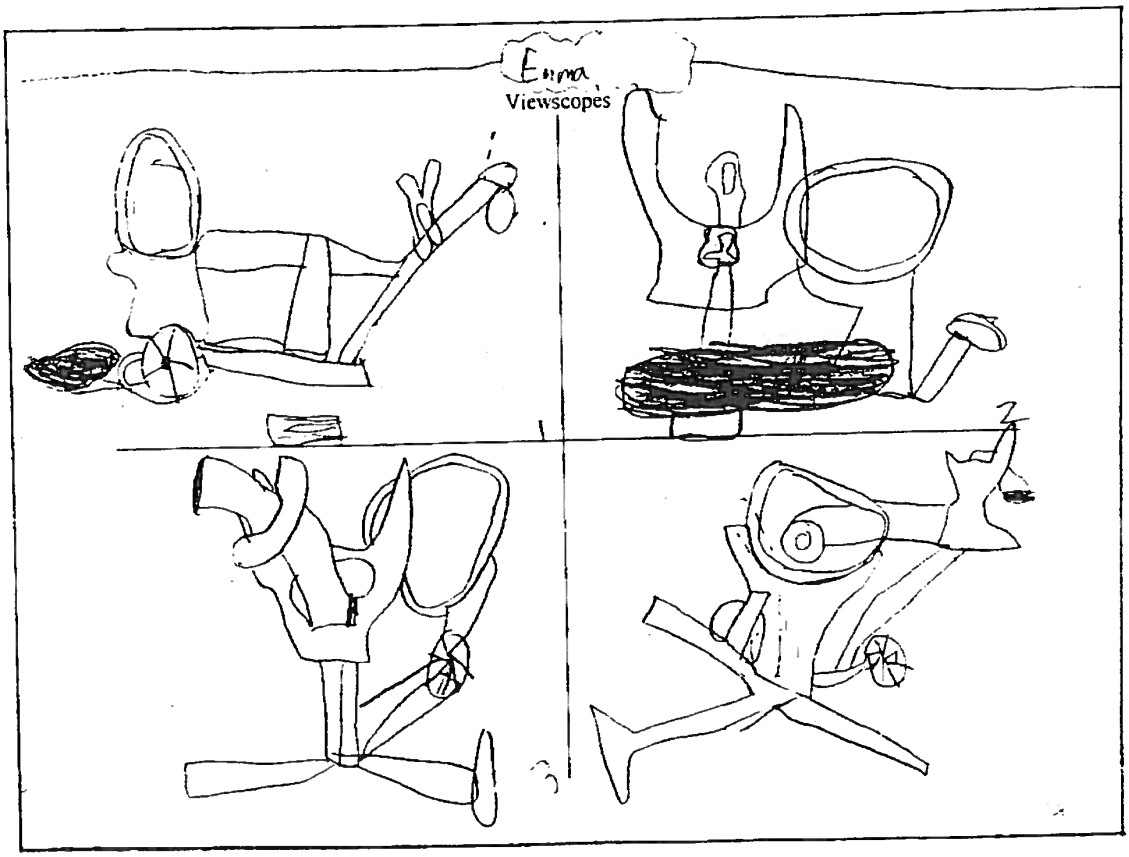
Show them the first slide again and revisit the Understanding Goals from the beginning of this lesson with the students.

Ask:

- What are some new things that you know about the sculpture that you didn't know when you saw the slide the first time?
- How did looking from different viewpoints change what you know?
- Do you feel different about it than you did when you made the first viewscope?

Picture of Practice

Student Work Sample: Viewscopes Drawing of *Sunflowers for Vincent*



Lesson 2

Transferring Viewscopes to Other Curriculum Topics

In this lesson, students use viewscopes to consider a variety of physical perspectives on an object or concept from a curriculum topic to encourage a deeper understanding of the topic.

Suitable for elementary and middle school /adaptable for all ages
45 minutes

Understanding Goals for Students

- Physical aspects (the way things look, are shaped, their position, and so on) affect what we see and what we think about what we see.
- Looking from different physical viewpoints can increase what we notice.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- Viewscope sheets
- Pencils or other drawing material
- Any materials that are relevant to the topic chosen for this lesson

Preparation

- Read through the lesson plan.
- Decide on a topic from the curriculum. Gather whatever materials are needed.
- Decide what your Understanding Goals are for the subject matter of this lesson. Word them as explicit statements of what you want your students to understand.
- Copy enough Viewscope sheets for the class.

Procedure

Step 1: Get Ready

Five minutes

Remind the students about the lesson they did looking at art using viewscopes. Ask them to close their eyes for a few moments and recall the lesson.

Viewscopes can be used to study different perspectives on scientific concepts (dynamic processes or laws) or on objects like fossils, a cross-section of a tree, a snowflake, or a shadow, for example. The example here is focused on a concept—interpreting a scientific law—because it is a little harder to conceptualize. Transferring viewscoping to objects of science is more straightforward.

Ask:

- What are some things that you learned in the lesson?
- What is some advice that you could give yourselves and others for doing a good job of thinking with viewscopes?

Step 2: Consider the Topic

Five to ten minutes

Remind the students of a question from a topic that they have been studying. The example here focuses on interpreting a scientific law.

Ask:

- Could using viewscopes help you to think about the question differently?

Careful observation is important to the nature of inquiry in science. Scientists attempt to be as objective as possible when they study objects or processes, and stepping outside one's initial physical or attitudinal viewpoint is important to the aim of increased objectivity. Great scientific discoveries have come about by realizing the importance of our frame of reference and how subjectivity can mask certain phenomena. For instance, understanding relativity or the Copernican Revolution involves explicit shifts in actual or visualized physical perspective.

For instance, transferring viewscopes to the interpretation of a scientific law might get the class thinking about the following kinds of questions:

- When you are moving with an object, such as a ball, that you dribble or throw into the air, does it just go up and down or does it move forward too? Another way to word the question is "Does a basketball move at the same velocity as the ball player who is running and dribbling it?"

These questions invite students to use viewscopes to consider what is going on and to deepen understanding of the physics, kinesthetics, and perspective taking involved. When learning to dribble a ball, many students try to toss the ball out in front of them to get it to move forward. Coaches often tell them to just dribble straight down, but many students don't understand how this works. The misunderstanding results from limited perspective taking and a non-Newtonian view of the physics involved.

Step 3: Deepen Understanding

30 minutes

Ask the students to think about different positions from which they can look. They should try to find interesting angles for viewpoints and increase the number when considering a complex object. Figure out how you can help students adopt each viewpoint.

For instance, focusing on the basketball question, students could draw what it looks like when they are watching a basketball dribbled: 1) from the side; 2) from someone coming toward them; 3) from someone moving away from them; 4) or if they were to dribble the ball and look directly down on it.

Take each physical viewpoint and draw it as a viewscope. Set up each view and then take time to draw.

Remind students that it is very important to draw exactly what they see and not what they think they ought to see.

Step 4: Reflect and Connect

Ten minutes

Have the class reflect and look back at the views they drew.

Ask:

- How has looking from different positions changed what you saw?
- What are some of the new things you noticed when you changed your view?
- How did looking and comparing the different viewscopes change the way that you saw the object?
- How did your thinking change with time?

Viewing from as many different perspectives as possible is key to how social scientists try to understand current and historical events. It is referred to as *triangulation*—the idea that we can approach greater objectivity by expanding the subjective lenses through which we look. For instance, viewing an event through the eyes of different cultures creates a multifacted, more objective perspective on the event.

Discuss how it is important to try out different viewscopes one right after another so that the ideas from earlier positions are still fresh and easily compared.

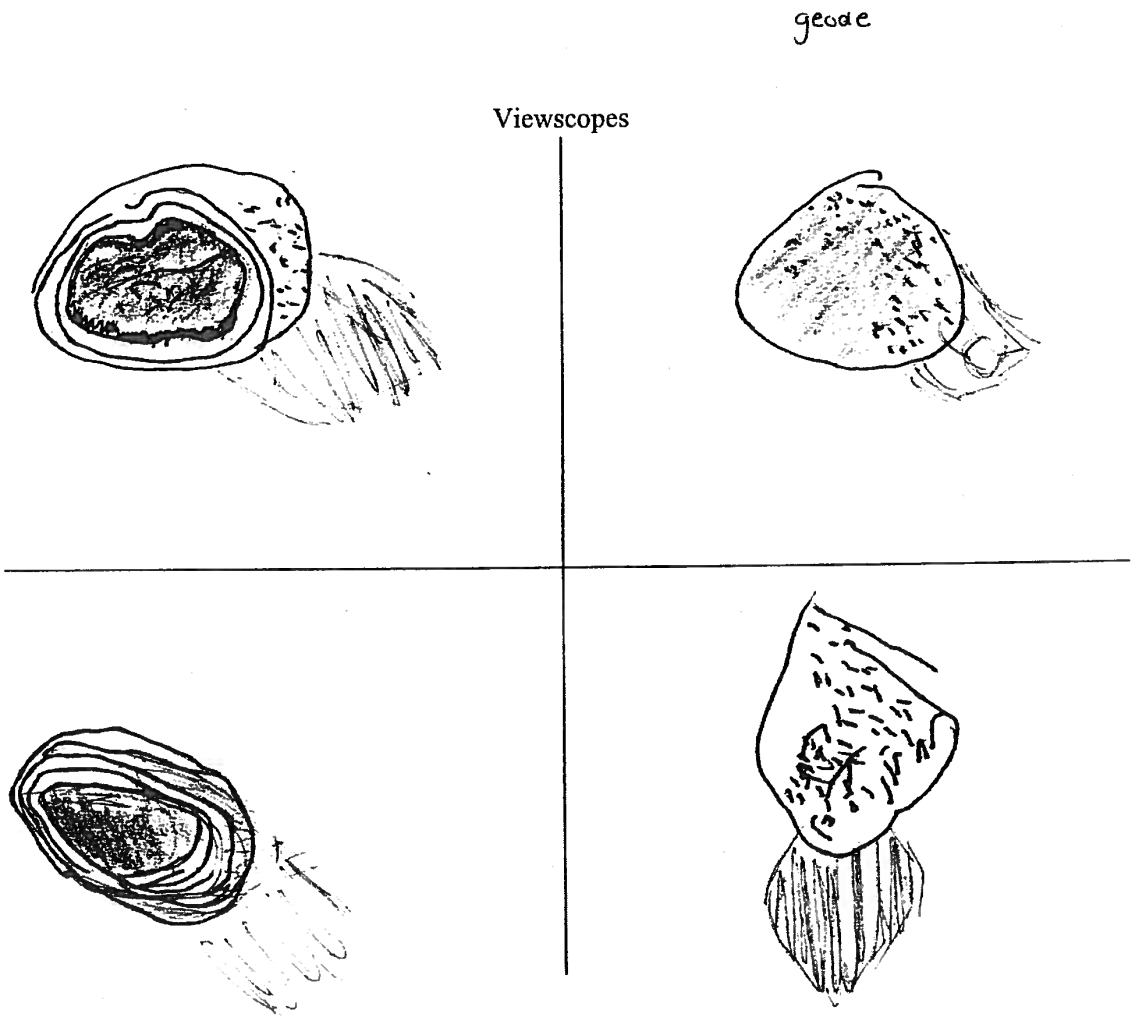
Revisit the Understanding Goals with the class—they are listed at the beginning of this lesson.

For instance, when discussing the different views in our basketball question, students may realize that when they dribble straight down and run, the ball looks like it is going straight down. However, when they are watching from the side, the ball appears to take an arc. The viewscopes lead to a puzzle to be resolved through physics. Students could investigate other similar problems, such as tossing a coin while walking forward, tossing a coin on a bus, etc. The ball or coin is moving at the same velocity as the person, so from the person's perspective, it is going straight down (or up) and indeed that is how they should dribble it. But from the side view, it appears to arc, because the viewer is standing still and the ball or coin is moving forward with the person dribbling or tossing it.

Picture of Practice

Student Work Sample: Viewscopes drawing of a geode

The viewscopes below are from a class in which fourth and fifth graders explored what a geode would look like from different views. The student chose to consider a geode using viewscoping because she recognized that the view one takes on a geode makes a big difference in how one sees the geode and understands what it is.



Touchstones for the Viewscopes Lessons

How to tell if things are going well:

Students are invested in looking at the work of art or curriculum topic. They try to really see what is there and stay anchored to it.

Students listen intently to the contributions of others and see things in new ways because of the insights of others.

In group discussions, students talk to each other about the different views that they see rather than funneling their comments through you, the teacher.

Students get excited about what they notice from different angles and seek out other interesting angles from which to look.

Students' comments cover a range of aspects included in each view. For instance, they notice size and scale, differences in lighting, different dimensions, and relationships between parts.

Students find creative comparisons to explain or draw their ideas when they don't have descriptive terms for them. (For example, they might compare a part of a sculpture to a dinosaur's head or a bird in flight.) However, they keep bringing their description back to the artwork or curriculum topic rather than taking off on a fantasy story based on their figurative comparisons.

Students compare and contrast what they learned from different viewscopes.

Students are not concerned with creating a beautiful drawing, instead focusing on the seeing and thinking that goes into each view.

Students begin to notice opportunities to use viewscoping in other subjects. They suggest using the technique when looking at other works of art or when learning other topics.

Thought Bubbles

Thought bubbles is a drawing technique for exploring different perspectives. It invites students to use visual means to consider other points of view. Students *think through their drawing.* When we consider someone else's perspective, we engage in both creative and critical thinking. We enlist our imagination to generate possibilities, and we filter those possibilities through a critique of what best fits the information available to us. This can be a lot to do in your head, especially as a learner who is just beginning to think deeply about other people's perspectives. Downloading ideas onto paper helps us to delve into another perspective more deeply than if we had to hold all of the ideas in our heads. Some students choose to include words as well as images, such that they complement one another.

Tips for Teaching Thought Bubbles

Encourage students to see thought bubbling as a process of thinking, not as a finished product. They should use the thought bubble to explore and add ideas as they come up. They should not try to have the whole idea before they start drawing. By crossing things out and revising them on the samples you create, you can encourage this view.

Young children may need an explanation of what thought bubbles are and what they represent. Research shows that three- and four-year-olds can understand them once they are explained.

Help students identify assumptions that they might be making by asking questions about what they have drawn or written and why. Encourage them to consider a broad range of possibilities and what additional information they need to understand the perspective well. Help them find ways to seek the information out.

If you choose to display the thought bubbles, consider giving students a chance to redraw or rewrite theirs after the thinking process has been played out. Otherwise students might eclipse their thinking to aim for a presentable product, thus defeating the purpose of the activity.

Learning Thought Bubbles through Thinking about Art

In this lesson, students learn how to use *thought bubbles* to explore attitudinal perspective and to come to a deeper understanding of a work of art.

Suitable for elementary/adaptable for all ages
45 minutes

Understanding Goals for Students

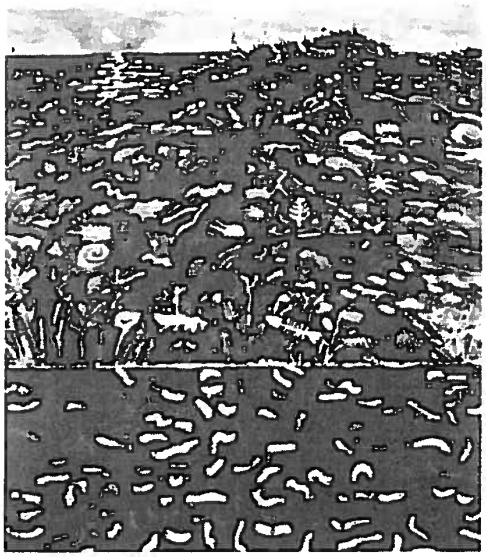
- Drawing can help you to think about other perspectives without having to hold all of the ideas in your head.
- You can imagine other perspectives by visualizing what someone might see, feel, or think.

Materials

- Slide: *Night Shift at the Compost Heap* by Lois Tarlow
- Slide projector and a place to project it
- Two or three copies of Thought Bubbles sheet for each student
- Colored pencils

Preparation

- Read through the lesson plan.
- Set up the slide projector.
- Make copies of the sample thought bubble in the resources section of this module.



Procedure

Step 1: Get Ready

Five minutes

Ask:

- Think back to the last lessons we did on perspective taking. What were some of the things you learned?

Review the tips for teaching perspective taking.

Explain:

- Looking at different possibilities, trying to find new information and varying perception by changing positions, size, and scale are all ways to help us step out of our own perspectives. Our own perspectives can limit or encourage insight.

Step 2: View the Artwork

Ten minutes

Show the slide *Night Shift at the Compost Heap* and give students one full minute of quiet looking time.

Ask:

- What do you see?

When students offer interpretations of what they think certain items are, ask them to support the interpretations with evidence from the artwork.

Step 3: Deepen Understanding

30 minutes

We are going to try to "become" an object or element in the artwork and will think about what it might be thinking. It could be an object such as a pile of bones, or it could be an element such as the wind.

Do your students know what the thought bubble is? Make sure they know that it shows the thoughts of the character, from whose head the bubble comes.

Choose something in the image for an example and post a thought bubble over its head. Show with a quick sketch how you can think about what the character is thinking by drawing your ideas. Explain that, as you draw, you are considering three questions:

1. **What can the thing *perceive* (see, hear, smell, feel, taste)?** Think about where it spends its time, whether it moves around or is stable, what is around it, what its size is in comparison to what is near it.

2. **What are some things that it might know about (or believe that it knows about)?** Think about what it has experienced or has information about. Consider how old it might be, where it is from or where it may have been, how long it will live.

3. **What are some things that it might *care about*?** Help students think about what it wants, fears, or thinks is important. Consider its mood, goals, and beliefs.

For example:

If the set of fishbones in the compost pile could see, hear, smell, etc., perhaps it would smell the ocean nearby. It probably can't see the ocean from where it is. Maybe it can hear the waves.

If the set of fishbones could remember, it might think about places where it used to swim and how it caught things to eat.

The set of fishbones might be sad to be in the compost heap, and it might think about swimming once again in the sea. Or perhaps it is happy to be where it is, because it will slowly become part of the earth and will always be near the beach.

Have students go off and draw one or two thought bubbles for an object in the artwork.

Explain:

- This is a "thinking drawing." Use the thought bubble to explore what the object or person might think about and add ideas as they come up. Don't try to have the whole idea before you start drawing. That's why you are using pencils; they allow you to change what you have if you think of a new idea.

Students should try to consider a broad range of possibilities for what the person or thing might be thinking. If time allows, quickly sketch two different ideas. This encourages flexibility in the students' thinking and helps them to see that more than one interpretation is always possible.

Even though the focus is on drawing, don't discourage students from including words if they choose. Some students will naturally incorporate written words into their drawings or might wish to make notes alongside their drawing.
A variation on this lesson is to have the students choose more than one persona and to put the thought bubbles "in conversation" with one another.

While students are working, circulate to help them think about the three questions above. Also help them try to recognize and step outside of assumptions that they might be making based upon who they are or upon stereotypes that they hold. Help them consider what additional information they need to understand the perspective of the person or thing and find ways to seek it out.

Step 4: Reflect and Connect

Five to ten minutes

When students have explored different possibilities, have them share some of their ideas. For younger groups, you could share by putting the thought bubbles up on a poster and letting children look at them during free time.

Ask:

- What new ideas do you have about the artwork that you didn't have before?
- Did you find that different characters might have had different attitudes?
- What are some reasons why? Why might different characters see things differently?

Revisit the Understanding Goals with the class—they are listed at the beginning of this lesson.

Lesson 4

Transferring Thought Bubbles to Other Curriculum Topics

In this lesson, students use thought bubbles to explore attitudinal perspective and come to a deeper understanding of a curriculum topic.

Suitable for elementary/adaptable for all ages
45 minutes

Understanding Goals for Students

- You can think about perspectives within curriculum topics through drawing.
- You can imagine other perspectives by visualizing what someone might see, feel, or think.
- Teacher: Add your own Understanding Goals related to the subject or topic.

Materials

- Depending upon the topic, your materials might include access to science phenomena (plants, insect tank, fish tank, etc.), historical artifacts, or objects from math (visual puzzles, and so on) that students may observe carefully
- Colored pencils
- Thought Bubbles sheet

Preparation

- Read through the lesson plan.
- Decide on some potential topics to focus on and assemble the necessary materials. (Feel free to use "Spiders," the topic used as an example in this lesson, or pick a topic from your curriculum.)
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want your students to understand.
- Copy enough Thought Bubbles sheets for the class.

Procedure

Step 1: Get Ready

Three minutes

Ask:

- How did you use thought bubbles when we looked at the artwork *Night Shift at the Compost Heap?*

Remind them of the basic points of the lesson.

Remind the students of how they "became" elements or objects in the artwork and explored what it might be thinking by drawing its thought bubble.

Step 2: Review the Topic

Ten minutes

Explain that the class will now be using thought bubbles to think about a topic from the curriculum. With the class, make a list of some of the things that you are studying in science, math, history, or language arts. For instance, science topics might include a caterpillar making a cocoon, a spider spinning a web, a thermometer set into a hot liquid, and so on. Choose one topic and review it with the students.

The example in this lesson focuses on science by using spiders.

Thinking through drawing can be an important way to advance scientific and mathematical ideas. According to physicist Mitchell Wilson, scientists need to be able to think graphically without limiting their imaginations to the verbal domain. Many famous scientists, such as Copernicus, Newton, and Galileo, also showed artistic proclivities, and many dabbled in the arts in their spare time.

(R.S. Root-Bernstein, *Discovering: Inventing and solving problems at the frontiers of scientific knowledge*, Cambridge, MA: Harvard University Press, 1989)

Step 3: Deepen Understanding

35 minutes

The students will now "become" the spider by drawing its thoughts. Post the thought bubble over the head of the spider, or the thing in your example, if there is a place to do so in your room. (Otherwise, you might draw a quick picture on the board or use a picture of the thing.) Remind them of the three questions to consider while drawing.

1. **What can the thing *perceive* (see, hear, smell, feel, taste)?** Think about where it spends its time, whether it moves or is stable, what is around it, and its size in comparison to things around it. What can it see from its physical perspective?

   If the spider is an orb weaver, it is probably in a high spot where it is likely to trap insects in its web. It can move around using its silk as a dragline and the wind to blow it. Think about what it can hear, taste, and smell from there.

Remind students that a thought bubble shows the thoughts of the character from whose head the bubble comes.

2. **What are some things that it might *know about* (or believe that it knows about)?** Help students think about what it has experienced or has information about. Consider how old it might be, where it is from or where it may have been, how long it will live.

   The spider will live for a whole season, so it would know about things that happen in one season. It might also know that birds are a danger and that some places offer more protection from predators and weather than others.

3. **What are some things that it might *care about?*** Help the students think about what it wants, fears, or thinks is important. Consider its mood, goals, and beliefs.

   The spider will care about getting food to eat. This means catching things in its web, so it will care about a good place to build its web. For an orb weaver, this means having things to attach to on all sides. It might feel excitement or anticipation when it feels a tug on its web because that signals that a delicious bug is caught. It might feel happy or satisfied after it has eaten a good meal. It might fear predators, including other spiders, since spiders eat spiders. It might care about a safe place for its egg sac so that its spiderlings live and aren't eaten by other spiders. It might feel melancholy as it gets cold out, since spiders in Massachusetts typically die in the winter.

Give each student a thought bubble and some colored pencils to draw with. Invite them either to think further about the perspective of the spider (or the thing in your example), or to choose a new thing or aspect of a thing.

Remind students that this is a "thinking drawing." The idea is to use the drawing to explore what the spider might think about. That's why you are having them use colored pencils. It will let them change what they have if they think of a new idea.

While students are working, circulate to help them think about the three questions above. Also help them try to recognize and step outside of assumptions that they might be making based upon who they are or upon stereotypes that they hold. Help them consider what additional information they need to understand the perspective of the person or thing and find ways to seek it out.

Step 4: Reflect and Connect

Ten minutes

Invite students to share their drawings and to explain why they decided to draw what they did.

Review and discuss the Understanding Goals that you have for the curriculum topic. As a class, discuss what new things you realized about the topic through exploring perspectives in this way.

Touchstones for the Thought Bubbles Lessons

How to tell if things are going well:

Students use the thought bubble as a process to think about and explore ideas as the ideas arise. They don't try to have the whole idea before they begin drawing.

Students are comfortable crossing things out and revising them as their thinking changes. They are not concerned with creating a beautiful drawing.

Students are invested in looking at the work of art or curriculum topic to give them clues as to what the person or thing might see, smell, feel, hear, or taste. They try to really "see" and "feel" what is there and stay anchored to the artwork or curriculum topic.

Students try to push past their own perspectives by considering a broad range of possibilities of what the person or thing might be thinking. They ask themselves what additional information they need to understand the perspective of the person or thing and seek it out.

Students listen intently to the contributions of others and see things in new ways because of these insights.

In group discussions, students talk to each other about the different attitudes that persons or objects in the artwork or curriculum topic might hold rather than funneling their comments through you as the teacher.

Students begin to notice opportunities to use thought bubbles in other subjects. They suggest using the technique when looking at other works of art or when learning other topics.

Projection

Projection is a theater technique used to enter different personas in order to explore their perspectives from within. It involves inhabiting or "becoming" the person or thing that you want to understand more deeply. By assuming its stance, mood, and position in relation to things around it, we are brought closer to what it might think and feel and are more able to explore its possible perspectives. Projection can lead to new insights for students who become the thing, as well as for those who watch the projection. Projection is one of the key techniques in this module and can be used in support of the other tools and techniques.

Tips for Teaching Projection

Depending on their age, students may be initially uncomfortable engaging in projection. It is important to acknowledge and respect this discomfort.

Encourage an environment where it is safe to take risks. This includes:

- Outlawing negative comments (constructive comments are welcome).
- Making a clear choice between asking all of the students to do a projection and asking for volunteers.
- Drawing out the positive qualities of each projection.
- Having students do the projection with no audience or a small group.
- Engaging in projection yourself.

Encourage students to assume the stance, mood, and attitude of the thing that they are projecting into and just to hold that for awhile before launching into the projection.

Encourage students to see the projection as a means of exploring what the person or thing might be thinking. Projection is more of an improvisational exploration than a scripted performance. The focus is on the *process* of thinking, not the product.

Encourage students not to worry about being clever or about the audience. The performance isn't for the audience, even though they may learn something by watching it. The performance is to help the students build their own understanding, not to entertain them.

While the idea of the projection is to ***think*** through it, some students won't be comfortable doing that initially. It is fine to offer some time to get their minds prepared, as long as you stress that the focus is not on the performance but on thinking as you project.

If students get silly, it is time to stop and refocus. Discuss how it is not uncommon to feel and resort to acting silly when asked to do something that involves taking a risk, but remind students that you know that they will get beyond this. Talk about the feelings and what will help them maintain a serious focus. That said, some projections might still be funny and that's fine.

Lesson 5

Learning Projection through Thinking about Art

In this lesson, students learn how to use projection to "become" a person or object in an artwork. This theater technique can help them come to a deeper understanding of the work of art.

Suitable for upper elementary through high school
45 minutes

Understanding Goals for Students

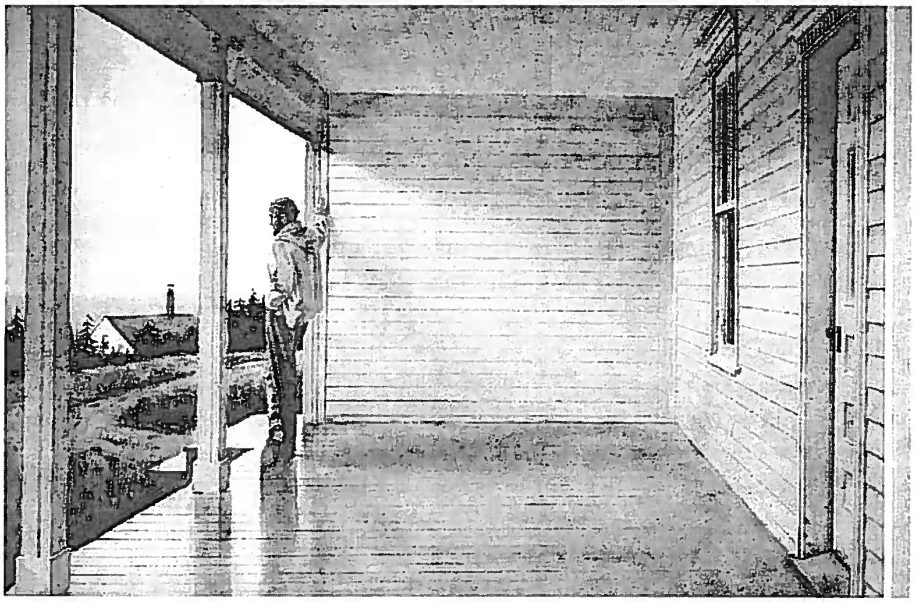
- You can learn a lot about the perspective of a person or object by trying to "become" him, her, or it.
- Taking on the stance, mood, and positioning of the person or object can help you feel what he, she, or it might feel.

Materials

- Slide: *Island Man, Monhegan Island* by Martin Ahearn
- Slide projector and a place to project it
- Blackboard or chart paper

Preparation

- Read through the lesson plan.
- Watch the video of URT Performer Debra Wise doing a projection.
- Set up the slide projector.



Procedure

Step 1: Get Ready

Five minutes

Ask:

- Have you ever tried to imagine that you were someone else? For example, when you see a group of elderly women on the bus, have you ever tried to imagine what it would be like to be one of them? Or have you ever imagined that you were a sports hero?

Review the "Key Moves and Attitudes for Perspective-Taking" with students.

After gathering some responses from students, explain that the technique we are learning today is about just that—trying to step into the shoes of someone else.

Step 2: View the Artwork

15 minutes

Show the slide *Island Man, Monhegan Island* by Martin Ahearn. Give students a few minutes of quiet looking time.

Ask:

Encourage students to justify their responses with evidence they see in the artwork. Help them see their responses as part of their own viewpoint by using words like "From your perspective . . ." or "So you interpret that to be . . ." Refer to "Looking at Art" in the introduction for more guiding questions.

- What do you see?
- What could you do to change your perspective?
- How would this work feel different if the artist showed a different physical perspective?
- Where was the artist when he painted this? What view did he "let" us see?
- What thoughts do you have about why he created the view that he did?
- How does the man's positioning affect what he might see?

Next, we are going to *project* ourselves into the man on the porch.

Step 3: Deepen Understanding

30 minutes

Explain:

- Projection is a technique that performers use to try to understand different characters' thoughts and feelings.

Today, we are going to "become" the man and imagine not only what he might see but how he feels, what he is thinking, what might be going on in his mind.

Model:

- Demonstrate a projection for the students. Tell them that you are going to act it out a little to explore what the man might be thinking:
- Assume the stance of the man.
- Show that it is fine not to talk all the while. Pause and reflect periodically.
- Don't worry about being clever.
- Say "Curtain down" when you are finished.

Explain:

- Projection is different from the kind of acting in which you have a script. The idea behind projection is that you think about what the man might be thinking *while* you are acting it out. It is fine to pause and not say anything for a moment. It can take a little getting used to—thinking in front of others and not practicing anything first—but it's important to remember that the purpose of projection is to explore ideas, not just to act for others. There are no right or wrong answers and you can say as little or as much as you want.

Tell the students it is their turn.

Beforehand, set some ground rules for the class: they need to be a thoughtful and attentive audience and all comments need to be constructive. Ask students to offer some of the tips for projection.

Ask:

- What could be on a list of possible perspectives to take on this artwork, in addition to the man on the porch? For example, you could become the porch, the windowsill, the sun, the new paint, and so on.

Ask students to try some of these projections, either in front of the class or in small groups. Encourage them to get their body in the position of the person or thing to help them adopt its perspective. Remind them that the focus is on the *process* of thinking, not the product. Encourage them not to worry about the audience. It is a performance for building understanding, not for entertainment.

As students run out of ideas, ask questions to help them explore the thinking of the character: "What does it/he/she care about? What does it/he/she know about? What are some feelings that it/he/she may have?" If you have a shy class, you might want to have them share in small groups.

Step 4: Reflect and Connect

Five minutes

Reflect upon how the projections change the way that students see the artwork.

Ask:

- How did taking different perspectives affect your feelings and thoughts about the artwork?
- How did the various attitudes influence what you saw? What do you see now that you didn't see before?
- Were there any perspectives that you found surprising? How and why?
- What are some places in your own life where you could use projection to help you understand a situation differently? Consider other times when you might use projection (or at least think about a projection in your mind).

Review the Understanding Goals together—they are listed at the beginning of this lesson.

Lesson 6

Transferring Projection to Other Curriculum Topics

In this lesson, students use projection to "become" a person or thing from a curriculum topic in order to gain a deeper understanding of it.

Suitable for upper elementary through high school
45 minutes

Understanding Goals for Students

- You can learn a lot about the perspective of a person or object by trying to "become" him, her, or it.
- Taking on the stance, mood, and positioning of the person or object can help you to feel what he, she, or it might feel.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- Materials related to the topic that is chosen for this lesson

Preparation

- Read through the lesson plan.
- Decide on a topic that you would like the class to explore through projection. Choose a persona from the topic to focus on. It could be an object (a historical artifact, a scientific instrument), issue (gender equality, global warming, sensationalism in the news), procedure or style (addition or subtraction, the scientific method, persuasive writing), character (a famous scientist or mathematician, a famous leader), or process (evaporation, translation).
- The example in this lesson uses an issue from history. You can use this topic if you wish or use your own topic.
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want students to understand.

Procedure

Step 1: Get Ready

Three minutes

Ask:

- What do you recall about the projections that you did while looking at the artwork *Island Man, Monhegan Island?* Remind yourselves of some of the things you learned about how to use projection well.

Review the "Key Moves and Attitudes for Perspective-Taking."

Some teachers have used the Viewpointer and/or Retro-Perspectoscope activity sheets from the resources section of this module to help students get ready. This can be a good way to do that; however, it is important that the process complements but does not eclipse the thinking done through projection.

Step 2: Review the Topic

Ten minutes

Review a little bit about the topic. The example here focuses on a topic from history. If the broad topic is Colonial America, focus on a narrower topic within it, such as what life was like then for women or children or men. Then decide on a specific event or issue to evaluate. It could be a historical event that we all know about, such as the Boston Tea Party, or an issue such as women's lack of the right to vote.

Step 3: Deepen Understanding

20 minutes

Generate a list of characters and things that may have been involved in the topic. Take a few moments to review each item on the list. Consider briefly what the character or thing knew about, cared about, or may have hoped for in relation to the event. (This is just to warm the students up. Most of this consideration will take place through the projection.)

When historians attempt to imagine the thinking of someone from the past, they aim to adopt the mindset that people held at that time. They are careful not to interpret historical information through the knowledge or attitudes of the present. They evaluate past decisions on the basis of what was known then, not on 20/20 hindsight.

Have students individually project themselves into one of the characters or things on the list. They should get out of their seats so that they assume the physical stance needed for the projection. They could do the projection for the whole class, a small group, or by themselves.

For instance, a student might choose a particular female suffragist (who) in the summer of 1910 (when) who has chained herself to the White House gates (what, where) and addresses the imaginary policemen (action) who have come to arrest her.

As students run out of ideas, ask questions to help them explore the thinking of the character: "What does it/he/she care about? What does it/he/she know about? What are some feelings that it/he/she may have?"

Finally, if there is time, plan and carry out an improvisation with the students. Base the improvisation on a discussion between characters with differing opinions about an issue or event from that time period. The students should be clear on the who, what, where, when, and action of the improvisation before they begin, and the improvisation should have a clear ending in the sense that a decision has been reached. Structure the improvisation so that it is in a form that would be likely for the time period.

For example, improvise a quilting bee to discuss women's lack of the right to vote or improvise whether to carry out a certain action in support of women's right to vote.

Act out the improvisation. Start the improvisation by saying "Curtain up." If students get stuck, offer some comments to stir up discussion. Many of these improvisations will focus on difference of opinion and how it stems from the characters' differing perspectives. End the improvisation by saying "Curtain down."

Step 4: Reflect and Connect

Ten minutes

Reflect on the entire activity, including the improvisation.

Ask:

- What new things did you learn about the topic from this activity?
- Did any new insights strike you? Did you see anything in a new way?

Review the Understanding Goals together—they are listed at the beginning of this lesson.

Picture of Practice: Transferring Projection to a History Topic

Ms. Saltonstall's, Mr. Costello's, and Ms. Ritondo's fourth grade classes at the Mason Rice School in Newton, Massachusetts, used projection to help them explore social studies concepts. The first lesson aimed to help students better understand the differences between Cottage Industry and Assembly Line Industry and to appreciate that an object has a history. Students projected themselves into a cloth. They warmed up by sitting in a circle with a white sheet in the middle of it. One student, Olivia, entered the circle, offered one perspective on what the cloth could be—a picnic blanket—and began acting out the idea. Emma quickly got the idea and joined Olivia's scene. As soon as the scene was clearly established and the class had guessed what was going on, Olivia exited, and Emma started a new scene by projecting a different reality onto the cloth. By the end of a quick round of all class members, the cloth had accumulated a magical quality, having been transformed into many things (handkerchief, sail, ghost, trampoline, and so on).

Students discussed physical and attitudinal perspective, what it felt like to project themselves into a scene with the cloth, and how the cloth had stories to tell. Then they focused on their curriculum by looking at photos of nineteenth-century textile workers. They brainstormed through projection. "Project yourself into the spinner in this picture. What do you see? Hear? Smell? Taste? Care about? Now project yourself into the thread." Students spoke only in the first person. Next they reviewed the steps involved in textile manufacture. To deepen their understanding of the process, they projected themselves into the cloth, speaking from the first person, rearranging and using the cloth and their bodies to move step-by-step through the cottage industry and the assembly line. As soon as one student established a step, another joined and then took over the lead to the next step. Students used a list of steps on the board for reference, and were prompted to be as descriptive as possible. ("I feel the warmth of the sun through the window, as I lay on the rough wooden table. Rough hands pick me up gently." "I am passed from hand to hand, sometimes rough, sometimes smooth, always moving, stretching, winding.") The final step was to put two pieces of cloth—each made in different ways—together in a drawer, and the students improvised a conversation between them about how they understood the world.

A later lesson explored the immigrant experience. Students focused on immigrant journals they had been keeping, each from a different immigrant's point of view. They chose one simple moment from their journals—a moment during which their character felt an internal conflict that invited a clear action. The students came up with many. Caitlyn suggested deciding what to pack. Joshua suggested trying to explain themselves at Ellis Island or looking for a relative at the dock. They divided into small groups, improvised brief monologues for each other, and offered critiques. Teachers encouraged constructive criticism by having students focus on useful criteria: Is the monologue historically accurate? Knowing what we do about the history, has the actor considered all the possible details? For homework, students wrote and rehearsed their monologues. Upon reflection, it was clear that projecting themselves completely—thought, body, voice, and emotions—into one brief, pivotal moment opened new paths to empathy and to a more complex understanding of the history.

Touchstones for the Projection Lessons

How to tell if things are going well:

Students are invested in looking at the work of art or curriculum topic to give them clues as to what the person or thing might see, smell, feel, hear, or taste. They try to really "see" and "feel" what is there and stay anchored to the artwork or curriculum topic.

Students feel comfortable starting and stopping as in an improvisation rather than a scripted performance.

Students are less concerned about being clever or about an audience than they are about what they and others can learn from taking risks and trying new things in the projection.

Students make an attentive audience and enjoy learning from the projections of others as well as their own.

The environment is safe for taking risks. Students are constructive in their comments and refrain from making negative comments. They ask questions about the various choices that the projector made, in the form of "Can you say more about why you chose to . . . ?" rather than "Why did you do . . . ?"

Students are comfortable assuming the stance, mood, and attitude of the thing that they are projecting into and holding that for awhile before launching into the projection.

Students take the projection seriously and, if someone does get silly, they stop and refocus.

Students begin to notice opportunities to use projection in other subjects. They get excited about exploring other works of art or curriculum topics through the use of projection.

Interviewing

Interviewing is a technique that theater artists use to come to a deeper understanding of a character. The actor projects into the character and is interviewed by another person to help the actor begin to think through the mind of the character and to explore the character's perspective. The interviewer and the interviewee typically need to do some thinking or research first—the interviewer in order to create focused and probing questions, and the interviewee in order to respond within the context in which the character's perspective is placed. The resulting interaction leads to new insights on behalf of the interviewer, interviewee, and those watching the process. Stepping out of character afterwards and reflecting on the process and how one's understanding has changed make the insights more salient. It can also deepen the understandings reached if the characters then resume the interviewing with the insights gained in mind.

Tips for Teaching Interviewing

Students may need help developing questions that delve deeply. You can help them by asking them what makes them curious about the interviewee.

Help students keep their responses anchored to the artwork or curriculum topic. They should be prepared to present evidence and reasons for why certain choices were made about the character's opinions, beliefs, and relation of fact.

Some interviewers may try to stick rigidly to their list of questions developed beforehand and may not ask follow-up questions. This may be partly a matter of comfort. When the interviewee says something that invites further exploration, take a time out and ask the rest of the class what kinds of questions might be asked at this point. Invite the interviewer to choose one of them to ask.

Encourage students to feel comfortable with changing the way that they think about the character based upon questions that the interviewer asks. The process of thinking is what is important, not having one rigid idea of what is "right."

Students may come up with new questions through the process of the interview. Encourage them to seek out information about the character to shape or reshape their answers or questions. You may need to restructure the lesson to create opportunities for students to research certain points.

Interviewees may get stuck at various points. Encourage them to take time for thinking and to consider what the character might say. Give them processing time before asking for input from the rest of the group.

Consider using interviews as source materials for the development of a play.

Lesson 7

Learning Interviewing through Thinking about Art

In this lesson, students learn how to use interviewing as a means of developing and asking good questions to help them come to a deeper understanding of a work of art.

Suitable for upper elementary through high school
45 minutes

Understanding Goals for Students

- Interviewing someone helps you to think carefully about the best questions to help you to understand the other person's perspective.
- Being interviewed is a good way to get you to think carefully about the perspective you hold—whether it is your own or one you are projecting into.

Materials

- Slide: *Man with Amulets* by David Aronson
- Slide projector and a place to project it
- Blackboard or chart paper
- Markers

Preparation

- Read through the lesson plan.
- Set up the slide projector.

Procedure

Step 1: Get Ready

Five minutes

Ask:

- Think about interviews that you have seen on television or that you have done. What is the purpose of the interview? What are the goals of the interviewer?

Explain to the students that today they are going to learn a technique called *interviewing* to help them come to a deeper understanding of a work of art. Interviewing is used by theater artists when they are exploring and getting to know different characters.

Step 2: View the Artwork

Five minutes

Show the slide *Man with Amulets* by David Aronson and give students a few minutes of quiet looking time.

Ask:

- What do you see?

Encourage students to justify their responses with evidence that they see in the artwork. Help them see their responses as part of their own viewpoint by using words like "From your perspective . . ." or "So you interpret that to be . . ." Refer to "Looking at Art" in the introduction for more guiding questions.

Step 3: Deepen Understanding

30 minutes

Choose a person or object from the artwork to interview. Ask the students to generate a list of questions that they would like to ask the character. Track their questions on the board.

After generating the list, step back and examine the questions as a group. Is there any background information that you need in order to conduct a good interview? If so, divide the class into groups and have them research the information. You can have them do it immediately and then resume the lesson, or stop and come back to the lesson later.

Stage the interview.

To help them ask questions, you can pass out the Viewpointer activity sheet from the resources section of this module and invite them to use questions from it. (What does the character perceive? Know about? Care about?)

Have someone in the class play the role of the object or person to be interviewed and have someone else play the role of the interviewer. The interviewer should work from the list of questions that the class generated and can add questions based on the interviewee's answers as the interview goes along.

Encourage the interviewer to:

1. Look for things that are odd or out of the ordinary to ask the interviewee about.
2. Seek out information about the character that will shape the interviewer's questions.
3. Ask follow-up questions based upon what the interviewee says.

You may need to model some impromptu questions for the class. Stress the importance of not following the questions on the board rigidly, which would

lead to a stilted interview. At the same time, it's important to prepare in advance and be sure to ask the questions that you have all decided are important.

Encourage the interviewee to:

1. Try to become the character. Consider what he or she would think about, care about, and hope for.
2. Not be afraid to change what he or she thinks about the character based upon questions that the interviewer asks.
3. Be sure to look back at the artwork and to ground his or her answers in evidence from the work of art.

Let the interview go on for ten minutes or so. Say "Curtain up" to begin. If the interviewee or interviewer gets stuck, you can offer input from the audience. As students share possible answers, they should also justify with evidence from the work of art how the response fits with what they believe is the perspective of the character. Say "Curtain down" to end the interview.

Step 4: Reflect and Connect

Five minutes

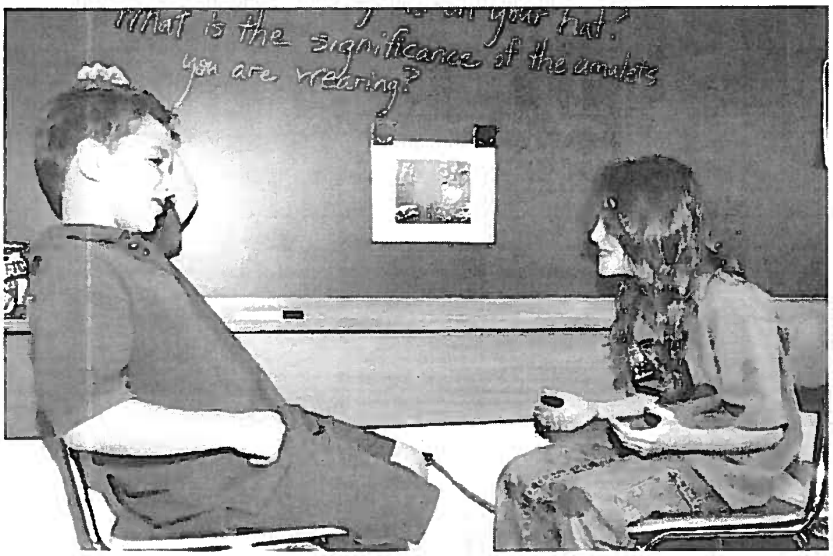
Afterwards, reflect on what the process was like.

Ask:

- How did it feel to be the interviewer? The interviewee?
- When was it easy? When did it get hard?
- When would he or she have liked more information or more research? (These are good points to note and then research, especially if you plan to resume the interview.)
- How did the interview change the students' perceptions of the perspective of the object/person and of the artwork as a whole?
- What are some other places where they could imagine using interviewing to come to a deeper understanding of someone's perspective?

Review the Understanding Goals together—they are listed at the beginning of this lesson.

Picture of Practice: Learning Interviewing through Thinking about Art



One student interviewing another as the "Man with Amulets."

Excerpts from two interviews conducted between two different sets of fifth graders in the same class.

Interviewer:	What are you doing?
Man:	Time traveling from a distant land.
Interviewer:	What do you see?
Man:	I'm not really seeing. More thinking.
Interviewer:	What are you thinking?
Man:	About the past.
Interviewer:	Why are you sad?
Man:	I'm not sad, I'm thinking.
Interviewer:	Why do you look sad when you are thinking?

Interviewer:	Where are you?
Man:	In a school.
Interviewer:	What are you thinking?
Man:	About the people I'm teaching. I'm teaching them Hebrew.
Interviewer:	Why do you wear your beard like that?
Man:	Because my grandmother wanted me to. That's the way her husband wore it.

Lesson 8

Transferring Interviewing to Other Curriculum Topics

In this lesson, students learn how to use interviewing as a means of developing and asking good questions to encourage a deeper understanding of a topic in the curriculum.

Suitable for upper elementary through high school
45 minutes

Understanding Goals for Students

- Interviewing someone gets you to think carefully about the best questions to help you understand the other person's perspective.
- Being interviewed is a good way to get you to think carefully about the perspective you hold—whether it is your own or you are projecting into another perspective.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- Materials for the curriculum topic you choose
- Viewpointer activity sheets (optional)

Preparation

- Read through the lesson plan.
- Choose a topic from your curriculum and assemble the materials needed.
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want students to understand.

Procedure

Step 1: Get Ready

Five minutes

Remind the students about the lesson they did using interviewing to consider a work of art.

Ask:

- What were some factors that helped the interview to go well? What were some factors that made it go less well?

Some teachers have used the Viewpointer or Retro-Perspectoscope activity sheets from the resources section of this module to help students get ready. This can be a good way to do that; however, it is important that the process complements but does not eclipse the thinking done through interviewing.

Explain:

- In this lesson, we'll use the technique of interviewing to gain insight into a topic in the curriculum.

Step 2: Consider the Topic

Five minutes

Review or introduce the topic to be considered. It could be an interview with a historical character, a mathematical operation or symbol, a character from a novel, or a process or entity from science, such as osmosis or a virus. You may wish to choose a topic that has many possible interviewees (such as people who played various roles in a shuttle launch, or a red blood cell, white blood cell, T-cell, and macrophage on the topic of an infection) so that students can choose a variety of different perspectives.

Step 3: Deepen Understanding

30 minutes

Pair students as interviewer and interviewee. If the topic has more than one possible character, ask them to choose a character to be interviewed. Have students prepare for the interview by researching their character and having the interviewer generate a list of questions. (It is fine to have the interviewee collaborate on generating the questions.) Encourage them to make sure that their questions contain some diversity and cover the different categories on the Viewpointer activity sheet: What does the character perceive? Know about? Care about?

For example, if the interviewee is a white blood cell, the interviewer might ask: "How do you figure out where the bacteria is? What do you see when you get to the infection site? How do you know what to do when you get there? Why are you willing to give up your 'life' to fight the infection? How do you view the red blood cells?"

Stage the interviews. This can be done as individual partners without anyone watching; in small groups of pairs, taking turns so others get to watch; or, depending upon the time available and the comfort level of the students, as a whole class activity so everyone gets to see each interview.

As in the lesson focused on art, encourage students to work from their list *and* include impromptu questions. If the interview is in front of a group and the

interviewee or interviewer gets stuck, use input from the audience. Ask students to be sure that they can justify their responses from their knowledge of the topic.

Encourage the interviewer to:

1. Look for things that are odd or out of the ordinary to ask the interviewee about.
2. Seek out information about the character that will shape her or his answers or other questions.
3. Ask follow-up questions based upon what the interviewee says.

Encourage the interviewee to:

1. Try to become the character. Consider what he or she would think about, care about, and hope for.
2. Not be afraid to change what he or she thinks about the character based upon the questions that the interviewer asks.
3. Be prepared to present evidence and reasons for why certain choices were made about the character's opinions, beliefs, and relation of fact. He or she may have to seek out information about the character to help shape his or her answers.

Let the interview go on for ten minutes or so. Say "Curtain up" to begin. If the interviewee or interviewer gets stuck, you can offer input from the audience. As students share possible answers, they should also justify how the response fits with what they believe is the perspective of the character. Say "Curtain down" to end the interview.

Step 4: Reflect and Connect

Five minutes

Afterwards, reflect on the process.

Ask:

- How did it feel to be the interviewer? The interviewee?
- When was it easy? When did it get hard?
- Note at what points he or she would have liked more information and then encourage the students to do more research on these points. *(Interviews can serve as a good self-assessment task, because they help to reveal what students know and don't know.)*

Review the Understanding Goals together—they are listed at the beginning of this lesson.

Touchstones for the Interviewing Lessons

How to tell if things are going well:

When being interviewed, students try to really become the character. They consider carefully what he or she would think about, care about, and hope for, and they try to be aware of when their own values and biases might be dictating their responses.

Students seek out information about the character to shape their answers. Students are invested in looking at the work of art or curriculum topic to give them clues.

Students are able to present evidence and reasons for why certain choices were made about the character's opinions, beliefs, and relation of fact.

Students are comfortable changing their thinking about the character based upon questions that the interviewer asks.

Students who are interviewing listen carefully and thoughtfully to the interviewee's responses and adjust their questions to what is being said.

Students use interviewing as a means of exploring what the person or thing might be feeling and thinking and feel comfortable improvising rather than performing a script.

Students are less concerned about being clever or about an audience than they are about what they and others can learn about the character from the interview.

Students make an attentive audience and enjoy learning from watching others interview and be interviewed as well as participating in their own interviews.

The environment is safe for taking risks. Students are constructive in their comments and refrain from making negative comments.

Students begin to notice opportunities to use interviewing in other subjects. They get excited about exploring other works of art or curriculum topics through the use of interviewing.

Resource Materials
for the Power of Perspective-Taking Module

Frequently Asked Questions about Perspective-Taking

"When writing about two different perspectives, the students always seem to turn the discussion into an argument. What's going on here?"

There is a strong tendency for students to develop conflicting opinions in their explorations of relationships between perspectives.

> Dialogue written by two fourth graders in response to Monet's *Impression, Fog*
>
> **Sun:** People have always told me of my beauty but I've never seen it myself. Why do you twist my image in my reflection?
> **Water:** Only because you are so conceited and vain. I'm quite glad of the fog, it will muffle you for a bit and stop me from being burned.
> **Sun:** Foolish water, you don't understand my importance. If it weren't for me, no one could even see.

Why? Probably because the sharpest contrast between two perspectives is often drawn out in the form of an argument. In an argument, students are exploring the perspectives and the relationship between them by focusing on that which makes each perspective unique. In seeking uniqueness, students tend to amplify differences, and this encourages dialogue that results in tension or conflict between characters. While focusing on conflict may be a natural place to begin when learning about different perspectives, students may need help recognizing that differences in perspectives need not always be characterized by conflict.

What can you do to help students push beyond this argumentative form of perspective dialogue? Offer students models in which the two unique perspectives are not polar opposites of each other. Encourage them to reflect upon the dialogues that they create to see that they do not necessarily play out as a conflict. Present instances where the dialogue between two different perspectives led to increased understanding and the resolution of conflict.

"Are young students developmentally able to engage in perspective taking?"

Recent research shows that young children are able to engage in perspective taking to a greater extent than previously believed.[1] The examples from kindergarten, first grade, and second grade classrooms in the "Pictures of Practice" section illustrate this. From as early as three years of age, children begin to reveal some knowledge about how other people's minds work. Children as young as three and four years old can learn that thought bubbles show what someone is thinking.

[1] J. Astington-Wilde, *The child's discovery of the mind: The developing child,* Cambridge: Harvard University Press, 1993

This does not mean that primary students can engage in perspective taking to the same extent as older students. They have limited ability to hold different pieces of information in mind at once in order to consider relationships between the pieces. They also have limited information about the world. For example, kindergartners who adopted the perspective of the cat in Marc Chagall's *Paris Through My Window* depicted the cat thinking about very catlike things, such as mousing, sleeping, and eating food. Second graders had more information about the world and particular elements in the painting. They were also better able to hold both criteria (what a cat might think about and particularly what a cat in this painting might think about) in mind at once. Second graders were more likely to show the cat thinking about elements of the painting, such as the Eiffel Tower or the upside-down train in the background.

"How can I keep my students from straying far from the artwork in generating ideas about possible perspectives?"

Teachers find that sometimes students generate ideas for possible perspectives that, while creative, stray so far afield that they are no longer connected to the artwork. For example, sometimes students introduce the perspectives of aliens, rockets, and monsters where there is little evidence for such.

> Dialogue written by two fifth graders in response to Monet's *Impression, Fog*
>
> **Boat:** Let's clear out of the fog together.
> **Sun:** All right! Good idea! Um, just how do we do that?
> **Boat:** We'll go back the way we came, over near those stores. Hey! I can't see them! We'll be lost forever.
> **Sun:** No, no, I'll use my light like a flashlight. I can go higher than the fog. Can you see the stores now?
> **Boat:** Yes, but I've sprung a leak! Help! The water is pulling me under! I'm going to DIE!

Why? Well, when we ask students to imagine a perspective, we're asking them to construct a different way of seeing the world from whatever experience and knowledge they have available. Any activity that invites a creative response opens the door for students to share their worlds and their minds. The thoughts of a five-year-old mind, a ten-year-old mind, a sixteen-year-old mind, and an adult mind are different. Limited knowledge and ability to consider the different factors that influence possible perspectives pertaining to the artwork, as well as enthusiasm for unbridled imagination, can contribute to a tendency to stray from the artwork.

For the very youngest children, a limited knowledge of what is in the artwork, as well as a limited ability to hold multiple possibilities in mind, may impact how deeply they can explore the artwork (as in the example above). Teachers felt that older students might be interpreting the perspective—taking activities as creative writing opportunities more than opportunities to explore the artwork—and that this might contribute to some of the imaginative yet unanchored directions of their responses.

What can you do to help students remain anchored in exploring the artwork while engaging their creativity in perspective-taking activities? Most importantly, keep students connected to their own direct observations. For example, teachers find that continually asking students "What do you see in the artwork that makes you think that?" helps to anchor them to exploring the work of art. Also, feel free to discuss the issue directly with students. For instance, some teachers have found it helpful to discuss with students the difference between a piece of writing (drawing, improv, etc.) that springs entirely out of one's mind and one that is intended to be an exploration of a work of art.

"How can I engage my students in perspective-taking without words?"

As Debra Wise (URT Co-Director) said about taking the perspective of the light in the painting *Island Man, Monhegan Island* by Martin Ahearn: "The light is profoundly quiet and how can you speak the light? There's no need to perform at all. No need to be clever or say anything at all." Some perspectives are best expressed and explored without words. Yet those who feel less accustomed to improvisation tend to use words in their perspective-taking explorations. This raises the puzzle of how to help students understand the possibility of nonverbal exploration (which they may not think of on their own) and to feel comfortable not using words. Teachers can model for students examples in which they use only their movements (or even their stillness), expressions, and perhaps sounds to explore a perspective. Eventually students will begin to develop a sense of the possibilities and a nonverbal "lexicon." Explicit discussion of how exploring some perspectives means not using words can help students get the idea. Teachers may decide to do a projection exercise in which each student chooses a persona that is unlikely to use words and subsequently explores it without words, so that students quickly become more at ease with nonverbal exploration.

"Transferring these lessons to science involves imbuing human-like qualities to science entities. Don't scientists have concerns about activities such as these that encourage children to think about science anthropomorphically?"

There is a history of disagreement between scientists and science educators about whether or not the tendency to anthropomorphize or imbue with human qualities is a problem. On the one hand, some scientists and science educators argue that students will come away viewing various science entities as intentional—having wishes, feelings, and so forth. This, they argue, gives kids the wrong ideas about how to conceptualize these entities. On the other hand, some scientists and science educators argue that it is often very difficult to talk about what is going on in science without some level of anthropomorphism and that scientists themselves often use such terms—for instance, the proton "wants" to go to the electron, or electrons and protons "are attracted." In order to explain what is going on in non-anthropomorphic terms, one quickly lands in very complex territory and often, at the heart of it all, there is no satisfactory explanation of why certain things happen (such as why electrons and protons are attracted, beyond the explanation that they are opposites.) Some

[2] A. Zohar and S. Ginossar, "Lifting the taboo regarding teleology and anthropomorphism in biology education—heretical suggestions," *Science Education* 82, 679–697.

research shows that students in secondary school understand that the terms are not to be taken literally and see them as a means of helping them comprehend and relate to the content.[2]

It is the stance of the *Art Works for Schools* program that such language helps children to use what they know (their own feelings, intentions, and so forth) to understand phenomena that are unfamiliar to them. "Becoming" is a useful exercise to think deeply about what goes on for certain science entities. On balance, teachers can certainly add caveats to lessons, such as "Electrons aren't really like people" and "They can't really think and want things the way that we do."

Viewscopes

Blank Thought Bubbles

The Viewpointer

Name: _____

Persona (Character or Object): _____

Get into the *perspective* of the character or object by asking yourself some questions:

1. What can the person or thing *perceive* (see, hear, smell, feel, taste)?
   Think about its physical position. Consider where it spends its time, whether it moves around or is stable, what is around it, what its size is in comparison to what is around it.

2. What are three things that the person or thing might *know about* (or think it knows about)?
   Think about things that the persona has experienced or has information about. Consider how old it might be, when it lives or lived, and what culture it is from.

3. What are three things that the person or thing might *care about*?
   Think about things that the persona values, hopes for, or fears. Consider its mood, goals and intentions, gender, politics, and beliefs.

4. How do the points in questions 1–3 affect the person's or thing's perspective of the artwork or topic?
   Consider how the different points interact or work together to shape the persona's perspective.

The Retro-Perspectoscope

Name: _____

Understanding why historical events took place or why certain decisions were made involves adopting the perspective of that time. It is easy to look back and say "Why did they think that?" or "That wasn't a good idea." When we make such judgments, we usually use information that is based on what happened later or on our present beliefs and values. Understanding the perspective of a time period means trying to erase this information from our minds and consider what people did perceive, know, and hope for. The Retro-Perspectoscope is a special version of the Viewpointer that helps us look back in history with sensitivity.

Historical event that you are considering: _____

Time period that you are going back to: _____

1. Describe the event briefly.

2. List some general things about the time period that were relevant to the event.
   Think about relevant inventions or discoveries that had or hadn't yet taken place; prevalent political, religious, and scientific views of the day; modes of travel, communication, and daily life.

Now consider the particulars around the event.

3. What could those persons responsible for the event or decision *perceive* (see, hear, smell, feel, taste)?
   Think about their physical position. How did the places they spent their time, their level of mobility, and their position in comparison to others impact their perspective?

4. What are some things that those persons might have *known about* (or think they knew about)?
   Think about things that they experienced or had information about.

5. What are some things that those persons might have *cared about*?
   Think about things that they valued, hoped for, or feared. Consider their mood, goals and intentions, gender, politics, and beliefs.

6. How do the points in questions 3–5 affect the persons' perspective on the decision or event?
   Consider how the different points interact or work together to shape the perspective of those persons at that time.

7. Were there any competing perspectives that you are aware of?
   Explain what they were and why you think they existed. What differences in perception, knowledge, and values might explain these differences?

Playwriting Improvisation Sheet

Character 1: _____

and

Character 2: _____

are

Where: _____

and are

Talking about and doing what: _____

Brief descriptions of characters. Consider age, gender, family, and background.
Consider what this character:

- Perceives (hears, sees, feels)
- Thinks and cares about
- Knows or thinks he or she knows

Character 1:

Character 2:

Special conditions of time and place:

Improvise ten lines of dialogue each. Pass papers to each other, after deciding who goes first. Never speak except on paper or exhibit any judgement of the other's ideas! Listen and react from within your character.

Additional Lesson Suggestions in Brief: Power of Perspective-Taking Module

Freeze Frames

Have students read a newspaper article or historical anecdote and act out different perspectives of the story in a series of frozen frames or poses.

Help students **get ready** by reading the article and discussing possible perspectives on it. Help them get out of their own heads by discussing their perspectives first and then setting those aside. The chosen story should be easy to define and seemingly straightforward. Break into groups. **Deepen understanding** by having each group choose a different character from the story and tell the perspective of that character. Each group should break the story down into three to five frozen frames (poses) that, performed in succession, tell the story.

Reflect by comparing and discussing the contrasting perspectives. A variation on this is to have each person in each group perform a different perspective and tell the story of the contrast. A variation for younger students could involve fairy tales, nursery rhymes, or simple stories.

Variation on Thought Bubbles

Have students get ready by reminding themselves about the lesson on thought bubbles.

Next, they should **view a work of art.**

Deepen understanding by asking students to choose more than one object in the artwork and create thought bubbles for each one, maybe putting the objects into dialogue with one another based on the bubbles or in dialogue with another student's object. Since the thought bubbles allow students to download some of their thoughts onto paper and keep less in their heads at one time, older students might be able to work on more than one object at the same time.

Reflect and connect by exploring possibilities for transfer. For example, one could explore an ecosystem (drawing each organism's concerns, needs) or consider issues in government (like getting a bill passed, using thought bubbles to explore each official's role). Creative writing or exploring literature might also present good possibilities—for instance, looking at how characters interact and how that leads to a strong plot and story line.

Attitude Scoping

Have students **get ready** by reminding them about the lesson on viewscopes.

Next have them **view a work of art.**

Deepen understanding by asking them to choose an attitude through which to examine the artwork. For instance, they might choose to be someone who enjoys nature as they look at a photograph of the outdoors, or they might look at it as someone who has been fighting with environmentalists to develop an area, and so on. They can draw or write down what they see based upon adopting that particular attitude. After they have thoroughly examined one attitude, encourage them to think up another and to explore that one.

Afterwards, ask the students to **reflect** upon what they realized and to **make connections** to other topics and learning.

Going Back in Time

Ask students to adopt the perspective of persons in an artwork depicting a historical event—for instance, the Boston Tea Party—and to write a letter to express their thoughts and feelings. Help students **get ready** by sharing their ideas about how life was different then and the big ideas about what happened. **View the artwork,** asking students to select a person to become and to look at the event through the eyes of that person. They should consider what that person would see (physical perspective) and what they might think (attitudinal perspective). Encourage students to leave 20/20 hindsight behind and try to really see through the values and knowledge of that time in history. You can use the Retro-Perspectoscope activity to help. **Deepen understanding** by writing a letter about the event to some relevant character—for instance, the King, or a friend back in England. Share the letters and **reflect** upon how they helped the students see the event differently.

Contrasting Journal Entries

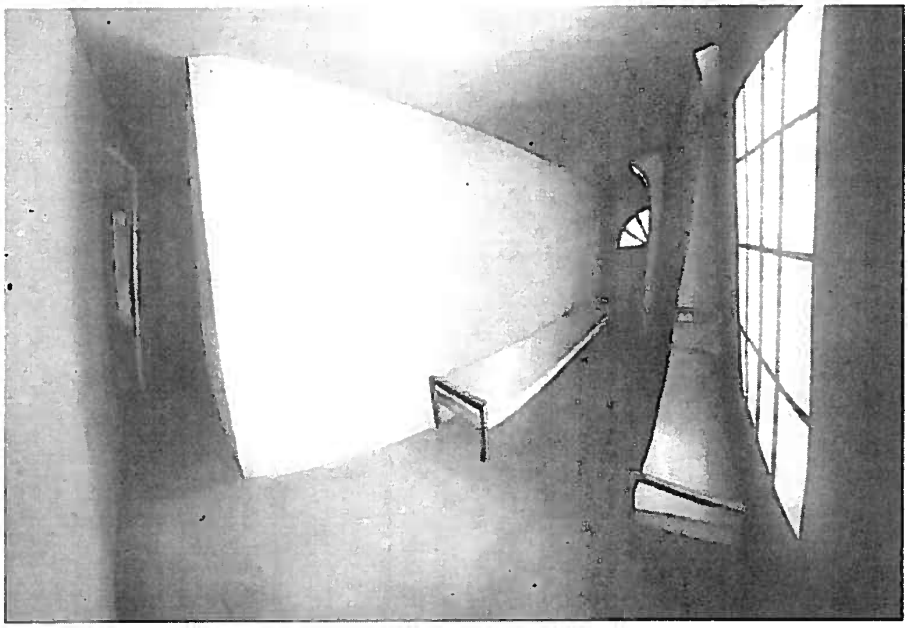
Have students keep a journal with entries from the perspectives of two very different characters being studied (two different scientists with competing visions of the world, two characters from an important historical event, etc.), and eventually work these characters into monologues and dramatic scenes. Encourage students to **get ready** each time they write in one of the journals by taking a few moments to get back into the head of that character. What does that character know, care about, and hope for? **Deepen understanding** by having the "characters" write about the events in a work of fiction or a historical period. Periodically, ask students to **reflect** upon the two perspectives and how contrasting the two is changing their own perspective of the events. In what ways are they finding it easier to write each perspective? In what ways are they finding it harder?

Module 3

Problem Finding

Lead authors Shari Tishman and Tina Grotzer, with assistance from Laura Howick and Debra Wise

Problem Finding



Why is this room without color?
What is the shape in the corner?
Is that a window or just the light from a window?

Problem finding is the process of identifying, refining, and exploring promising paths of inquiry. It is the starting place of most human achievements, great and small, in the sciences as well as the arts. Problem finding involves imagination, curiosity, a sense of wonder, and a sense of rigor. It is at the heart of creativity. This module teaches students techniques that help them deepen their understanding of artworks and curricular topics by posing, pondering, and exploring problems.

Problem Finding
Contents

Before You Start: The Basics for Teachers

Tools and Techniques: Lessons for Students

Resource Materials

Before You Start: The Basics for Teachers

Overview

The formulation of a problem is often more essential than its solution . . . To raise new questions, new possibilities, to regard old questions from a new angle, requires creative imagination and marks real advance . . .
—Einstein

The function of thinking is not just solving an actual problem but discovering, envisaging, going deeper into questions . . . Envisaging, putting the productive question, is often a more important, often a greater achievement than the solution of a set of questions.
—Wertheimer

The farther one pursues knowledge, the less one knows.
—Lao-tse

What is problem finding?

The word *problem* has a bad reputation. Tell someone you're looking for problems and they'll probably think you're looking for trouble. It's true that problems can be troublesome. But they can also be a source of inspiration and an arena for creative inquiry.

Many artists and scientists actually enjoy doing such things as finding, framing, and reformulating problems. Such people are *problem finders*—people who raise questions about the world and use these questions as entry points for creative exploration. Finding problems isn't simply a matter of stumbling onto an intriguing obstacle, although sometimes it happens this way. Rather, it's a way of thinking—a mindset as well as a set of skills. Problem finding involves curiosity, a sense of wonder, a willingness to ask questions, a sensitivity to puzzles and mysteries. It also involves an ability to make gold out of dross—to take superficial or seemingly simple questions and reframe them to get at their hidden richness.

Our culture has many celebrated stories about problem finding. For example, in science, we're told of Darwin's exploration of the puzzle of heredity, or Einstein's famous reframing of the relationship between space and time. In art, the French Impressionists are celebrated for exploring problems of visual perception. But problem finding isn't limited to experts or adults. Even young children are natural problem finders. Consider the four-year-old who pushes the cereal box closer and closer to the edge of a table until it eventually topples off. What the child is doing is creating and exploring a problem of balance.

What does problem finding have to do with art?

Problem finding is involved in art in two broad ways—it is a part of the process of making art, and it is a part of the process of responding to, or appreciating, art.

It is part of making art because most art is a response to, or exploration of, a particular problem or tension. For instance, artists commonly use art to explore problems in such areas as psychology, politics, human relations, family, community, aesthetics, environment, gender, perception, culture, function, and form.

In art, the problem-finding process often seems hidden, because what we see or experience is the finished product—the painting or play or song that is the artist's "solution" to the problems that inspired artistic exploration. But a finished work of art is more than a solution; it is also an implicit record of the problem-solving process. One way to uncover the hidden problems that artists have posed and grappled with is to ask questions about artists' *choice-points*—areas where they seem to have chosen to express something one way rather than another. "Why is the sky painted green instead of blue? What makes the painting feel so closed in? Why is everyone on stage wearing black?"

Asking questions about artists' choices connects to how problem finding is involved in responding to and appreciating art. Question asking is the most common form of problem finding, because a question is a way of posing a problem. Getting children to ask questions about works of art is a powerful way to help them enter into art. For example, ask a group of children to brainstorm a list of questions about a painting and you'll be amazed at the depth and breadth of what they come to notice. Even seemingly simple questions help students attend carefully to the details of a work of art and enter into it more deeply. For example, in response to *The Ambassador*, a watercolor by Frederick Lynch used in the "Artful Reasoning" module, one student posed the question: "Why does the man's arm look funny and too long, as if he's slumping over the cow?" A straightforward question, perhaps. But in posing it, the student sharpens her focus on the relationship between the human figure in the painting and the animal he appears to be riding—a focus that may not have arisen had the question not been articulated.

Good questions, like good problems in general, are good because they open up promising avenues of inquiry. Some of these avenues may lead to deeper insight about a particular work of art, such as the student's question about the position of the man's arm. Other avenues may lead to insights about artistic media in general, such as questions about the craft or materials involved in works of art. Still other avenues may lead to insights about students' own lives, or about topics or issues seemingly beyond the scope of the artwork. But this is part of the power of art—that it can provoke in us insights that both inform and transcend the particular artwork at hand.

How does problem finding in art connect to problem finding in other areas?

Formulating problems is crucial to creative work in many fields. Artists, scientists, engineers, service workers, teachers, and many others need to be able to ask good questions, formulate them skillfully, and explore their many dimensions. Naturally, different fields favor different kinds of problems. For example, problems with high and persistent ambiguity may be promising for artists but not so promising for scientists. Problems of mechanism may be especially appealing to engineers. Problems of theory may be more appealing to philosophers, while problems of practice may be of more interest to teachers. It follows that some of the tools and techniques of problem finding vary across fields, too. For example, the highly specialized procedures for detecting problems of engineering are often different than the more intuitive ways of identifying and framing problems in the humanistic disciplines. Nonetheless, there are some broad areas of problem finding that are powerful across diverse contexts. This module includes lessons in four such areas.

Ponderpoints, the first cluster of lessons in the module, helps students develop a heightened sensitivity to the "hidden in plain view" puzzles and problems that surround them—in art and in everyday contexts inside and outside school. *Question/Reflect/Revise*, the second cluster of lessons, teaches students a strategy for revising and reframing questions to make them more powerful. *Getting Inside Questions*, the third cluster of lessons, helps students resist early closure and learn to mess around in a problem space, exploring its many dimensions. *Back Tracking*, the fourth cluster of lessons, helps students work backward from solutions to identify the problems that inspired them.

Why teach problem finding?

Problem finding is regarded by professionals in diverse fields as one of the most important activities they engage in. This alone is reason enough to teach the skills of problem finding, but there are additional reasons as well.

For one, problem finding is closely connected to curiosity and wonder—two characteristics that most teachers want to cultivate in their students. Children are naturally curious, and teaching problem finding builds on a natural inclination.

Additionally, teaching problem finding combats *solution-mindedness*. Students are often in such a hurry to get answers to problems that they fail to appreciate the possibility space within which the problem resides. By gaining experience posing and exploring problems rather than rushing to solve or surmount them, students learn to resist the tendency to categorize problems too early and to jump to hasty conclusions.

Finally, problem finding helps students deal with the ill-structuredness and complexity that are inherent parts of life. The world is a complicated place. By helping students learn that good questions are often better than good

answers, that fuzzy boundaries needn't be feared, that there is joy to be had in uncovering puzzles and mysteries, we are truly contributing to students' preparation for life.

Tips for Teaching Ponderpoints

Encourage a classroom atmosphere that supports wonder and curiosity. For example, verbally acknowledge when students show a wondering spirit, and model it yourself whenever possible.

Push students to seek a variety of kinds of ponderpoints. For example, if they tend to only find ponderpoints in physical objects, encourage them to find ponderpoints in ideas (e.g., "Do all societies have the same idea of friendship?").

Encourage students to notice things at the edge of their awareness, things they see every day but don't pay much attention to.

Encourage students to look for things they take for granted and things with hidden parts or dimensions.

Encourage students to look for things that seem surprising or mysterious, and for things that feel perplexing, puzzling, or peculiar.

Make sure to give ample class time for students to write in their ponderpoint journals. Also, give students an opportunity to expand their thinking by sharing their ponderpoints with their fellow students.

Ask students to share their tricks for finding ponderpoints with each other.

Ponderpoints

How come wolves and rats are always bad in fables?
What makes you dream at night?
Why are all the people in the collage cut in half so there's a white part and a black part?
How come it's easier for humans to count by tens and not by, say, sixteens?
Why are books always rectangles?
When we look at something, how do we know that's what it really is?
How do our eyes comprehend things?
Why are all the male roles played by women?

Ponderpoints are things that puzzle you or surprise you or intrigue you or perplex you. The world is full of them; they are all around us, hidden in plain view. Ponderpoints invite exploration and examination, but much of the time we pass them by without notice.

Many creative breakthroughs in art and science begin when someone notices a ponderpoint, and learning to notice ponderpoints is an important part of learning to be a good thinker. Like developing a taste for good music or good books, a taste for ponderpoints is a sensitivity that can be developed. By becoming sensitive to ponderpoints, we develop a finer awareness of the world around us and a more discerning sense of its mysteries and puzzles. We also make the world we inhabit a much more interesting place.

Why are the last two or three days before vacation the longest?
How long will it be until the sun dies?
Why do people sometimes cry when they are happy?
Who gets to decide who is cool and who is not?
Why is everything in the picture painted red?
What is life? Are alive and not-alive the only possible categories?
What would the world be like without senses?
Why do colors look different under water?*

*The above questions are all ponderpoints noticed by students.

Tools and Techniques: Lessons for Students

Problem Finding: Key Moves and Attitudes

Key Moves:

Notice things to wonder about.

Look for hidden problems, mysteries, and oddities.

Notice when you feel interested, confused, or surprised. Look closely at things that make you feel that way.

Ask lots of questions and different kinds of questions.

Make questions more interesting by asking "Why? What if . . . ? How would it change things if . . . ? What's hidden?"

Don't stop at the first or easiest answer. Explore ideas further.

Look at things through inventors' eyes. What needs solving or fixing? What could be made better?

Work backwards. Look at objects and ideas and ask "What problems did they solve?"

Key Attitudes:

Be curious!

Be playful!

Be exploratory!

Lesson 1

Finding Ponderpoints by Starting with Art

Good thinkers find lots of things to ponder in the world. This brief lesson introduces students to the power of exploring an artwork by finding ponderpoints in it.

Suitable for elementary and older/adaptable for younger ages
20 minutes

Understanding Goals for Students

- There are many mysteries to be uncovered in an artwork.
- Noticing ponderpoints is a sensitivity that can be developed with practice.

Materials

- Copies of "Problem Finding: Key Moves and Attitudes" for each student.
- Slide: *Baneberry Night* by Morgan Bulkeley
- Slide projector and a place to project it

Preparation

- Read through the lesson.

Procedure

Step 1: Get Ready

Ten minutes

Ask:

- What does the word *ponder* mean?

To *ponder* is to wonder; to think about deeply; to consider or examine attentively.

Take a few ideas.

Tell students that this lesson will introduce them to a method for finding things to ponder. To get ready, they will do a little activity to help put them in the mood.

Explain:

- Sometimes we don't notice things that are at the edge of our awareness. We see them without really thinking about them. Part of learning to ponder about the world involves heightening our awareness of the world around us.

Ask:

- What did you notice but not notice on your way to school this morning? For example, what things did you see without really being aware of them? Did you notice which way the front door to the school opens? Did you notice the texture of the walls, or the color of the sky?

Collect a few ideas and make the point that there are many things in our everyday world that we see without seeing.

Step 2: View the Artwork

Five minutes

Show the slide and give students a moment to look at it quietly.

Ask:

- What do you see?
- What do you wonder about in this artwork?
- What questions do you have?

Step 3: Deepen Understanding

15–20 minutes

On the blackboard, brainstorm a list of things students wonder about in the artwork, or questions they have about it. Don't worry about answering the questions. Just try to collect a rich and diverse list. Use the resource sheet to help prompt students' thinking.

Keep the brainstorm alive for several minutes. Push through a few lulls in students' thinking, until they've generated a good-sized list.

Read over the list and ask students to identify any questions that they think are especially important or intriguing, and to explain why they think so.

Feel free to let the class discuss some of the questions in depth, or go immediately to the next step of the lesson. Don't worry about providing answers to the questions. The point of the activity is to extend perception through question asking. Students will easily see the value of this and be able to discuss it in the following "Reflect" step.

Step 4: Reflect and Connect

Five minutes

End the activity by asking students what they noticed in the artwork that they hadn't seen or thought at first.

Ask students about their thinking:

- What was hard to ask questions about in the artwork? What was easy? Fun?
- Where else, other than in an artwork, could they look for ponderpoints? For example, what would it be like to look for them in a science class? At home? In the gym?

Review the Understanding Goals together. They are listed at the beginning of this lesson.

Lesson 2

Ponderpoint Journals: Keeping a Journal over Time

In this lesson, which is spread over the course of a week, students make several short entries in their ponderpoint journals.

Suitable for elementary and older/adaptable for younger ages

Understanding Goals for Students

- There are many mysteries hidden in obvious, everyday things.
- Noticing ponderpoints is a sensitivity that can be developed with practice.

Materials

- Ponderpoint journals for each student

Preparation

- Read through the lesson.
- Note that this lesson departs from the typical structure of *Art Works for Schools* lessons, because it is spread over the course of the week and also involves homework.
- Look ahead at the class schedule and plan four ten-minute occasions over the next week when students can write in their ponderpoint journals. Also prepare to ask students to write in their ponderpoint journals as homework.

Procedure

Step 1: Get Ready

Five minutes

Remind students of the idea of ponderpoints from the previous lesson. Hand out journals to each student and explain that they will be using these journals to look for ponderpoints over the course of a week. You will give them some in-class time to do this, and you'll also ask them to make some entries as homework.

Step 2: Consider the Topic

Ten minutes

Remind students that at the end of the previous lesson you asked them for ideas about places to look for ponderpoints, beyond artworks. Ask if they can recall their ideas. Collect some ideas if you can, and ask for some new ones. Make a list on the blackboard of several places one could look for ponderpoints. For example:

- In gym class
- Walking to school
- In the hall
- In science class
- At the dentist's
- Watching TV
- Reading a story
- On a cereal box
- Listening to music

Tell students that over the course of the next five days, they will be writing in their ponderpoint journals five times: three times in class, and twice at home. Their task is to notice ponderpoints in lots of different places, inside and outside of school, and to brainstorm a few questions about each one, just as they did with the artwork in the previous lesson.

Ask students to make an entry in their journal for homework tonight and tell them to bring their journals to class the next day.

Step 3: Deepen Understanding

One hour, spread across five days

After the first homework assignment, ask students to share a few of their ideas in class. Later in the day, give students ten minutes of class time to write in their journals again. Draw their attention to the topics they have been studying in school that day and ask whether they can find any ponderpoints in them. If you'd like, read them some more student examples from the introductory ponderpoints page in *Art Works for Schools.*

Give students another homework assignment and two more ten-minute class periods over the course of the week to make entries in their ponderpoint journals. Continue to periodically ask them to share their ideas aloud.

Step 4: Reflect and Connect

Ten minutes

At the end of the week, ask students about the activity:

- Did it change the way you looked at the world? If so, in what ways?
- What was hard about this weeklong activity? What was fun about it?
- What did you learn from this activity that you can continue to use in the future?

Revisit the Understanding Goals listed at the beginning of this lesson.

Optional: Collect students' journals and respond to them in writing. Don't grade them, but acknowledge ideas that seem especially noteworthy. For ideas about how to give written feedback, look at "Touchstones for the Ponderpoints Lessons" at the end of this section. This page tells you things to look for in student work.

Touchstones for the Ponderpoints Lessons

How to tell if things are going well:

Students are able to notice a variety of kinds of ponderpoints.

Students are able to identify ponderpoints in a range of situations and topics.

Students are able to transform everyday objects, occurrences, and ideas into ponderpoints.

Students go beyond the obvious and make an effort to find and explore ponderpoints below the surface of things.

Students invest time and energy in their ponderpoint journals.

Students' sensitivity to ponderpoints increases: they become more alert to opportunities to wonder, ponder, and probe.

Students begin to look for ponderpoints on their own, even when you don't ask them to!

Question/Reflect/Revise

Question/Reflect/Revise (QRR) is a technique that engages students in brainstorming many and diverse questions about a work of art or topic of study and in deepening their questions through revision.[1] The goals of the technique are to help students notice more and to reflect upon and revise questions so that they lead to more interesting insights.

Question asking mobilizes motivation; we tend to be more intrinsically motivated to explore questions that we pose ourselves. Generating *many* and *diverse* questions opens up the problem space and identifies potentially interesting paths of inquiry to pursue. It adds breadth to our exploration. Reflecting upon and revising questions moves us beyond the superficial and helps to refine paths of inquiry that are potentially most illuminating. It adds depth to our exploration.

[1] The question-revising technique was inspired by a similar process (with different conversion strategies) developed by Hilarie Davis in *SuperThink: Strategies for Asking Thought-Provoking Questions,* Dandy Lion Publications, 1982.

Tips for Teaching QRR

Encourage an atmosphere that is safe for brainstorming and taking risks: all ideas are acceptable and negative comments should be outlawed. Even questions that seem off-base can lead students to questions that lend insight.

Sometimes students may offer questions that seem silly or unconstructive. Unless it is a persistent problem, write these down as questions on the list without giving them any more attention than other questions students suggest.

Often there will be a lull in brainstorming after a few minutes. Don't stop yet! The best ideas are often still to come as students push past their first and most obvious questions and begin to pursue more unusual questions.

Often students will "piggyback" ideas from others that are part of the list. This is fine. Encourage them to also try to be flexible in the categories of questions that they come up with. For instance, if they have many questions about one aspect of the artwork, try to get students to consider other aspects too.

Some questions work better than others for certain kinds of revisions. Encourage students to pick and choose questions to modify. If they persevere with one question and get stuck, it may help them to choose a related question that frames the issue differently and work from that one.

Encourage students to adopt a question-seeking stance. Invite them to think about what they would like to know more about, what kind of information they'd like, what they'd like to explore. Encourage them to think about what seems odd, puzzling, mysterious, and intriguing. Get them to pay attention to feelings of puzzlement and confusion. These are often signals to ask "getting-clear questions."

Lesson 3

Learning Question/Reflect/Revise through Thinking about Art

In this lesson, students learn how to use the Question/Reflect/Revise technique to explore and come to a deeper understanding of a work of art.

Suitable for upper elementary and older/adaptable for younger ages
55 minutes

Understanding Goals for Students

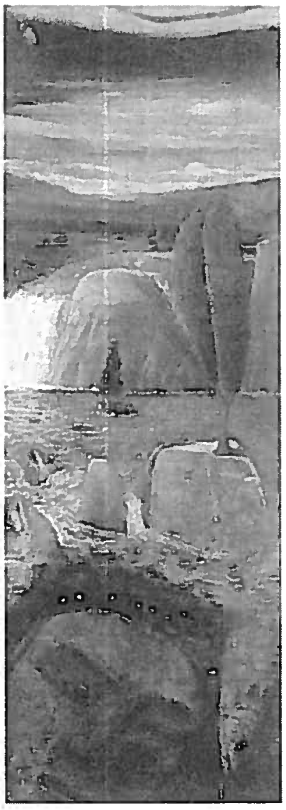
- We notice a lot more about things when we ask lots of questions.
- We can revise questions to make them more interesting.
- Reflecting on a question can bring us to a more interesting question.

Materials

- Slide: *Journey's End* by Candace Walters
- Slide projector and a place to project it

Preparation

- Read through the lesson plan.
- Make copies of the Using QRR to Come Up with More Interesting Questions activity sheet (one for each student) and one or two enlarged copies of the Revising Questions to Create Deeper, More Interesting Questions sheet to put on walls around the classroom. (See resources section for this module.)
- Find an unusual object to show your students.



Procedure

Step 1: Get Ready

Five minutes

Show your class a curious object, something most of them have never scrutinized carefully even though they might have seen it before (for instance, a geode, an invention for which the purpose is not obvious, an odd fruit or seed pod, etc.).

Ask:

- If you could ask one question about this object, what would it be?

Have the students write down one question that they would ask about this object. Call on some students to share their questions and answer a few of them. Contrast how some questions give more information than others.

Explain:

- It is common to ask "What is it?" Knowing what something is called doesn't necessarily help us to know much about it. Some questions look for more information about the thing itself.
- We can ask questions that lead to simple answers, or we can think of questions that can lead to more complex and interesting answers. In this lesson, you are going to learn a technique called Question/Reflect/Revise, or QRR, to help you come up with interesting questions to explore. We are going to learn QRR while asking questions about a work of art.

Step 2: View the Artwork

Five minutes

Project the image and give students a moment of quiet time to look at the artwork.

Ask:

- What do you see?
- What stands out to you?

Take two or three comments and then move on to the next step.

Step 3: Deepen Understanding

35 minutes

Brainstorming an Initial List of Questions

Ask:

- What puzzles you about the artwork?
- What are some obvious, or not so obvious, questions you can ask about this artwork?

Write on the board the students' questions about the artwork. Explain that the focus, for now, will be on asking but not answering questions. Generate a list of

as many questions as you can. Encourage students to generate many questions and diverse questions.

When they reach a lull in question generating, encourage them to push themselves to come up with more. Often this is when the most interesting questions arise. In order to help them push beyond such a lull, you could refer to the "Questions to Invite Problem-finding" in the resources section at the end of this module.

Before ending the brainstorm, ask:

- Does your list have many questions?
- Do these questions cover many different aspects of the artwork?
- How did your question asking change from the beginning to the end of the brainstorm?

Reflecting Upon and Revising Questions

Explain:

- Now we're going to look at some of our questions and revise them to make more interesting questions.

Choose a question to use as an example, such as "What is that bright red cloth across the top of the painting?" Generate a few possible answers for the question.

Show students the sheet for revising questions. Read examples from the sample worksheet to demonstrate the question-revising technique.

After going through an example, have the students choose a question, answer it, and then reflect upon and revise the question in three or four different ways using the revising techniques you've just demonstrated. (They should not worry about trying to revise it in all the forms on the sheet. Not all of the transformations will yield rich questions for any given initial question.) Then they should take at least one of their revised questions and answer it.

Afterwards, have students share their initial question and answer, and their revised question and answer.

Step 4: Reflect and Connect

Ten minutes

Help your students reflect on the big messages of the lesson as they are expressed in the Understanding Goals at the beginning of the lesson.

Ask:

- How did your thinking about the artwork change from the beginning of the lesson to the end? How do you see it differently now?
- When else would you use this technique?

Here's a sampling of some of the kinds of questions that children might ask about *Journey's End:*

- What time of day is it?
- Is the person meant to be underwater?
- Are the fish supposed to represent something?
- Is this a dream or a real place?
- Where did the journey begin?
- Where did the water come from and is it flowing in one direction?
- What is that bright red cloth across the top of the painting?
- Why are there gems or sparkles in his or her hair?
- Is the tree growing out of a rock?
- Are the pillars of stone floating or groundless?

Sheet for Revising Questions (based on *Journey's End* by Candace Walters)

Name: Date:

Using QRR to Come Up with More Interesting Questions

Write your "starting out" questions here:

What is that bright red cloth across the top of the painting?

Try changing your question in the following ways below. Some of the ways will work well and some will not. Do not worry about changing your question into all of the forms below. Just be sure to think about each type of change and then create questions from the ones that work.

Change it to a "why" question:
Why is the curtain there? Why are the colors so bright?

Change it to a "what if" question:
What if the curtain went across a lot more of the painting?
What if the curtain looked like it could open or close?

Change it to a "how does it change things" question:
How does the curtain change the way you think about other things in the painting?

Change it to a "what doesn't get told" question:
What might be behind the curtain?

Change it to a "what if we knew more" question:
If we knew that the curtain was opening or closing like when a play starts and ends, how would it change what you think about the painting?

Change it to a "what is the significance" question:
What is the significance of the curtain?

Change it to a "what if it were so for everyone" question:
What if we all have a red curtain on our world that is falling slowly?

Now choose one of your new, more interesting questions and come up with some answers for it!

Lesson 4

Using Question/Reflect/Revise to Explore a Curriculum Topic

In this lesson, students learn how to use Question/Reflect/Revise to explore and come to a deeper understanding of a topic that they are studying in the curriculum.

Suitable for upper elementary and older/adaptable for younger ages
45 minutes

Understanding Goals for Students

- We notice a lot more about things when we ask lots of questions.
- We can revise questions to make them more interesting. Reflecting on the question can bring us to a more interesting question.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- If you choose your own topic, assemble the relevant materials, which could include a science or social studies artifact, a historical decision, a scientific discovery, etc.
- If you use the sample topic in the lesson, use a Mercator Projection (or cylindrical projection) map of the world. The Mercator Projection dates back to the late 1600s, and there are numerous variations of it. Have a globe available for students to compare with it.

Preparation

- Read through the lesson.
- Decide on a topic in the curriculum that you would like to explore using QRR, or use the sample topic in the lesson.
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want your students to understand.
- Make copies of the Using QRR to Come Up with More Interesting Questions activity sheet (one for each student) and one or two enlarged copies of the Revising Questions to Create Deeper, More Interesting Questions sheet to put on walls around the classroom. (See the resources section for this module.)

Procedure

Step 1: Get Ready

Five minutes

Remind the students of the lesson they did using QRR to look at a work of art.

Ask:

- What was it like to use QRR? How did it change your thinking?
- What are some things that you should remember as you use QRR?

Come up with many questions; generate diverse questions; don't edit yourself while you are brainstorming; all questions are acceptable.

Step 2: Consider the Topic

Five minutes

Give the students time to consider the topic of the QRR and display any relevant materials. Perhaps this involves examining an artifact or putting a historical decision up on the board.

Give students some quiet looking and reflection time.

Ask:

- What stands out to you?
- What aspects of the entity do you feel a connection with? (What resonates with you?)
- What puzzles you about it?

The sample topic in this lesson is about geography and focuses on a mapping called the Mercator Projection. Put the map up and give the students time to study it. Explain that it flattens a sphere by pulling it into a cylinder and unrolling it. Therefore, there is a lot of distortion at the top and bottom. However, it was the standard maritime map for a long time because the basic trade routes were not distorted. All maps contain some distortion or are very chopped up as part of representing a sphere as flat. Have the students compare the map to a globe.

Step 3: Deepen Understanding

35 minutes

Brainstorming an Initial List of Questions

Invite the students to begin asking questions about the topic. Remind them that the focus, for now, will be on asking, not answering questions. Encourage students to generate many questions and diverse questions.

When they reach a lull in question generating, encourage them to push themselves to come up with more. Often this is when the most interesting questions arise. Refer to the "Questions that Invite Problem-finding" in the resources section at the end of this module.

Before ending the brainstorm, ask:

- Does your list have many questions and diverse questions (questions about many different aspects of the artwork and questions from different categories about similar aspects of the artwork)?

Before moving on, ask students to reflect upon how their question asking changed from the beginning to the end of the brainstorm.

Reflecting Upon and Revising Questions to Draw Out Puzzles and Problems
Show the sheet of ways to revise questions. Choose a question to use as an example (from the Mercator Projection, it might be: "Is that really what Antarctica looks like?"). Write it at the top of the board or on a piece of chart paper. Generate a few possible answers for the question; for example, "It gets stretched out so that the map fits on a square piece of paper. It changes the shape of Antarctica because it tries to show on a two-dimensional surface something that is three-dimensional."

Next, reflect on the question itself and some ways to design a better question from it. Have the students choose a question, answer it, and then reflect upon and revise the question in three or four different ways using the techniques on the sheet. Afterwards, have students share their initial question and answer, and their revised question and answer.

Here's a sampling of some of the kinds of questions that students and teachers might ask about the Mercator Projection:

- Is that really what Antarctica looks like?
- Is this map right?
- How come this map is so different from the globe?
- Why is Greenland so large?

See the sample activity sheet at the end of this lesson.

Step 4: Reflect and Connect

Ten minutes

Help your students reflect on the big messages of the lesson as they are expressed in the Understanding Goals at the beginning of the lesson.

Ask:

- How do you view the topic differently than before doing QRR?
- How did the revised question help to deepen your understanding?

Picture of Practice

Student Work Sample: Revising Questions for the Mercator Projection

Name: Date:

Using QRR to Come Up with More Interesting Questions

Write your "starting out" questions here.

Is that really what Antarctica looks like?
Is this map right?
How come this map is different from the globe?
Why is Greenland so large?

Try changing your question in the following ways below. Some of the ways will work well and some will not. Don't worry about changing your question into all of the forms below. Just be sure to think about each type of change and then create questions from the ones that work.

Change it to a "why" question:

Why does Antarctica look so big? Why do other maps not show it that big?

Change it to a "what if" question:

What if we always used a map like this?

Change it to a "how does it change things" question:

How does seeing some land stretched out change the way you think about it?

Change it to a "what doesn't get told" question:

How does showing land stretched out make other things look weird?
Who decides what maps are used?

Change it to a "what if we knew more" question:

If we knew more about the shape and size of the land at the North and South Poles, how would it change what we think about it? Would we think it was more precious?

Change it to a "what is the significance" question:

What is the significance of the size of a continent? What is the significance of the maps we use?

Change it to a "what if it were so for everyone" question:

What if everyone saw the world the way this map shows it?

Touchstones for the Question/Reflect/Revise Lessons

How to tell if things are going well:

The environment is safe for brainstorming and taking risks. Students are respectful of each others' ideas and word their comments constructively.

Students are alert to feelings of puzzlement, oddity, mystery, and confusion. Even if they don't have a question in mind yet, they signal that there is something puzzling to be attended to.

Students are invested in finding out more about the artwork or curriculum topic. They talk about interesting paths of inquiry to explore and about things that they would like to know.

Students ask a range of different kinds of questions. Their questions come from different categories and require different types of answers. (For instance, instead of questions that all ask "what might a certain object be?" students begin to ask a greater variety of questions such as "what might the artist have intended by . . . ?" or "how would the artwork look different without the object?"

Students begin to recognize the difference between questions of various levels of depth. They begin to spontaneously revise surface-level questions to create questions that invite deeper insight.

Students take the question-asking process seriously. They pursue questions that they are interested in and that are in some way anchored to the artwork.

Students push past their first ideas and persevere in question asking after the initial lull that inevitably takes place before the group reaches its richest ideas.

Students begin to see places where QRR can be used to explore other curriculum topics and are motivated to try it.

Getting Inside Questions

Few good questions stand alone. Most questions, especially provocative and deep ones, connect to broader contexts. For example, when an astronomer explores a question about the behavior of a particular planet, she also gains insight into larger issues in astronomy. When an anthropologist explores a question about a particular society, he also learns something about the structure of societies in general. When we explore a question about a particular aspect of a work of art, we also learn things about the artwork as a whole.

It's tempting to dispatch questions quickly by looking for quick answers. But the richness of a question is revealed by spending time lingering with it—probing it, playing with it, pursuing its possible implications. Lingering with a question doesn't necessarily mean answering it, although it might. Rather, it means developing a vivid sense of the possibility space a question occupies.

Good thinkers know how to linger with a question. All they need is practice—and time.

Tips for Teaching Getting Inside Questions:

Encourage students to look for interesting questions—ones that seem to get at the heart of something or that have many dimensions.

Encourage students to be playful and imaginative! Help them twist and turn questions to find interesting angles.

Use engaging methods of exploration with students, such as drawing, theater, writing, or discussion.

Keep students from getting too lost in the method. Keep in mind that the goal is to explore the possibility space that a question occupies, rather than to execute a technically perfect artwork.

Keep students remember that the purpose of getting inside a question is not necessarily to propose an answer or make a finished work of art. Rather, the purpose is to understand the question, artwork, or topic more deeply.

Keep students connected to the larger context by encouraging them to reflect on what they have learned about the topic or artwork that gave rise to the question.

Lesson 5

Getting Inside Questions: Using a Question to Explore an Artwork

In this lesson, students learn how to deeply explore a particular question about a work of art. They use drawing as a tool to come to a better understanding of the work as a whole.

Suitable for elementary and older/adaptable for younger ages
50 minutes

Understanding Goals for Students

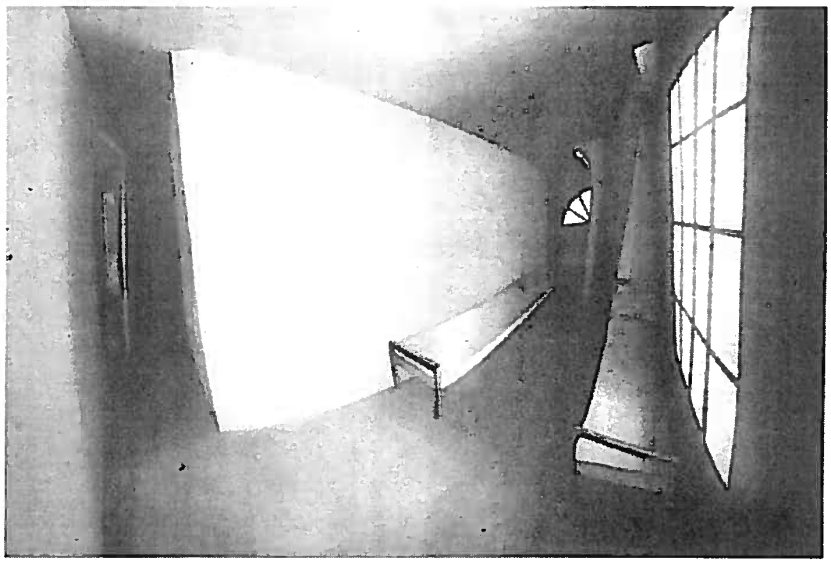
- There is more to do with a question than answer it: good questions invite extended exploration.
- A good question can have many dimensions and can be explored in many different ways.

Materials

- Slide: *This is Jane's Room* by Merle Perlmutter
- Slide projector and a place to project it
- Drawing paper
- Pencils or crayons

Preparation

- Read through the lesson.
- Look over "Tips for Finding Ponderpoints" and/or "Revising Questions" in the earlier and resources sections of this module.



Procedure

Step 1: Get Ready

Five minutes

Even if you haven't taught these lessons, take a look at their Tips sections for help in prompting students to ask and explore good questions.

Explain to students that today they will be building on what they've already learned about problem finding. First they will brainstorm questions about a work of art; then they will choose a question that especially intrigues them and explore the question further.

Ask:

- What makes a question good?
- What makes a question worth spending time thinking about?

Collect a few ideas.

Review the tips for finding ponderpoints (lesson 1) and revising questions (lesson 2).

Step 2: View the Artwork

Ten minutes

Show the class a slide or print of *This is Jane's Room* and give the class a minute or two of quiet looking time.

Remind them of the rules of brainstorming: no criticism; look for lots of different kinds of ideas. Write their questions on the blackboard.

Brainstorm with students:

- What questions do students have about the work?

After students have suggested several questions, read the list aloud. Ask students to refine or add to the questions.

Step 3: Deepen Understanding

15 minutes

Have each student choose a question to explore further. It's fine if more than one student chooses the same question.

Remember that drawing is naturally engaging. Sometimes students get absorbed in the activity of drawing and lose sight of the question they are trying to explore. As you circulate the class and look at students working, remind them to stay connected to the question and to the artwork.

Explain:

> You are going to explore your questions *through drawing*. The purpose of this activity is not to make a "good" picture, in the sense of the picture being accurate or beautiful. The purpose of the drawing is to learn more about the question.

Distribute a few sheets of paper and drawing materials to each student.

Step 4: Reflect and Connect

Ten minutes

Share the drawings: Give students a chance to look at each other's work in a non-judgmental format. For example, have everyone write their questions underneath their drawings and put them on their desks. Then, have the class walk around and look at all the drawings. Alternatively, particularly for young students, ask everyone who worked on the same question to hold up their drawings for the rest of the class to see.

After everyone has seen all the drawings, ask the class how this activity affected their ideas about the artwork. For example,

Ask:

- What details did you see in the painting as a result of doing this activity that you didn't see before?
- What new thoughts do you have about the artwork?
- What new thoughts do you have about the artist's intentions? About why he or she might have decided to make the painting in this way?
- What new thoughts do you have about the artist's technique? Do you think it was hard for the artist to make this painting? Why or why not?

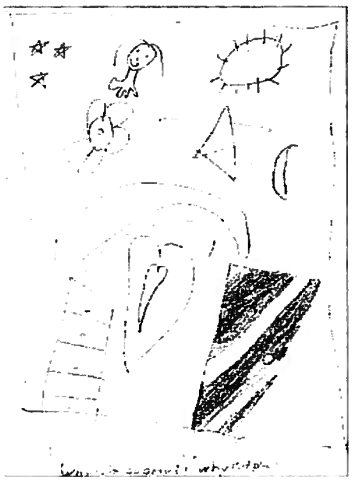
Discuss the Understanding Goals of the activity with students—they are listed at the beginning of this lesson.

Picture of Practice

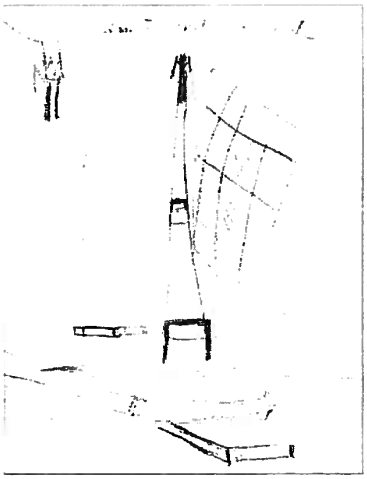
Getting Inside Questions: Using a Question to Explore an Artwork

Using Drawing to Get Inside a Question

Students in a third grade class used very different approaches to explore their questions. One child asked herself why the room was so gray and plain and drew a version of the room that is fancy and colorful: she explored the artist's choice by imagining an alternative choice. Another child, asking himself "Is that a slide?" imagined many different visual perspectives, testing his perception of an object in the room (below left). Yet another student (below right) asked herself "Why is it bright on one side and gloomy on the other?" and drew two possibilities.



Third grader's drawing (with questions "Why is it so gray? Why is it so plan [plain]?") showing a bright alternative.

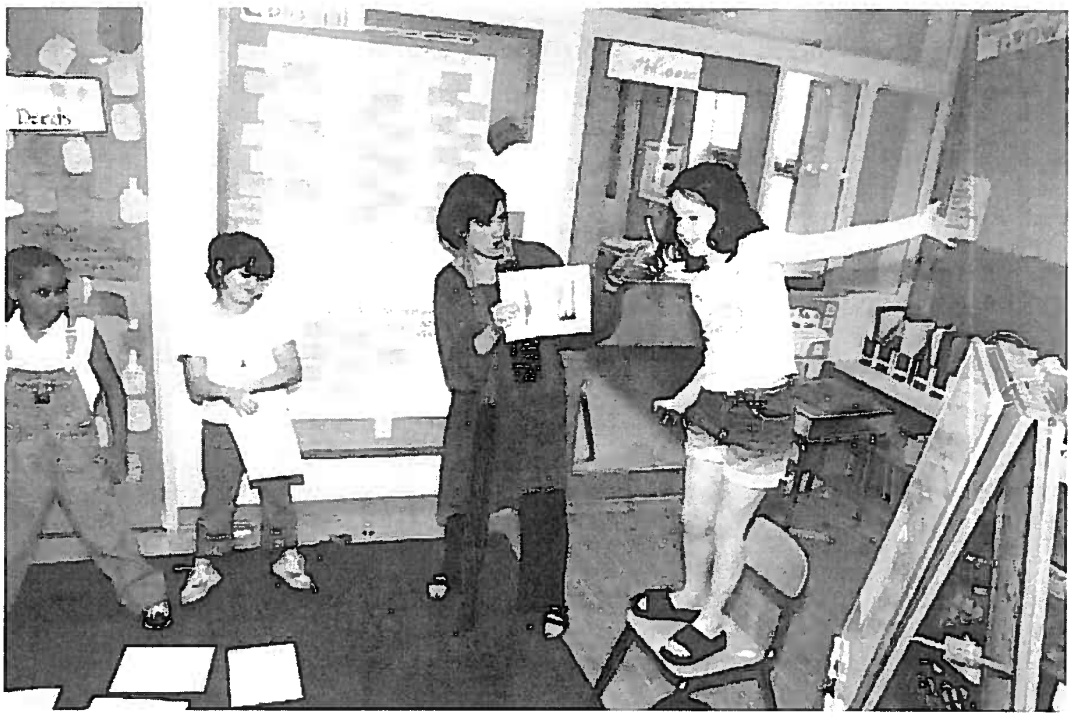


Picture of Practice

Getting Inside Questions: Using a Question to Explore an Artwork

Using Performance to Get Inside a Question
There are many ways to explore a question through art—not only through drawing but through performance, such as acting, movement, and music.

"What does Jane do in her room?"
A third-grade class explored this question by imagining themselves as Jane in the room, taking turns free-associating to an imaginary visitor about what she does there. As they spoke, the teacher encouraged them to move, to loosen up their thoughts: "Show us what you do in your room." Several children imagined that they would take advantage of the empty spaces and interesting shapes to rollerblade, play soccer, and slide: "She's all alone, she can do anything she wants." Looking back at the artwork in discussion, another child shifted the class's perspective on the artwork—and shifted the tone of the improvisations—with a new possibility: "The place is so gloomy because it's a foster home."



Lesson 6

Getting Inside Questions about a Topic from the Curriculum

In this lesson, students learn how to get inside a question about a topic from the curriculum.

Suitable for elementary and older/adaptable for younger ages
45 minutes

Understanding Goals for Students

- There is more to do with a question than answer it: good questions invite extended exploration.
- A good question can have many dimensions and can be explored in many different ways.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- Anything that is relevant to the topic chosen

Preparation

- Choose a topic from the curriculum. The topic can be almost anything. For example:
    - a passage from a text
    - a poem
    - a fulcrum
    - a fossil
    - the human elbow
    - water changing into steam
    - a historical event
    - a musical instrument
    - punctuation
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want your students to understand.
- Think about which media and/or formats you want to make available to students in order to get inside a question. Getting inside a question involves doing something. In the previous lesson, students used the medium of drawing. Other media include theater (improvisation or projection), writing, dance or movement, and music. Other formats include small group discussion, extended observation, and experimentation. To get a sense of how different media can be used to get inside a question, look at the "Human Elbow" and "Underground Railroad" examples later in this lesson.

Procedure

Step 1: Get Ready

Five minutes

Remind students about the Getting Inside Questions technique that they learned in the previous lesson. Explain that today they will be getting inside a question about a topic from the curriculum.

Ask:

- What kinds of attitudes or characteristics help people do a good job of getting inside a question? For example, does it help to make believe you're a detective? Is it important to be patient? Is it good to be imaginative?

Take a few ideas from the class.

Step 2: Consider the Topic

Ten minutes

Show or read the class something relevant from the topic. For example, show a fossil, demonstrate water turning into steam, read a poem, look closely at the human elbow, etc.

Have students brainstorm questions about the topic. Remind them of the rules of brainstorming: no criticism and look for lots of different kinds of ideas. Write the questions on the blackboard. After students have suggested several questions, read the list aloud and ask students to refine or add to the questions. If you like, you can encourage them to use the QRR technique in this module.

Step 3: Deepen Understanding

15 minutes

Have each student choose a question to explore further. Alternatively, have students work in pairs or small groups. Tell students that they will be exploring their chosen questions through whatever media and/or formats you've decided to make available. (It's great if you can offer students an array of media and formats and let them choose for themselves.) Give an example of what you mean (see below). As you did in the previous lesson, explain that the purpose of this activity is to learn more about the question and, through doing so, learn more about the larger topic.

Have students share what they have done.

Examples:

TOPIC: Why doesn't the human elbow bend backwards?

Revised Questions: What would happen if it could bend backwards? What problems is the elbow a solution to? What problems are solved by having the elbow NOT be able to bend backwards?

Modes of Exploration:

Drawing: Draw pictures showing what could happen if someone's elbow could bend backwards.

Sculpture/experimentation: Construct two paper arms, one with a normal elbow and one with an elbow that bends back. Explore what each can and can't do.

Observation: Watch an elbow closely. Try to see what its range of motion does and does not make possible.

Movement: Try several everyday tasks while imagining that your elbow could bend backwards. What would be different?

TOPIC: The 1850s Underground Railroad

Revised Question: How did conductors on the Underground Railroad find each other?

Mode of Exploration:

Performance: Imagine and improvise possible places where people might have been able to meet in the early 1800s, using secret codes to identify themselves. For instance, some possibilities might include women at a quilting bee, or customers at an inn.

Revised Question: What went on in Harriet Tubman's mind?

Mode of Exploration:

Performance: Imagine two voices in Tubman's mind. One actor plays Tubman, while two others play the sides of an internal argument about whether or not she should join John Brown at Harper's Ferry.

Step 4: Reflect and Connect

Ten minutes

Discuss with the class what they learned from this activity. For example,

Ask:

- What did you discover about the topic that you didn't know before?
- What new questions and ideas do you have about the topic?
- What interests or intrigues you about the topic now that didn't interest you before?
- What connections can you make between the topic we just explored and other things you know about?

Discuss the Understanding Goals of the activity with students—they are listed at the beginning of this lesson.

Picture of Practice

Getting Inside Questions about Maps

Mr. Soares, a fourth-grade teacher in the town of Glenville, was showing a map of Glenville to his students when it occurred to him that "maps" would be an interesting topic to explore through problem finding. Using the "Getting Inside Questions" lessons he had taught as a loose guide, he began by asking students to brainstorm a list of questions about maps. Some questions they asked were:

- Who makes maps?
- How do they decide what should be on a map and what shouldn't?
- How do mapmakers know for sure what the land is like? What if they are wrong?
- What if things change, like new streets or parks are built?
- Who uses maps? Do different kinds of people need different kinds of maps for different information?

Mr. Soares read the list aloud and asked students to formulate a new or revised question that was especially thought provoking. After some discussion, the class combined a couple of questions into the question "What would it be like if there were different maps for different groups of citizens?"

Next, Mr. Soares asked the class to list different groups of citizens in Glenville who had different needs, jobs, or interests. Students identified such groups as elderly people, people in wheelchairs, kids who like to ride bicycles, kids who skateboard, policemen, firemen, parents with babies, kids whose parents aren't home after school. Ideas occurred to them as they made their list. For example, one student pointed out that it might be helpful to elderly citizens if a map showed where there were benches to sit down and rest. Another student commented that kids who skateboard might like to have a map that showed which parking lots and sidewalks were good for skateboarding. After a pause, he added that some stores don't let skateboarders use their parking lots, so that would be important information on a map, too. Concerning a fireman's map, several students agreed that it would be good for firemen to have a map that showed where the fire hydrants were.

Mr. Soares divided students into small groups and told each group to choose two different citizen groups from the list and to design a map of Glenville for one, taking into account each one's special circumstances. For instance, they might design one map for skateboarders, and one map for elderly people. The reason Mr. Soares asked students to make two maps rather than one was because he wanted them to explore the idea of contrasting needs, which he felt was central to the question "What would it be like if there were different maps for different groups of citizens?"

Mr. Soares let students work on their maps over the course of a week. He told each group to keep an ongoing log of ideas and questions about mapmaking as they worked, and he periodically reminded them to write in it. At the end of the week, the groups presented their maps and logs to the class. Mr. Soares was pleased. The activity had encouraged students to explore many social and technical issues related to mapmaking and, in doing so, to explore issues of community more broadly. Students' maps were interestingly diverse, and, taken together, they nicely illustrated the many dimensions of the question "What would it be like if there were different maps for different groups of citizens?"

Touchstones for the Getting Inside Questions Lessons

How to tell if things are going well:

Students are able to brainstorm a variety of questions.

Students are able to choose appropriate questions for exploration, that is, questions that reward extended inquiry.

Students are able to take a superficial or one-dimensional question and revise it into a more interesting question.

Students show a willingness to engage playfully with questions, twisting and turning them to discover interesting angles.

Students are able to resist easy answers and instead appreciate the complexity of questions.

Students are able to stay with one question for awhile.

Students resist getting too fixated on perfecting their use of the media with which they are exploring a question (e.g., drawing, painting, theater) and instead stay connected to the larger goal of exploring a question's possibility space.

Students make connections among the question-exploration techniques and activities introduced in this module and other contexts in their lives, inside and outside of school.

Back Tracking

Every solution, every theory, every work of art, and every invention or design can be thought of as a response to a problem or set of problems. Finding problems behind solutions means uncovering the problems or tensions that inspired or informed the solution. *Back Tracking* is a technique that involves looking at a solution and generating several possible problems that it could have been designed to solve. It engages students in a creative mindset of considering the things they see around them as potential windows into the creator's thought processes. It invites students to find the problems that led to the solutions and to realize that one solution could address a multitude of problems.

Tips for Teaching Back Tracking

Encourage an atmosphere that is safe for brainstorming and taking risks: all ideas are acceptable, and negative comments should be outlawed. Even questions that seem off-base can lead students to questions that lend insight.

Encourage students to see the process as one of seeking possibilities, rather than looking for a right answer.

Often there will be a lull in brainstorming after a few minutes. Don't stop yet! The best ideas are often still to come as students push past their first and most obvious questions and begin to pursue more unusual questions.

Back Tracking can be difficult for the youngest children because it involves holding a "solution set" in mind and then working backward toward hypothetical possibilities for how it came about. This is a lot for young children to hold in their heads at once! However, experience shows that they are capable of it. If you do try the technique with young children, make sure to offer them a lot of support and modify your expectations for what they will generate.

Encourage students to notice oddities and puzzles in the artwork or curriculum topic. These are often rich areas to explore by using Back Tracking.

Lesson 7

Using Back Tracking to Explore an Artwork

In this lesson, students learn how to use the problem-finding technique of Back Tracking to explore and come to a deeper understanding of a work of art.

Suitable for upper elementary and older students
45 minutes

Understanding Goals for Students

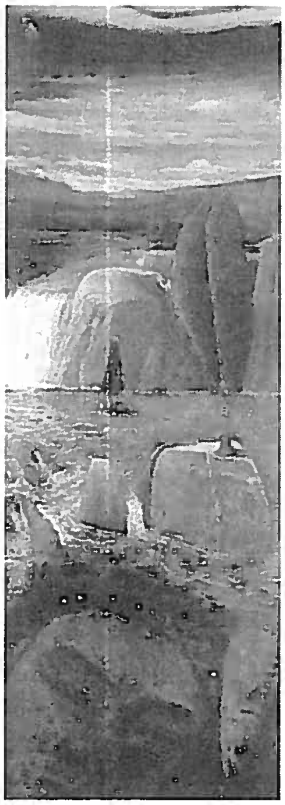
- We can consider things that we encounter everyday and imagine the thinking processes that led to their creation.
- Viewing things around us as solutions to problems invites us to imagine what problems they solve.
- One solution could address a multitude of problems.

Materials

- Slide: *Journey's End* by Candace Walters
- Slide projector and a place to project it

Preparation

- Read through the lesson plan.



Procedure

Step 1: Get Ready

Five minutes

Begin the discussion by demonstrating some simple "solutions" in your classroom.

Ask:

- Point to the blackboard. It is a solution to a problem. What problem did it solve? If students stop after one problem, ask if anyone can come up with another problem. Try to gather a few different ideas.

- Point to a chair. It is a solution to a problem. What problem did it solve? Again, try to gather a few different ideas.

Explain that in this lesson students are going to learn a technique called Back Tracking to help them discover the problems behind various solutions and to help them consider the complex and rich thinking behind the things we see around us every day.

Step 2: View the Artwork

Five minutes

Project the slide and give students a few moments of quiet looking time.

Ask:

- What do you see?
- What stands out to you?
- What puzzles you about the artwork?

Step 3: Deepen Understanding

35 minutes

Choose something prominent and perhaps curious in the artwork and consider it as a solution. For example, focus on the face at the bottom of the ocean.

Ask:

- What are possible "problems" that this may have solved?

Stress that we don't know what the artist was thinking, nor are we trying to figure it out exactly. Instead we are trying to travel backward down the path he or she might have taken in order to consider a set of possibilities.

What might the face at the bottom of the ocean be a solution to?

Some possible "problems" include:

- After your eyes follow the water down the waterfall and into the larger body of water, something needed to draw your eyes back up to the top of the artwork. The gaze of the face brings you out and invites you back up.
- The large, serene head solved the problem of having too much unsettling activity. It settles the viewer into a kind of serenity at the end of the journey.
- It solves the problem of balance between big and small objects.

Have students choose some other aspects of the artwork to consider as solutions. Make a list together of five or six aspects that are puzzling in some way or that particularly resonate with the viewers.

Have the students work in groups of three or four to generate possible problems that a certain aspect of the artwork solves. They should try to come up with at least four or five.

Go though each aspect and have students share what they thought of as potential problems that it solves. Invite further discussion on each as students share their ideas. (Students may piggyback on each other's ideas.)

Ideas may include social situations where someone does something curious or otherwise out-of-character; for instance, is sarcastic or lies about something. The person on the receiving end might consider what problems the sarcasm or lying solved for the person who did it. They might also consider everyday object's like kneepads for rollerblading or airbags in cars.

Step 4: Reflect and Connect

Ten minutes

Ask:

- Did Back Tracking change the way that you viewed the artwork? If so, in what ways?
- What new ideas about the artwork do you have now that you didn't have before?
- What did you think was easy? Hard?
- Where else can you imagine using Back Tracking to help you see something differently?

In the discussion, revisit the Understanding Goals that are listed at the beginning of the lesson.

Lesson 8

Using Back Tracking to Explore a Curriculum Topic

In this lesson, students learn how to use Back Tracking to explore a topic in the curriculum.

Suitable for upper elementary and older students
45 minutes

Understanding Goals for Students

- We can consider things that we encounter everyday and imagine the thinking processes that led to their creation.
- Viewing things around us as solutions to problems invites us to imagine what problems they solve.
- One solution could address a multitude of problems.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- Anything that is relevant to the topic chosen

Preparation

- Choose a topic from the curriculum, or feel free to use the topic from math, place value, that is used as an example in the lesson.
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want your students to understand.

Procedure

Step 1: Get Ready

Five minutes

Remind the students about the technique of Back Tracking, which you did while looking at a work of art. Explain that, in this lesson, the class will be using Back Tracking to reach a deeper understanding of a topic in the curriculum.

Step 2: Consider the Topic

Five minutes

Review the topic to be considered. If it is a topic that is an object or has relevant artifacts (maps, scientific devices, a musical instrument), put these out for students to study. Encourage students to think about the topic or study the objects and consider the following questions:

- What stands out to you?
- What puzzles you about the topic/object?

This lesson focuses on a math topic and uses place value as an example.

Step 3: Deepen Understanding

35 minutes

Have students brainstorm a list of prominent aspects of the topic. Think broadly about what the list might include. Try to focus on aspects or parts of the topic that are especially intriguing.

Aspects of place value:

- zero
- categories of value (ones, tens, hundreds . . .)
- Hindu-Arabic numerals
- decimal points

Choose one aspect of the topic to consider as a solution. Ask students to generate a number of possible problems that it may have solved.

For example, what problem(s) does zero solve?

- It solves the problem of mixing up what place the ones, tens, hundreds, etc., are in. It makes it clear even if you don't have numbers lined up exactly.

- It (and place value more generally) solves the problem of working with large quantities by making it possible to increase the value of something tenfold just by adding a zero.

- Having a place holder (and a place value system more generally) solves the problem of having enough numbers. You don't have to invent an infinite number of numbers (an impossibility): instead, you can reuse the numbers according to a certain system and using zeroes to hold empty places.

Have the students work in groups of three or four to generate possible problems that another aspect of the topic solves. They should try to come up with at least four or five.

Go though each aspect and have students share what they thought of as potential problems that it solves. Invite further discussion on each as students share their ideas. Students may piggyback on each other's ideas.

Step 4: Reflect and Connect

Ten minutes

Reflect with students on what they have learned about the topic.

Ask:

- How has considering aspects of the topic as a solution to a problem helped you to view it differently?
- What other topics from the curriculum would it be interesting to use the technique of Back Tracking with?

In the discussion, revisit the Understanding Goals for students—they are listed at the beginning of this lesson.

Picture of Practice

Using Back Tracking to Explore a Choice in a Story

Mrs. Dolan's second-grade class is reading *The Lorax* by Dr. Seuss.[1] Mrs. Dolan asks the class to use Back Tracking to think about why Dr. Seuss used something called *thneeds* in the story. "Let's think about thneeds," says Mrs. Dolan. "What are they?"

Kristen offers, "Thneeds are something that everyone wanted."

Josh adds, "They're called Thneeds because they're something you need."

"It isn't like fancy stuff that you don't need, like a hat with feathers coming out or a pink fur coat," says Valerie, "it's a shirt, a glove, a hat and you can use it for other stuff, too . . . "

"But the Truffala trees were killed because everyone bought thneeds," says Olivia.

"Why do you think Dr. Seuss included thneeds in the story?" asks Mrs. Dolan.

"Maybe he called them thneeds because people would think that they really needed them and wouldn't think about it until everything was polluted," says Tyler.

"But it's bad that people thought they needed them," Olivia protests.

"So if the Onceler didn't convince people that they needed thneeds, none of the pollution would have happened?" asks Mrs. Dolan.

"Well, maybe other pollution could have happened," says Connor.

"But if the characters in the story realized that they didn't really need thneeds, then they wouldn't have kept polluting and then things wouldn't have gotten so so soooo bad. Then the story wouldn't have happened the way it did and it wouldn't scare people to not pollute," reasons Ariel.

"So you think Dr. Seuss chose thneeds as part of the story so things would get worse and worse and people reading the story would realize that polluting is bad? That's good thinking. It works to make the story very dramatic," Mrs. Dolan says. "Is it possible that something like this could happen to us? Are there things we think we need that maybe we don't? Things that could hurt our environment?

The class talks about things like wrapping paper and having too many toys. Mrs. Dolan asks them to think about it more when they go home that night and try to notice three things that they think they need that maybe they don't.

[1] Dr. Seuss, *The Lorax*, Random House, New York, 1971.

Touchstones for the Back Tracking Lessons

How to tell if things are going well:

The environment is safe for brainstorming and taking risks. Students are respectful of each others' ideas and word their comments constructively.

Students have an attitude of curiosity and are invested in finding out more about the artwork or curriculum topic.

Students generate multiple possibilities for what the creator may have been thinking as they design a certain "solution." They don't stop after considering just one possibility, and they don't pursue "the right answer."

Students are comfortable not knowing exactly what the creator might have intended. However, they stay anchored to the artwork or curriculum topic and seek out evidence to support their thinking.

Students push past their first and most obvious ideas. They persist beyond the inevitable lull in brainstorming to pursue more unusual insights.

Students begin to find other places in the curriculum where they can use Back Tracking to lead to new insights, and they are enthusiastic about exploring the topics in this way.

Frequently Asked Questions about Problem Finding

"Many of the activities in this module involve students in asking lots of questions that don't get answered. Won't it bother students not to have answers? Won't they feel a lack of closure?"

The activities in this module use question asking as a way of extending the horizons of possible knowledge. So even if an individual question goes unanswered, the extended thinking involved in exploring a question or in brainstorming a large set of questions does in fact provide quite a lot of satisfaction. As the quotes in the beginning of the "Problem Finding Overview" suggest, asking a good question is itself a satisfying intellectual achievement and an act of creative imagination. Students understand this intuitively. But their intuition is at risk if it isn't supported by the culture of the classroom. Students need confirmation that question asking is valued as a way of knowing.

Valuing question asking is harder than it seems, since schooling is largely about being able to *answer* questions—especially test questions. So it's important to find concrete ways to show students that their questions are indeed valuable. This can happen informally, by drawing attention to good question asking in the course of classroom discussion. It's also good to find more formal ways to encourage question asking. For instance, the asking of questions itself can be the final question on a quiz: "Now that you've finished the book/learned about fractions/studied whales, what are two big questions that you have?" In the context of art, question asking can be part of a discussion about an artwork: "What's one question you could ask about this artwork, now that we've looked at it awhile, that you wouldn't have thought to ask before?"

"What about when students do have questions they want answers to, and I can't provide them?"

Almost certainly the activities in the problem-finding module will cause students to ask questions that teachers can't answer. This is to be celebrated rather than avoided, since one of the goals of the module is to help students learn to identify intriguing areas of inquiry on their own. Still, sometimes students ask questions that do need attention, even if you yourself can't provide the answer.

Generally, students' questions fall into two categories: informational and speculative. Informational questions concern "facts" like names and dates and biographical information ("Was this artist born in the United States? Did she mainly paint landscapes?"). To help with these sorts of questions, you can guide students to sources where they can try to locate the information, such as the library, personal interviews, or the internet. Speculative

questions are questions that go beyond information to ask "why?" or "what if" or "suppose that . . ."("Why does the painting seem so dreamy? What would the painting sound like if it could talk? Suppose the artist came to our classroom—what would we ask him?"). To help students explore speculative questions, you can provide a format for them to expand and unpack the question—to explore its possibility space. Such formats include extended discussion, debate, and creative activities such as writing, improvisation, and drawing.

"Many of the students' questions concern the artist's intent—what the artist 'really' meant to say. How should this be handled?"

It's natural to be interested in what an artist had in mind when he or she made an artwork. But it's important not to oversimplify the role of intentions in a finished artwork. The process of making art is complex, and the role of the artist's intentions is different from the role of intentions in making something simple, like a list for the supermarket.

The process of making art, unlike the average trip to the market, is dynamic, prolonged, and multilayered. Artists' intentions evolve and change. Chance and serendipity play a role. Sometimes artists themselves don't know exactly what all the aspects of their works mean. Or, even if they are fully aware of what they believe they are trying to express in a work of art, the work often means more than they intend. This "more" can be a matter of many different things, such as the artist's unconscious intentions, the social context of the work, the physical context of the work, and the viewer's own context. As mentioned in the "Looking at Art" section of this curriculum, many contemporary artists are pleased when people find meanings in their artworks that weren't consciously part of their intent. Posing questions about an artist's intentions is a powerful way to explore an artwork, but it isn't the endpoint. The endpoint—if there can be said to be one—is expanding one's perceptions and deepening one's insights—about the artwork, and about the world.

When students bring up questions of intent, you may find it more fruitful to treat them as questions about choice points in the artwork. Choices reflect intentions, but they also reflect the "more" that goes beyond intentions—cultural influences, psychological influences, and so on. For example, suppose a student asks "Why did the artist paint the sky orange?" You might say something like "That's a good question. What other choices might the artist have made? How would the painting be different if he or she had made another choice?"

Questions to Invite Problem Finding

- What questions does the artwork or topic make you want to ask?
- What do you wonder about in the artwork or topic?
- Does anything you see make you curious?
- What do you notice that is tricky or seems like a mystery?
- Is there anything about the artwork or topic that seems like it doesn't belong there?
- Is there anything about the artwork or topic that seems unusual? Weird or strange?
- If you could ask the artist one question about the artwork, what would it be? (Or ask an expert one question about the topic?)
- Does it seem like anything is missing in the artwork or topic?
- Is there anything that you don't understand in the artwork or topic that you want to find out more about?
- Does anything in the artwork or topic make you wonder how it would be different if other choices had been made?

Revising Questions to Create Deeper, More Interesting Questions

Going from recall to puzzle-posing questions:

Change it to a "why" question.
Change it to a "what if" question.
Change it to a "how does it change things" question.

Going from what's there to what's hidden or missing:

Change it to a "what doesn't get told" question.
Change it to a "what if we knew more" question.

Going from what's there to deeper issues:

Change it to a "what is the significance" question.
Change it to a "what if it were so for everyone" question.

Asking Better Questions: Tips for QRR

1. Ask questions

- *Ask getting-clear questions* (*questions of clarification*). Feelings of puzzlement and confusion are often signs that tell you where to ask getting-clear questions.
- *Ask finding-out-more questions.* Think about what you would like to know more about, what kind of information you'd like, what you'd like to explore.
- *Ask puzzle-finding questions.* Think about what seems odd, puzzling, mysterious, intriguing.
- *Ask different kinds of questions.* Look for questions in different categories; look for questions that need different kinds of answers.
- *Ask questions in a brainstorming spirit.*
  Ask lots of questions.
  Look for different kinds of questions.
  Be playful.
  Be imaginative.
  Explore different dimensions.
  Be open to others' ideas.

2. Refine and revise questions

- Make narrow questions into deep questions.
- Make fuzzy questions into clear questions.
- Make boring questions into interesting questions.
- Deepen and transform questions by changing recall questions into puzzle-posing questions.
  Ask:
  Why?
  What if?
  How does it change things if . . . ?
  What doesn't get told?
  What's hidden?

Name Date

Using QRR to Come Up with More Interesting Questions

Write your "starting out" question here:

Try changing your question in the following ways below. Some of the ways will work well and some will not. Do not worry about changing your question into all of the forms below. Just be sure to think about each type of change and then create questions from the ones that work.

Change it to a "why" question:

Change it to a "what if" question:

Change it to a "how does it change things" question:

Change it to a "what doesn't get told" question:

Change it to a "what if we knew more" question:

Change it to a "what is the significance" question:

Change it to a "what if it were so for everyone" question:

Now choose one of your new, more interesting questions and come up with some answers to it!

Additional Lesson Suggestions in Brief: Problem-Finding Module

Explore Puzzling Relationships Using the Technique of Role Playing

Get ready by encouraging students to adopt a problem-finding attitude. Remind them of the "Key Moves and Attitudes."

View the artwork or curriculum topic, looking for things that puzzle them or seem odd. List some of their ideas. Select one or two that focus on the relationship between two or more characters or aspects of the artwork or topic.

Deepen understanding by role playing to explore the relationship between the characters or aspects. Encourage students to role play the relationship a number of times or invite different groups of students to role play the relationship to draw out various insights and possibilities.

Reflect upon how focusing on the puzzling relationship may have changed the way that they view the artwork or curriculum topic. **Connect** back to other things you know about the artwork or topic and consider how the role play may have affected what you know or think.

Back Track to Explore Historical Solutions to Scientific Problems

Get ready by reminding students about what is involved in Back Tracking.

Consider the topic, an interesting problem from history; for instance, how people over the years have solved the problem of mapping a spherical world onto a flat surface.

Deepen understanding by exploring a variety of solutions to the problem. For instance, you might consider a Peter's Projection Equal Area Map, a Mercator Projection, a Robinson's Projection, a globe, and Buckminster Fuller's Isohedral Projection. Think backward from each "solution," noting what problems it solved and what trade-offs had to be made.

Reflect and connect to other things that you know from history. For instance, consider each projection in the time frame in which it was created and think about why certain tradeoffs may have been acceptable.

Keep an Ongoing Ponderpoints Journal

Get ready by reminding students about the importance of noticing puzzles in order to find interesting things to explore and be curious about. Have students continue to keep a Ponderpoints journal of questions and puzzles.

Invite them to **view artworks, consider curriculum topics, and consider their everyday lives** with an eye toward what puzzles and questions they can find.

Periodically **reflect** upon the lists and consider how keeping the list may have changed their thinking attitude. Try to incorporate some of the puzzles they notice into your lesson plans.

Considering Objects as Solutions

Get ready by making a list of common objects. Choose one and consider it; for instance, a down jacket. What features does it have? What is its purpose? What is its structure?

Deepen understanding by thinking back to the problems that it solves (it insulates to conserve warmth or slow down thermal equilibrium). Then see if you can find other solutions to the same problem.

Make connections to other kinds of designs that solve either the same problem differently (a furnace or hot water bottle, which increase warmth by creating additional sources for it rather than insulating) or a slightly different problem in a similar way (an ice cooler, which insulates to keep warmth out; at a more basic level, it solves the same problem, to slow down thermal equilibrium.)

Reflect upon how the process of viewing objects in this way affects the way you think about them.

Back Track to Explore Solutions to Social or Political Problems

Get ready by reminding students about the technique of Back Tracking. Choose an important social or political idea or institution, such as democracy.

Consider the topic by reviewing what it is.

Deepen understanding by asking students to brainstorm the various problems that the topic solves. For example, what problems does the institution of democracy solve?

Reflect by discussing any new insights and questions students have about the topic.

Module 4

The Magic of Making Metaphors

Lead authors Laura Howick and Debra Wise, with assistance from Tina Grotzer and Shari Tishman

The Magic of Making Metaphors

What could this artwork sound like? Move like?
If this artwork were weather, what would it be?
If this artwork were a person, what would its occupation be?

These questions invite us to stretch our imaginations, to make analogies between dissimilar things in such a way that we conceive a new and richer understanding of each.

Metaphorical thinking is central to the work of any artist. Writers, filmmakers, musicians, dancers, actors, and visual artists all create metaphors in their attempts to make meaning. But metaphorical thinking is also central to creative thinking in any discipline. The disposition to find and explore comparisons helps historians understand how history can repeat itself, opens the scientist's mind to new ways of approaching a problem, and spurs businesspeople to creative solutions.

This module teaches students techniques for making strange and powerful comparisons. Works of art—themselves rich with metaphor—are used as springboards for launching students into creating their own metaphors. Transfer lessons bring metaphorical thinking to the service of deeper understanding in other areas of the curriculum. Techniques are also introduced that enable teachers to help their students create, extend, and explore metaphors through hands-on activities in painting and puppetry.

The Magic of Making Metaphors
Contents

Before You Start: The Basics for Teachers

Tools and Techniques: Lessons for Students

Resource Materials

Overview

Creativity is the marvelous capacity to grasp mutually distinct realities and draw a spark from their juxtaposition.

—Max Ernst, artist (1891–1976)

What is metaphor?

To see a world in a grain of sand
And a heaven in a wild flower
Hold infinity in the palm of your hand
And eternity in an hour.

—William Blake (1757–1827)

William Blake could have said "the cosmos is in small things," but instead he used poetic metaphors to magically transform our perception of the world. Metaphors make comparisons between two dissimilar things or concepts in such a way that we conceive a new and richer understanding of each. The ability to make metaphors, therefore, is at the center of creative thinking and a powerful teaching and learning tool.

Usually we think of metaphors as a literary device and associate them with poetry or creative prose, as in the poem above. We often use metaphors in everyday language (see sidebar) and appreciate the colorful quality they add to verbal expression.

The nature of the comparison or analogy inherent in a metaphor is what makes it rich with meanings. Hermine Feinstein offers this useful set of terms for breaking down a metaphor such as "My life is a plate of spaghetti." The *topic* of the metaphor is that about which something is being asserted ("life"). The *vehicle* of the metaphor is that to which the topic is being compared ("plate of spaghetti"). The metaphor's *ground* is what the two (topic and vehicle) have in common; the *tension* is their dissimilarity.[1]

The degree of ground, or similarity, and the character of the tension, or dissimilarity, determines whether or not we feel a metaphor "works." For example, in "my life is a plate of spaghetti," one might think the speaker means his or her life is confused, like jumbled, twisted strands of spaghetti; or one might think the speaker is saying his or her life is as humble and commonplace as a plate of spaghetti (as opposed to a gourmet meal). Part of the meaning is dependent on the audience's own associations with spaghetti, and on the context in which the phrase is heard. If you knew that the speaker's life was often very hectic and scrambled, you might find this an apt metaphor, because the ground would seem fitting and the ten-

Metaphors in Everyday Language

Time flies.
That's a feather in your cap.
Hope springs eternal.
What goes around comes around.
You're the cream in my coffee.
That's another kettle of fish.
It's the cat's pajamas.
That idea won't fly.
My thoughts fly to you.
You're the apple of my eye.
That's my Achilles' heel.
Easy as pie.
Don't make me jump through hoops.
She's not playing with a full deck.
Cool as a cucumber.
A stitch in time saves nine.
She's a tornado.
That car is a lemon.
It's raining cats and dogs.

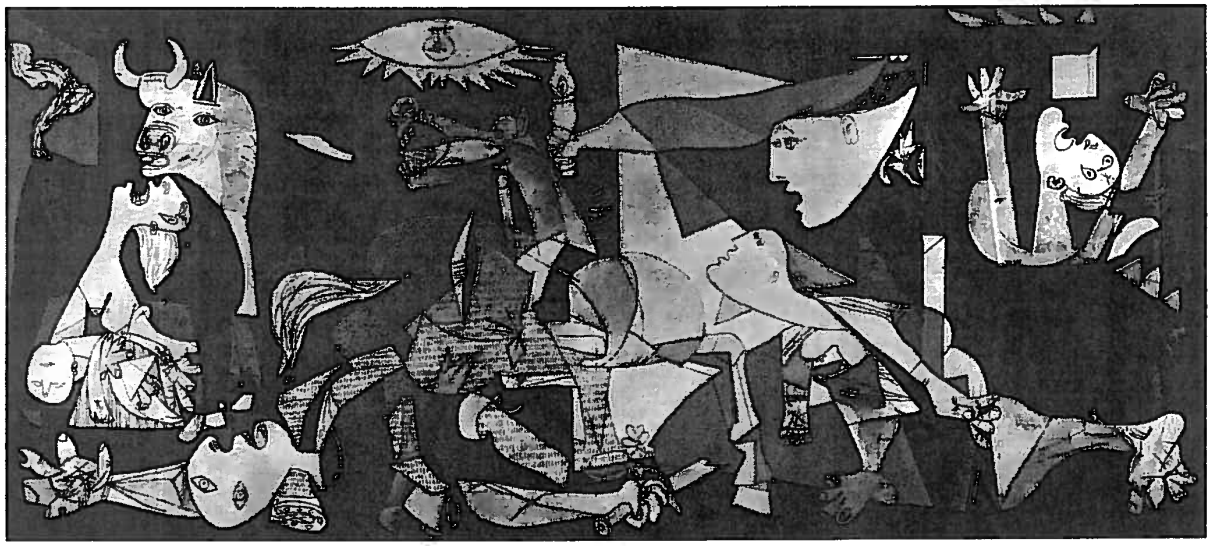
[1] Hermine Feinstein, "Meaning and visual metaphor," *Studies in Art Education* 23/2 (1982): 45–55.

sion would be amusing.

Some metaphors can be categorized by the kinds of comparisons they make. If one wanted to write poetry, one might use *synesthesia,* a technique that describes one sense in terms of another, as in "the morning woke me gently with the yellow and pink songs of birds." *Personification* assigns human or animal characteristics to concepts or inanimate objects: "Prejudice circled the room, looking for a way into the conversation." Comparisons can also be made between the *similar functions* of two dissimilar things; for example, "the eyes are the window of the soul." Metaphors can also be made by looking for similarities between the chosen topic and vehicle in their forms, designs, movements, and emotional moods.

What is the relationship between metaphor and visual art?

Most, if not all, visual art is metaphorical. Visual art creates metaphors through line, shape, and color. Picasso's famous painting *Guernica,* which he painted as a reaction to the bombing of civilians in the town of Guernica during the Spanish Civil War, is a good example. Instead of realistically depicting maimed bodies and broken buildings, Picasso created a fractured composition with distorted imagery as a visual metaphor for the atrocities of war. Even if a viewer did not know the historical background that inspired the painting, the painting evokes strong emotions and a sense of sinister chaos in many viewers.



Although visual art is metaphorical, there can be an important difference between visual metaphors and literary ones. With literary metaphors we know what is being compared to what. In the phrase "evening of life," a time of day is being compared to a period in life. For some artworks, such as *Guernica,* we also know both sides of the comparison, because the artist recorded his specific intention to memorialize a historical event. The title of the artwork also gives us a big clue. In addition, museums and art historians try to illuminate the artist's intentions for the viewer whenever possible. For these artworks, we have a specific sense of what we believe is

"true" about them. This is not the case, however, for all artworks.

What often causes viewers difficulty is the fact that, unlike *Guernica*, only one side of the comparison, the artwork (vehicle), is known.[2] The topic, what the metaphor refers to, can be elusive. This makes interpreting and understanding artworks especially tricky. How can we understand an image if we do not know to what it refers? How will we know if our interpretations are "right" or "true?" Can we really know anything about an artwork if we do not know the artist's intentions or its place in art history?

Many times the artist's intentions are not known to art historians, or the artist may not be clear about his or her intentions. To further complicate matters, artists themselves may not care if viewers "see" something entirely different in their works than what they originally intended, questioning the whole notion of how necessary it is to know the artist's intentions.

Where does that leave us as educators, our goal being to help our students construct meaning from a visual metaphor? In cases where the artist's intentions are not known, or art historical information is scarce, viewers are put in the position of relying on their own knowledge, experiences, and feelings to formulate meaning from the art. This way of understanding a work of art will be different from the way we might understand a work whose background we know, but that does not make it less valid. Indeed, research on learning in museums has shown that often viewers do not remember as much from "lecture-style" tours, which give lots of background information about the art, as they do from a tour that elicits the viewers' responses, asking for their personal interpretations. Of course, viewers may formulate their own interpretations even if they do know the artist's intentions, because each viewer brings his or her own background and sensibilities to perceiving visual imagery. Finding meaning in art, even when we do not know the other half of the metaphorical comparison, is a matter of striking a balance between gaining background information and learning to look carefully and formulate one's own interpretations.

What is the relationship between metaphor and performing art?

Actors often perform verbal metaphors, especially in poetic drama like Shakespeare. When Romeo asks, "But, soft! What light through yonder window breaks?" he launches into a famous metaphor that shows us Juliet through his eyes: "It is the east, and Juliet is the sun!" When Juliet is worried that he might be seen, he reassures her with more metaphor: "I have night's cloak to hide me from their eyes."

But performers also engage in metaphorical thinking when they balance two realities at once in their minds, bodies, and voices. For instance, an actor might perform a scene as if her character were also a horse, her goal being to enrich her portrayal by discovering the similarities and differences between her character's carriage and behaviors and those of a horse. The famous actress Irene Worth did this in her portrayal of Ranevskaya in

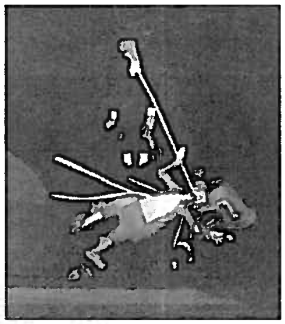
[2] Ibid., 50.

Chekhov's *The Cherry Orchard*. In the last scene, saying goodbye to her home and way of life, she circled the stage again and again, gaining in speed, like a proud show horse in a ring. She was magnificent but also confined and somehow pathetic.

Puppet theater can also be rich in metaphor, presenting visual metaphor in performance. In one of Amy Trompetter's puppet operas, a woman puppet singing of her great love begins to unravel. Her limbs separate and float up, so released is she by her buoyant feelings. In another scene, as a lying man speaks, his tongue stretches out of his mouth and wraps itself like a serpent around his unsuspecting victims. In Underground Railway Theater's satire on consumerism, *Junk*, a chronically unsatisfied shopper has a rainbow coming out of his head. Just when he thinks he has found what he is looking for, his rainbow hooks a more expensive and desirable object that dangles just out of his reach.

Junk by Underground Railway Theater

What do metaphors have to do with higher-level thinking?



La Calumnia Gossip & Tongue by Amy Trompetter

Metaphors engage higher-level thinking by provoking our imaginations to create comparisons between dissimilar things. Look again at the poem by William Blake. Can you actually "hold infinity in the palm of your hand?" From a physical viewpoint, one would say no, because infinity is not a tangible object. But metaphorically, when infinity is a flower, yes, one could hold it. As readers we perceive a new relationship between these two things, and the identity of both is enriched and deepened.

A new relationship/conception may also evoke a new emotional response. The phrase "evening of life," conjures up not only a comparison between time of day and time of life but also a comparison between the sense of closure associated with the evening and the end of one's life. The emotional expressiveness of metaphors adds to their effectiveness.

Effective verbal metaphors say a lot with a few words, because the details of the analogy (exactly how a grain of sand is like a world) are left up to each individual to supply with his or her own imagination and experience. Visual metaphors, such as paintings, function in a similar way. Therefore, metaphors function paradoxically, because they expand our understanding by using only a few words or visual elements.[3]

Why teach metaphor making?

> *If genius has any common denominator, I would suggest breadth of interest and the ability to construct fruitful analogies.*
>
> —from a discussion of Charles Darwin in *The Panda's Thumb* by Stephen Jay Gould

- Making metaphors, and thinking in terms of metaphors, is a key function of creative thinking. Metaphors add poetry to our lives, whether in the form of visual art, performance, or language. Through metaphor we create new relationships and magically transform the way we view the world.

[3] Ibid., 49.

- Making metaphors is an important faculty for problem solving that can be applied to all areas of life. When problems are considered metaphorically, we make analogies between disparate elements or ideas, stimulating new insights and solutions.

- Making metaphors helps students understand unfamiliar subjects by linking them to what they already know.[4]

- Making and examining metaphors personalizes learning. Students develop individual solutions when making metaphors and bring their own experiences to examining and understanding the multiple meanings within a metaphor.[5]

- Effective metaphors are memorable since they often reflect emotional attributes as well as factual attributes.[6]

- Making metaphors expands the usual ways of thinking. According to one teacher in the *Art Works for Schools* program, making metaphors "makes students' thinking more complex, moving them away from the linear and the rigid . . . it's one of the building blocks of tolerance."

- Students need to be given opportunities to flex their metaphor-making muscles to develop their creative thinking. Metaphorical thinking is not limited to those with perceived "talent" or "inborn artistic ability." The notion that creative thinking cannot be learned is a pervasive and unfortunate falsehood that can only be contradicted through practice.

- Metaphorical thinking is not only important for the artist. It is also important for the historian, the scientist, and the mathematician. Darwin spent years carefully studying species' behavior and development, but it wasn't a linear process from this information to his *Origin of Species*. He also read economics and statistics. In fact, it was Malthus's theories of social economics—"the survival of the fittest"—that provided Darwin with his guiding metaphor. His ability to think metaphorically, combined with his great store of knowledge, gave birth to one of modern history's most "fruitful" analogies.

What metaphorical thinking tools does this *Art Works for Schools* module introduce?

Juxtaposition is a technique that helps students create metaphors through making strange comparisons. It is the basis of all metaphorical thinking.

Personification helps students make metaphors by imbuing inanimate objects with human attributes. Both the Juxtaposition and Personification lessons engage language skills—speaking and writing—and optional theater activities.

4 Judith W. Simpson et al, *Creating Meaning through Art: Teacher as Choicemaker* (Upper Saddle River, NJ: Prentice-Hall, 1998), 302.

5 Ibid., 301

6 Feinstein, "*Meaning and visual metaphor*," 49.

Painting provides a means of creating and exploring non-verbal metaphors and experiencing synesthetic or cross-sensory metaphors.

Found-Object Puppetry enables students to create and explore multilayered metaphors through performance.

How does this module differ from the other modules?

The lessons in this module focus on *creating* verbal and visual metaphors through writing, painting, and performance. Students will then examine and explore the metaphors they create to better understand their power and effectiveness.

In contrast to creating and exploring metaphors, *interpreting* metaphors (such as poetry or artworks) involves critical thinking. Please see the modules on reasoning and perspective taking for lessons on interpreting metaphors.

Making Metaphors:

Key Moves and Attitudes

Key Moves

Look for similarities between unusual things, or between things that are opposite or that seem very different.

Go beyond obvious appearances. Look for similarities in what things do or how things operate, hidden structures or patterns, movements, characteristics, or moods.

Mentally put two unlike things next to each other and compare them.

Describe one sense in terms of another.

Describe a non-living thing in terms of human or animal characteristics.

Draw on everything you know about the topic of your metaphor.

Key Attitudes

Be bold and adventurous in your thinking.

Be open to the unexpected. Surprise yourself. Make wild comparisons, find mysterious connections.

Tools and Techniques: Lessons for Students

Strange Comparisons: Making Metaphors through Juxtaposition

Juxtaposition means "to place one thing next to another." Such placement—either in real life, on paper, or in the mind—invites a natural comparison between the two things. When we make metaphors, we compare one thing in terms of another, finding unexpected or unusual similarities. The technique of *deliberately* juxtaposing dissimilar things stretches the mind to find connections it might not normally make, opening the way for metaphors.

Tips for Teaching Juxtaposition

Find lots of ways for students to make careful observations before they start to create metaphors. If students' observations are rich in detail, they will create richer metaphors than if they jump to their first associations. For instance, when they first start to discuss what they observe in an artwork, encourage answers like "gray and white squares, heavy black lines" rather than "refrigerators."

Encourage students to stay closely connected to the topic as they create metaphors. For instance, if they are juxtaposing an artwork with something else, prompt them by using the phrase "*Keeping in mind the characteristics of the artwork,* what kind of (weather, animal, emotion, etc.) would this be?"

Even as they stay connected to the topic, help students think broadly and adventurously while brainstorming juxtapositions.

No comparison is too strange to make! Unexpected comparisons yield the richest metaphors.

Congratulate students when they create powerful metaphors, or when they extend metaphors in such a way that they enrich their meaning.

Lesson 1

Learning Juxtaposition through the Exploration of an Artwork

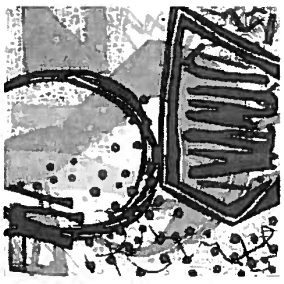
In this lesson, students will be introduced to making metaphors by juxtaposing a work of art with something familiar in order to deepen their understanding of the artwork. An activity sheet provides a structure for prompting metaphorical thinking.

Suitable for older elementary students, adaptable for all ages
50 minutes

Understanding Goals for Students

- A metaphor is a comparison without using the word *like*.
- Juxtaposition is a powerful way to compare two dissimilar things and requires us to stretch our imaginations.
- Making metaphors can change the way we understand an artwork and other subjects.

Materials



- Slide: *Untitled* by William Remick, or a reproduction or slide of a non-representational artwork (a work of art without clearly recognizable objects in it)
- Slide projector and a place to project it if needed
- The Strange Comparisons activity sheet
- Blackboard or chart paper on which to record students' ideas and metaphors
- Copies of the Key Moves and Attitudes sheet

Preparation

- Make enough copies of the Strange Comparisons activity sheet for each student.
- Read over the lesson and the "Tips for Teaching Juxtaposition."

Procedure

Step 1: Get Ready

Five minutes

Ask:

- What does it mean to "stretch one's imagination?"

Young children enjoy performing how they would stretch their imaginations. Try asking them to show you.

With older students, you may want to read some examples of metaphors from "Metaphors from Poets, Writers, and Musicians" in the resources section for this module.

After collecting some answers, explain that the phrase "stretching your imagination" is a *metaphor*, an expression that compares two dissimilar things without using the word *like*. In this case, your imagination, which is something you cannot touch or hold, is being compared to something that you could hold and stretch, such as a rubber band or taffy.

Explain:

- Metaphors can also be expressed without words. Paintings, sculpture, music, and dance are metaphors that use pictures, shapes, symbols, sounds, and movements to make comparisons with other things. For example, a dancer might slowly bend and drop to the floor with her face down as a metaphor for sadness.

Today, students will make metaphors by *juxtaposing* dissimilar things. Juxtaposing means to place one thing next to another. In this case, they are going to place two ideas next to each other and then stretch their imaginations to make a metaphor.

Step 2: View the Artwork

Five to ten minutes

Spend one minute quietly looking at a non-representational artwork (a work of art without clearly recognizable objects in it), such as *Untitled* by William Remick. Ask questions about the artwork in order to give students a thorough understanding of its many attributes.

1. Begin with the basic questions for looking at art, such as:
   - What do you see?
   - What else do you see?

2. Then progress to some of the observation questions, such as:
   - What colors/lines/shapes do you see?
   - Where is the most important thing placed?

3. Finally, ask questions that might begin to invite metaphorical thinking, such as:
   - What would this artwork sound like? Is it loud or quiet?
   - What would it move like if it could?
   - If you could walk into this artwork, what would it feel like? What temperature would it have? What textures?

Step 3: Deepen Understanding

20–25 minutes

Ask:

- Can you think of some broad categories of things, such as vehicles, buildings, food, animals, etc.? Write students' categories on the board.
- Keeping in mind the characteristics of the artwork, what kind of _____ (pick a category) would this be, and why?

Hand out the Strange Comparisons activity sheets.

Introduce and explain the Strange Comparisons activity sheet. Show the Key Moves and Attitudes poster, which will help students think metaphorically.

Ask the students to choose one of the categories on the board, and have them all write it at the top of the left column of their activity sheet. As a group, have them fill in the column based on the questions on the left side of the paper until you feel confident that they understand how the activity sheet works. At the bottom of the column, pull together as many characteristics as possible to make a metaphor sentence.

After doing one metaphor example as a group, ask students to each pick another category and fill in the second and third columns on their own. In order to encourage them to stretch for new and unusual metaphors, tell them that they cannot use the same words that they used to describe the artwork. Prompt students to extend their metaphors to try to be as descriptive as possible.

Step 4: Reflect and Connect

Five to ten minutes

Ask the students to recollect what they have learned about juxtaposition.

- How did their ideas about the artwork change after they juxtaposed it with something else?
- How would they explain making metaphors to someone who did not know what it was?
- How does it feel to make metaphors?
- How could they use juxtaposition in other topics—for example, in science or social studies?

Picture of Practice

Juxtaposition through the Exploration of an Artwork

Using the Strange Comparisons activity sheet.

Linda Cohn's class of fifth graders has just spent ten minutes looking carefully at *Untitled* by William Remick, commenting on its energy, colors, lines, shapes, and mood. They pick two categories for the Strange Comparisons activity sheet: "Toys" and "Instruments." The students pair up and work together on filling it out. Much discussion is generated as the students imagine the artwork as a toy or instrument. Not all of the pairs fill out both categories. One student writes that this artwork would be a "wrestling toy" and would have an attitude like "I'm cool and strong." His metaphor sentence is, "This artwork is a wrestling toy about to punch his opponent." Another student called the artwork a "party maker" that would look like "a machine that shoots out confetti and is very colorful" and would taste like "pizza." A third student compared the artwork to "a box of marbles rolling in paint," behaving like "a large group of hectic kids." The "Instrument" category also generated vivid metaphors: "This painting is a drum set splattered in paint that makes a sound like boom bash spliff splaff crash biff baff clash."

Picture of Practice

Sample activity sheet by a fifth grader.

Strange Comparisons

If this artwork were a _____ (Category),	If this artwork were a Toys (Category),	If this artwork were a Instruments (Category)
it would be a _____ and	it would be a Wrestling Toy and	it would be a Drum set and
sound like or say:	Raar, Grrr Your going down	boom, crash, bang
look like:	Muscular	the player is going wild
behave like or do: (list verbs)	Punch, kick, flexible	sound loud, look big
have an attitude like:	I'm cool and strong	angry, mad all the time
be built like:	Tall, small face, red	flexible
taste like:	sweat	hard rusty, leathery
feel like:	hot sticky	smooth stretchy
Write your metaphor as a sentence (do not use "like" or "as"):	The artwork is a wrestling toy about to punch his opponent.	The artwork is drum set type of instrument produces its notes loud and clear

Picture of Practice

Sample activity sheet by a sixth grader based on *Untitled* by William Remick

Juxtapostion: Strange Comparisons

If this artwork were a *wacky instrument* (*category*),	If this artwork were an *appliance* (*category*),	If this artwork were a *insect* (*category*),
it would be a *navit-colored crayon* and	it would be a *Veg-O-Matic* and	it would be a *big bumblebee* and
sound like or say: a party. "Yahoo! - let's party!"	whirr-chop-chop-whirr-chop-chop	ezzzz
look like: a big crayon made of many colors	whirling blades	big, strong
behave like or do (list verbs): zoom and bounce energetically across the paper	quick spinning motions vegetables flying everywhere	flying up and down, back and forth
have an attitude like: I'm cold.	"I'm fast"	"Stay out of my way."
be built like: lots of little pieces of color pressed together	lots of parts that fit together	a big body with wings
taste like: sweet fruit	mixed vegetables	(no answer)
feel like: smooth	many textures	rough and smooth
Now write your metaphors as sentences (don't use *like* or *as*): This painting is a multi colored crayon zooming around, bouncing from one to the other across the paper saying "Let's party" and leaving a taste in my eyes of sweet fruit.	This painting is a Veg-O-Matic chopping up colors and lines and whirling them together.	This painting is a big bumblebee buzzing and flying up and down and around saying "Stay out of my way!"

Lesson 2

Transferring Juxtaposition to Other Curriculum Topics

Use the technique of juxtaposition to create metaphors in other areas of your curriculum as a way to review topics and deepen students' understanding of them.

Suitable for grades 4 and up
50 minutes

Understanding Goals for Students

- Applying the technique of juxtaposition to a curriculum topic can deepen understanding of that topic.
- Writing, drawing, and performing can deepen understanding of a topic.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- Blackboard or chart paper
- Drawing paper and drawing media (pencils, colored pencils, or markers)
- The Strange Comparisons activity sheet

Preparation

- Decide on a topic from the curriculum to explore with juxtaposition.
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want your students to understand.
- Gather drawing materials, enough for each student. Set them aside until it is time to use them.
- Have the list of categories from the previous lesson available so you can write them on the board.
- Make enough copies of the Strange Comparisons activity sheet for each student.

Procedure

Step 1: Get Ready

Five minutes

Review with students what they have already learned about juxtaposition and metaphor.

Ask:

- What metaphors do you remember from the previous lesson, and why were they powerful?

Step 2: Consider the Topic

15 minutes

Review some of the big ideas in the chosen curriculum topic.

Refer to the list of broad categories that you used in the previous lesson. Choose one or two to compare to the curriculum topic.

Step 3: Deepen Understanding

15–20 minutes

Ask questions that compare the curriculum topic to the category. For example, if they are studying punctuation and the class is using "animals" as a comparison category, ask students "What kind of animal is a comma?" or "What kind of animal is an exclamation point?" and so on. An alternative way of saying this could be to give a choice of two things, such as "Is a comma more like a giraffe or a cat? Why?"

Have students use the Strange Comparisons activity sheet to eventually write metaphors comparing the curriculum topic to the category; for example, "With a quick swipe of its paw, the comma separated the independent clause from the rest of the sentence."

Continue with one or both of the following activities:

Drawing Activity. Hand out the drawing materials and ask students to draw their metaphors. For example, the comma might be drawn as a cat's paw with phrases tumbling around it. When they have completed their drawings, ask several students to share them.

Performance Activity. Choose one of the metaphors as a model to work on with the entire class. For example, for the metaphor "Mountains are the policemen of borders," invite a student to come up and perform how the mountain/policeman would act or what it would say in relation to borders.

Some questions you might ask:

- How can you get into the body of the mountain? (tall, strong . . .)
- How would you stand if you were a mountain/policeman?
- Is there a single mountain or a range? (If there is a range, bring up more students to perform as more mountains.) Where is the border?
- If you are a policeman, what are you trying to keep from happening, or what are you watching out for? People trying to cross over you? Who would they be?

Invite another child up to play a refugee trying to cross the mountain. For scale reasons, maybe a small object—an eraser—becomes the person, climbing over the "mountain." Invite the addition of as many details as possible. "What else do we know about mountains? Are there ever rockslides? What causes them?" That suggests another scene. Call "Curtain down" when you and the class run out of ideas for extending the metaphor through performance.

Step 4: Reflect and Connect

Ten minutes

Help the students reflect on how juxtaposing things led them to better understand the curriculum topic.

Ask:

- How did their ideas about the topic change after they juxtaposed it with something else? What new ideas do they now have about the topic?
- How did drawing and/or performing change their thoughts about their metaphor? What new discoveries did they make as they drew or performed?

Picture of Practice

How One Librarian Adapted Juxtaposition in Her Curriculum

Karen Kosko, a librarian and media specialist, has students create cereal boxes to represent books when creating book reports. She encourages them to develop the metaphor "food for thought" in what they write on the box by asking questions like "What's the promotion? What's the giveaway? What are the ingredients? What's hidden?"

Touchstones for the Juxtaposition Lessons

How to tell if things are going well:

Students make many observations about an artwork or topic before creating metaphors about it.

Metaphors are connected with details in the artwork or topic students are exploring.

Details about the artwork or topic are used to extend metaphors.

There is a feeling of playful creative energy in the classroom during brainstorming sessions.

Students build on each other's ideas.

Students feel free to try out a metaphor and then revise their idea if their exploration leads them to a metaphor they prefer.

Students are comfortable using their bodies and voices to explore metaphors through performance.

During attempts at performance, students are respectful and supportive of each other.

Students seem to understand performances as ways to generate ideas for metaphors, and to explore and extend metaphors. They reflect this through the feedback they offer to fellow students.

Students are comfortable being challenged to push their thinking, to find the most powerful metaphors and to extend them.

Students recognize when they make a new discovery.

Students can articulate why some metaphors are more powerful than others. They can reflect on how particular metaphors help them more deeply understand the artwork or topic being explored.

Juxtaposition becomes a tool students can grasp and use for their own pleasure. They enjoy transferring the creation of juxtaposition metaphors to other subjects.

Coming to Life: Making Metaphors through Personification

There was a child went forth every day,
And the first object he look'd upon, that object he became,
And that object became part of him for the day or a certain part of the day,
Or for many years or stretching cycles of years.

—Walt Whitman, *Leaves of Grass*

A personification metaphor assigns human traits to inanimate things—objects, ideas, emotions, natural phenomena, or any inanimate subject we might want to explore metaphorically. Personification is actually a subset of juxtaposition, in this case comparing something inanimate to something human.

When we create a metaphor through personification, we are comparing an object that is outside our experience with what we perhaps know best: our own personal experiences as a living being. Personification is a powerful tool for developing metaphorical thinking, because it brings to bear both empathy and prior knowledge. We become personally involved with the imagined experience of something outside ourselves. When personification is combined with performance, it enables us to literally move into metaphorical thinking and to inhabit it.

Tips for Teaching Personification

Invite students to think from different angles and consider everything they know. For instance, if a student decides that a tree is an old man, stretch his or her thinking: "What does the tree know, if it is an old man? How does the way the tree holds its branches relate to what an old man would do? How does the tree's gnarly bark relate to an old man's experience?"

Encourage students to think beyond obvious comparisons—they will create richer metaphors.

Use personification as a tool for the explanation, deepening, or assessment of students' knowledge, rather than as an introduction to concepts. The more students know about a subject, the richer their metaphors will be.

Lesson 3

Creating Metaphors through Personification of an Artwork

In this lesson, students compare an artwork with different types of people. They then deepen and extend their metaphors through writing and a theater activity.

Suitable for upper elementary through high school/adaptable for lower elementary
60 minutes

Understanding Goals for Students

- Metaphors can be created through personification, the attribution of human traits to inanimate objects.
- Creating metaphors through personification enables us to move into a subject with our entire selves.
- Making metaphors through personification helps us see things in new ways.

Materials

- Blackboard or chart paper and a marker
- Copies of the Personification of an Artwork activity sheet and pencils for each student (Note: for younger students without writing skills, this lesson can be effectively taught verbally, with notes taken as needed on the board.)
- Slide: *Miami* by Richard Jacobs (Note: Any artwork without recognizable human or animal figures can be used.)
- Slide projector, if needed, and a place to project

Preparation

- Read through the lesson plan.
- Make copies of the blank Personification of an Artwork activity sheet for each student. (See the resources section at the end of this module.)
- Very useful! Look over the student sample of a Personification of an Artwork activity sheet, located in the "Picture of Practice" section directly after this lesson. You might want to give examples from it to help students understand how to use the activity sheet.

Procedure

Step 1: Get Ready

Five minutes

Explain to students that they are going to learn the technique of personification. Personification is a type of metaphor making: it involves making a metaphor by imagining something non-human as having human qualities.

Give examples:

Here are two examples of personification metaphors by students in the third and fifth grades:

"The mountains put the sun to bed."

"The wind is a lost child, moaning and searching for where it belongs."

Ask:

- What makes these metaphors personified?
- What kinds of human qualities do they give to non-human things?
- What new ideas do you get from these personification metaphors?

Step 2: View the Artwork

Ten minutes

In this step, you discuss the artwork as a whole class for a few minutes, and then each student works individually on the questions in the Personification of an Artwork activity sheet.

Show the slide or poster of *Miami* and give students a minute of quiet looking time.

Ask:

- What colors, lines, and shapes do you see?

Collect a few responses, making certain that students are listing their observations ("pink shiny shape," "grey-blue and yellow blotches," etc.). If students offer metaphors or interpretations (for example, "It's a circus!"), appreciate their idea, but then encourage them to return to making observations of what they see.

Stop as soon as you think students get the general idea, but before they have run out of observations.

Pass out the Personification of an Artwork activity sheets.

Ask students to continue to list three or more of their observations under question #1, "What do you see?" and then go on to answer question #2:

Ask:

- What feelings and sensations does this artwork give you?

Give students a few minutes to write and then ask for examples of a few responses for each question.

Go on to answer question #3:

Ask:

- What is the title of this artwork? What do you know about the title?

Brainstorm a few responses. If you use the artwork *Miami*, students might respond with "It's hot," "It's a crowded city," "There are lots of different kinds of people there," etc. Give students time to write down other answers that might occur to them.

Step 3: Deepen Understanding

35 minutes

Go on to questions #4 and #5:

Ask:

- If this artwork were a person, what type of personality might it have?
- What do you see or know about the artwork that makes you say that?
- Do you see any other possible personalities?

Collect some possibilities. Pick one possible personality and explore it further with these questions.

Ask:

- What are three different occupations or roles in life that this artwork might have, if it were this type of person?
- What do you see or know about the artwork that makes you say that? Be dramatic in your descriptions! Use human action verbs, human adjectives, and emotions.

Read examples from the sample activity sheet to illustrate some ways other students have developed these ideas. (It's fine if the artwork used on the student sample is different from the one your students are using. Just tell your students so they'll still find the examples useful.)

Have students finish the activity sheet on their own.

When students are finished, ask for a few volunteers to perform their monologues (question #6 in the activity sheet), preferably while standing next to the artwork.

Optional Activity

More ambitious, and more fun!

Invite students to *improvise dialogues* inspired by the artwork.

Explain:

Choose a scene partner. Both of you stand up next to the artwork, but don't read the monologues you wrote; instead, improvise a dialogue! Get into positions that express the different characters you have created (they will be different, even though you have based them on the same artwork),

and keep in mind what you have written to give you ideas. When you are ready, one of you says "Curtain up." Just start talking and moving—see what comes out. You will probably get new ideas, in addition to the ones you had when you were writing. Say "Curtain down" when you are finished.

Step 4: Reflect and Connect

Ten minutes

Help your students reflect on the big messages of the lesson as they are expressed in the Understanding Goals at the beginning of this lesson.

Ask:

- When during this lesson did you feel an "Aha!" moment—a moment when you saw or felt something in the artwork in a new way?
- How has this activity changed your thoughts and feelings about the artwork? What do you see or feel now that you didn't before?
- Where else in your life—inside or outside of school—would it be interesting to use personification to help you explore something?

Picture of Practice

Fifth-grade student work, based on looking at *Miami,* by Richard Jacobs.

Student Name: ______________________________

Personification of an Artwork activity sheet

1. **What do you see? List three elements in the artwork—shapes, lines, colors, objects—that stand out to you the most. What do you notice about them?**

   yellow and black shape, yellow and brown [illegible] [illegible] shape [illegible] [illegible] sponge [illegible]

2. **What feelings and sensations does this artwork give you? List three feelings and sensations.** (Ask: What are my emotions? What do I hear, smell, taste, touch?)

   [illegible]ed, confused, happy, hyper, [illegible] peaceful

3. **What is the title of this artwork? List three things you know about the title.**

   [illegible] It's hot. A lot of [illegible] live there [illegible] of Cuba. [illegible] a lot of [illegible]

4. **If this artwork were a person, what type of person could it be? List three words to describe the artwork's personality.**

   [illegible], happy, [illegible]

5. **Describe three different things this artwork might do if it were a person, and why.** (occupation, hobby, role in the family or community, etc.) **Be imaginative! Use human action verbs, human adjectives and emotions. Use what you have observed about the artwork.**

   This artwork could be a teenager on vacation because
   teenagers are wild, they like to [illegible] and [illegible] the music.

   This artwork could be a Latina mom because
   a mom ha[illegible] [illegible] activities, she could be [illegible] Latin American music [illegible]

   This artwork could be a Music teacher because
   The painting has different emotions like music [illegible] there are notes in the middle, and there seems [illegible] person in the corner conducting

6. **Make your metaphors act up!** Choose one of your ideas and make your character speak. Write a monologue for your character on the back of this sheet. You can write what the character is thinking, saying or doing . . . or all three!

Then, perform your monologue! And, if you have time, improvise a dialogue between your character and another character created by one of your classmates.

Music Teacher:

I'm conducting a piece with many different emotions. All of the emotions overlap at the same time so it is very hard for my students to understand the piece. It's happy and sad, wild and calm. I have to show all these emotions at the same time. And I am too small to do all of that, so I have to be good, my hands have to be precise. My students are so wild and energetic, that they never sit down and listen. I have to be strong and sweet at the same time.

Lesson 4

Exploring a Topic in the Curriculum through Personification

In this lesson, students compare a topic in the curriculum with different types of people. They deepen and extend their metaphors through writing and theater activity.

Suitable for upper elementary through high school
40–60 minutes

Understanding Goals for Students

- Personification can be used to explore almost any topic.
- The more you extend a personification metaphor, the deeper your exploration and the more personal your connections to the topic.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- Blackboard or chart paper and a marker
- Copies of the Personification of a Topic in the Curriculum activity sheet and pencils for each student

Preparation

- Read through the lesson plan.
- Choose a topic from the curriculum to explore metaphorically through personification.
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want your students to understand.
- Very useful! Look over the student samples of a Personification of a Topic in the Curriculum activity sheet, located in the section directly after this lesson. You might want to give examples from them to help students understand how to use the activity sheet.

Procedure

Step 1: Get Ready

Five minutes

Explain to students that today they are going to make metaphors about a subject they are studying by comparing that subject to different types of people and personalities. As a warm-up, try asking these questions:

Ask:

- What does poetry do for a living?
- How would you describe the personality of a geode?

Hand out the Personification of a Topic in the Curriculum activity sheets.

Point out to students that the more they know about a topic, the richer their metaphors will be. For example, if you know nothing about a geode, personifying one would be difficult. But if you know that a geode is a plain-looking stone with hidden gems, you might personify it as a quiet old man (wise, full of knowledge and hidden insights) or a shy young girl (not ready to venture out and try things, only knowable to those who take the time).

Step 2: Consider the Topic:

Five to ten minutes

Review the topic to be explored. Have students list key facts on their activity sheets and then share some responses.

Step 3: Deepen Understanding:

20–40 minutes

Ask:

- To what type of person might you compare this topic?
- What kind of personality would it have? Talents?
- What kinds of occupations or roles in life could such a person have?
- What do you know about the topic that makes you say that?

Collect some responses. See sample activity sheets, if needed, for examples of student ideas based on other topics. Have students fill out their own sheets, then share their responses. If there is time, as in the previous lesson, have students write and then perform monologues based on the characters from their activity sheets, and improvise dialogues.

Step 4: Reflect and Connect:

Five to ten minutes

Ask:

- How did the creation of metaphors about the curriculum topic help you explore the topic?
- In what ways do you think differently about the topic now?
- What additional questions about the topic come up for you now, as a result of your metaphor making? Where can you go to find some answers?
- What other subjects might you explore metaphorically through personification (examples might include concepts in math or science; in history, you might explore systems, forces, and institutions, such as the economy, slavery, the church, etc.)?

Picture of Practice

Worksheet from a class of fourth and fifth graders.

Sample Activity Sheet: Exploring a Topic in the Curriculum through Personification

Student Name: _____

Exploring a Topic in the Curriculum through Personification activity sheet

What is the subject I am exploring?
Ecosystems

What do I know about this subject? List three things you know.
An ecosystem involves a lot of plants and animals. Many food chains and food webs. If you take one thing out, everything changes.

If this subject were a person, what type of person could it be? List three words to describe the subject's personality.
Serious, notices everything, smart

Describe three different things this person might do, and why. (occupation, hobby, role in the family or community, etc.) In your description, use human action verbs, human adjectives and emotions. Be very descriptive, and go into detail, using everything you know about the subject.

1. An ecosystem (subject being explored) could be a mother (occupation or role in life) because:
She sometimes nose into everything. She knows everything and everybody is her kid.

2. An ecosystem (subject being explored) could be a detective (occupation or role in life) because:
nothing escapes his attention. He is always looking for connections between things.

3. An ecosystem (subject being explored) could be a spy (occupation or role in life) because:
he works in secret, where you least expect it.

Pick one of your ideas, and write a monologue for the character you have created. Use the back of this paper. If there is time, improvise a dialogue with another student's character.

Pick one of your ideas, and write a monologue for the character you have created. Use the back of this paper.
If there is time, improvise a dialogue with another student's character.

Picture of Practice

Worksheet from older students

Sample Activity Sheet: Exploring a Topic in the Curriculum through Personification

Student Name: _____

Exploring a Topic in the Curriculum through Personification activity sheet

What is the subject I am exploring?

What do I know about this subject? List three things you know.

If this subject were a person, what type of person could it be? List three words to describe the subject's personality.

Describe three different things this person might do, and why. (occupation, hobby, role in the family or community, etc.) In your description, use human action verbs, human adjectives and emotions. Be very descriptive, and go into detail, using everything you know about the subject.

1. _____ (subject being explored) could be a Knight in shining armor (occupation or role in life) because:

2. _____ (subject being explored) could be a Sister Teresa (occupation or role in life) because:

3. _____ (subject being explored) could be a space astronaut (occupation or role in life) because:

Pick one of your ideas, and write a monologue for the character you have created. Use the back of this paper. If there is time, improvise a dialogue with another student's character.

Pick one of your ideas, and write a monologue for the character you have created.
Use the back of this paper.
If there is time, improvise a dialogue with another student's character.

Picture of Practice

How One Teacher Adapted Personification for Younger Students

Second-graders are engaged in an integrated unit about the moon. The children view slides of two different artworks, each one a portrait of a full moon. The first one shows the black silhouette of a town, with a white full moon in a starless sky and rose-tinged, puffy clouds. The children list what they observe and then are asked questions that invite personification: "Imagine that the moon in this painting (not any other moon, but this moon) is a person. What is it doing?" ("This moon is sleeping.") "What do you see that makes you say that?" ("The clouds are its pillows.") What would this moon eat? ("Cotton candy.") "Imagine that the moon is a teacher. Who is it teaching?" ("If this moon was a teacher, it would be teaching the stars hiding in their desks.") ("It is teaching the people to sleep. It's reading a bedtime story.") "If this moon were a child, how would it feel?" ("Sad.") "Why?" ("Because there is no one to play with him.")

The children are brought into a circle, and they list the ways in which the moon affects their lives. Some answers are based on scientific knowledge ("creates the tides"), some on experience ("lights the night"), some are more personal ("keeps us company at night"). "Now, imagine the moon as a person doing important work. Who would that moon be?" Suggestions include a fisherman and a mother. "Now let's find out more about our metaphors by becoming these people!" Everyone pretends to be the moon as a fisherman, pulling in the tides; it's clear from trying to do it that it requires a lot of force. A girl volunteers to be the moon as a mother, and the class works with her to build a scene, guided by prompts from the teacher. "What is the moon doing?" ("Washing the dishes.") "If these were the moon's dishes, what would they be?" "The planets!" "Can any of you be the planets?" After children volunteer, she continues. "What else is the moon-mother doing?" ("Trying to put her children to bed.") "And who are her children?" ("The stars!") More children join the scene. "How does the moon-mother put her children to bed?" ("By pulling the clouds over them!") They try this. ("And the sun is her husband!" "He is at work being the day somewhere else!")

Children reflect: "What I got [from Anna's performance] was that there are lots of ways the moon can be a mother." "I liked the way she turned the stars and the planets into her family." A follow-up writing assignment for their moon journals is discussed: write a thank-you letter to the moon for the work it does for us.

Touchstones for the Personification Lessons

How to tell if things are going well:

Students make many observations about an artwork or topic before creating metaphors about it.

The details in the artwork or topic being exploring are connected to the personification metaphors created.

Details about the artwork or the topic are used to extend metaphors.

There is a feeling of playful creative energy in the classroom during brainstorming sessions.

Students build on each other's ideas.

Students feel free to try out a metaphor and then revise their idea if their exploration leads them to a metaphor they prefer.

Students are comfortable using their bodies and voices to explore metaphors through performance.

Students are respectful and supportive of each other's attempts at performance.

Students seem to understand performances as ways to generate ideas for metaphors and to explore and extend metaphors. They reflect this through the feedback they offer to fellow students.

Students are comfortable being challenged to push their thinking, to find the most powerful metaphors and to extend them.

Students recognize when they make a new discovery.

Students can articulate why some metaphors are more powerful than others. They can reflect on how particular metaphors help them to more deeply understand the artwork or topic being explored.

Students recognize personification in other contexts in literature and art.

Personification becomes a tool students can grasp and use for their own pleasure. They enjoy transferring the creation of personification metaphors to other subjects.

Creating and Exploring Metaphors through Painting

Almost all artworks are visual metaphors because they represent "one kind of thing in terms of another."[6] Human experiences can be metaphorically distilled into paintings or sculpture, as well as dances, music, or puppets. Using art materials to make metaphors adds multiple dimensions to creative thinking. Instead of using words to describe a metaphorical comparison, students may explore visual elements (lines, shapes, colors, light, and composition) and tactile materials (paint, clay, etc.) to create unique metaphors. Becoming sensitized to the metaphorical potential of these elements helps students interpret the world they see as well as express their own sensibilities in complex and rich ways.

In this module, students will create and explore metaphors through the nonverbal expression of painting.

[6] George Lakoff and Mark Johnson, *Metaphors We Live By*, Chicago: University of Chicago Press, 1980, p. 5.

Tips for Teaching Metaphorical Thinking through Painting

When students share their paintings, create a non-judgmental atmosphere in the classroom. Visual metaphors can be highly individual and not necessarily easily understood by others—there are no "wrong" answers to this lesson.

Help students recognize that the most powerful visual metaphors have a specific, expressed relationship with the topic being explored.

Review these basic painting techniques before teaching the lesson, and be sure to demonstrate them to your students if they are unfamiliar with them.

> Wet-on-wet: the entire sheet of paper is dampened first with a sponge, and then the watercolor is applied with a brush or sponge. This makes the overall effect runnier.
>
> Wet-on-dry: the paper is left dry, and the wet watercolor is applied with a brush or sponge. This makes the overall effect more distinct.

Go over the basic art materials and clean-up instructions with students before you begin the lesson.

Lesson 5

Creating and Exploring Metaphors through Painting

In this lesson students will be sensitized to the possible metaphorical meanings of lines, shapes, and colors, and create visual metaphors for a word and for music.

Suitable for kindergarten and up
50–60 minutes

PLEASE NOTE: This lesson assumes that students have already had exposure to using tempera or watercolor paints and know the basics of using a brush and paints. This lesson may easily be divided into two parts.

Understanding Goals for Students

- Basic elements of art can be metaphors.
- Representing a word as an image gives new insight into the word.
- Something auditory, like music, can be represented as a visual metaphor.

Materials

- Large (at least 9 x 12") sheets of paper suitable for painting, one or two sheets per student
- Paintbrushes, one for each student
- Tempera or watercolor paints, at least three colors per table of students
- Cups or tin cans of water for cleaning brushes between using each color, one for each student
- Newspaper to protect working surface
- CD or cassette tape player
- CD or cassette tape of music without words (classical, world, jazz, new age), at least 20 minutes long

Preparation

- Read the lesson and decide if you want to teach it in two parts or not.
- Choose two words that evoke an emotion or particular energy, such as "bored" or "surprised" for the children to paint.
- Cover the tables where the students will be working with newspaper.
- Have the CD ready or the cassette forwarded to a beginning point.
- Keep all art materials on a table separate from the students' tables until it is time to use them.
- Find a place in the classroom where paintings can be put to dry.

Procedure

Step 1: Get Ready

Five minutes

Ask:

- What were some of the metaphors you created in our last lesson?

Remind students about these metaphors, pointing out how they found creative ways to compare one thing to another. Explain that in this lesson they are going to have fun using lines, shapes, and colors to create metaphors instead of words.

Go over the "Key Moves and Attitudes for Making Metaphors."

Step 2: Consider the Topic

15 minutes

Draw two kinds of lines on the blackboard (one straight horizontal line and one squiggly diagonal line) and several shapes: a square, an irregular "blob" using curving lines, and an irregular shape with many angles on it.

Ask:

- Which line feels like it has more energy, and which one feels quiet?
- How do the different shapes make you feel?
- Which shape feels harder, and which shape feels softer?

List names of colors on the blackboard.

Ask:

- How does each color makes you feel?
- What emotions do we associate with it?

Write student's responses next to the color on the board. You could prompt students with some common phrases about colors: "I'm blue because I lost my favorite toy. She was green with envy over Sara's new dress. My dad saw red when he found out my older brother had wrecked the car."

Remember: There are no right or wrong answers to any of these questions. The idea is to raise each student's awareness of how a particular line, shape, or color makes him or her feel.

Step 3: Deepen Understanding

20–40 minutes

Explain to the students that they will create a metaphor for a word using paint. They will choose one of two words that you write on the blackboard.

Ask:

- I want you to think about how to show the energy or spirit of the word you choose using just lines, shapes, and color. Don't paint a picture of a thing, paint how the word feels.
- What color would your word be?

- What kind of movement does it have?
- What kinds of lines and shapes would it be? Jagged, flowing, soft, hard?

Hand out the art supplies, remind them about the proper use of brushes, and review basic painting techniques. Write the two words you chose on the blackboard.

Give them five to ten minutes to paint. Remind them again that you want them to capture the energy or feeling of the word using just lines, shapes, and colors.

Ask four students to share their paintings, two students for each of the two words. Then ask all those who painted one of the words to stand and hold up their paintings (being careful not to drip) or students can walk around to each table and view each other's work. Ask students to look for similarities between the paintings and to name some of them. Repeat this process for everyone who painted the other word.

Stop here if you want to break this lesson into two parts. Go to the Reflect and Connect section and ask relevant questions from that section. If you continue, have students move their first painting to the drying area and prepare for the next painting.

Add the music:
Before the students start painting again, start playing the music. Direct the students to close their eyes and listen to the music for two minutes, paying attention to any feelings they have or things they imagine as they listen.

Ask:
- What kinds of sounds do you hear? How do they make you feel?
- What kinds of lines, shapes, or colors would you use to represent your feelings?

Replay the music and direct the students to listen to and paint the music and their reactions to it using only lines, shapes, and colors. Remind them that they may want to listen for a few seconds before beginning to paint. Play the music for ten minutes.

Have students clean up and wash out their brushes when they have finished.

Repeat the sharing process.

Step 4: Reflect and Connect
Ten minutes
Ask :
- What new thoughts or feelings did you discover about the word or music as you tried to paint a metaphor for it?
- Are there any paintings that you think are especially effective as metaphors for the words? For the music?

- What parts of this activity were difficult, or easy? How did your thinking change as you painted?
- When else might it be useful to make a painting as a metaphor to help you understand something?

Review the Understanding Goals listed at the beginning of this lesson.

Picture of Practice

How One Art Teacher of Younger Students Adapted Drawing Metaphors into Her Curriculum.

Art specialist Kathleen Cafferty of the Graham and Parks School in Cambridge, Massachusetts, finds when working with first graders that it is better to use the word "match" than "comparison" with her students.

"When we make artwork, we're making matches between the kinds of lines and shapes and colors that we make and the person or things, or sometimes the feeling or mood, that we're painting. So, for instance, when we're making a painting of a person's hair, we might look at the soft fuzzy quality of hair and make a fuzzy line with our paint. We can also make matches with words, the way we did when we looked at a painting, and we said one shape was a window shade and another was a lamp."

She directed her students to draw softly with their oil pastels when the sounds were soft and slow, and to press down hard when the sounds were loud. She also encouraged them to paint how the music made them feel. Before she gave them paper, she did a demonstration drawing.

In another class Ms. Cafferty asked the children to move their hands in response to how their bodies moved with the music. "I thought their bodies would tell them, in a more direct way, how the music made them feel, and that this would lead to a more expressive drawing."

"You can also make metaphors with your bodies, like when you chose a shape and pretended that it entered your body and made you move a certain way. By making these matches between different things, we can make discoveries about things. We can see things in different ways and understand things differently. So metaphors, or making matches between different things, is not only fun, it's useful in helping us learn about things. For instance, when Priya pretended that she was moving like the little round shape in the painting, she began slowly moving upwards and discovered that that shape seemed to be floating through the air."

Lesson 6

Painting Metaphors across the Curriculum

Making visual metaphors for big understandings in your curriculum can help reinforce them in a creative way.

Suitable for grades 3 and up
50 minutes

Understanding Goals for Students

- Making visual metaphors about something students already know can deepen their understanding of the topic.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- Large (at least 9 x 12") sheets of paper suitable for painting, one sheet per student
- Paintbrushes, one for each student
- Tempera or watercolor paints, at least three colors
- Cups or tin cans of water for cleaning brushes between each color, one for each student
- Newspaper to protect working surface

Preparation

- Choose a topic from the curriculum (see Step 1 for examples).
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want your students to understand.
- Cover the tables with newspaper where the students will be working.
- Keep all art materials on a table separate from the students' tables until it is time to use them.
- Find a place in the classroom where paintings can be put to dry.

Procedure

Step 1: Get Ready

Five minutes

Ask:

- How did you use lines and color to create metaphors in our last lesson?

Explain to the class that today they will be making metaphors for a topic that they have been studying, and tell them the topic. (Examples: supply and demand in economics, the process of evaporation, many factors influence historical events, the functions of different parts of a sentence.)

Review how they used the elements of visual expression in the previous lesson to show motion, stability, rhythm, and emotions.

Step 2: Consider the Topic

Five to ten minutes

Review what the students know about the topic, being sure to focus on the energy, rhythms, or processes needed by or involved in the topic. For example, if the topic is supply and demand in economics, think about the "pull" that demand for a product creates in the market. If the topic is evaporation, think about the transfer of energy that happens from the liquid to the gaseous state, especially if heat is applied. Brainstorm a list of what they know.

Ask:

- What do you know about this topic? What processes are involved?

You might want to have the class act out the implied movement or energy before painting.

Step 3: Deepen Understanding

15–20 minutes

Hand out the painting materials.

Direct the students to paint an abstract metaphor for the topic, being careful not to paint a diagram, typical symbol, or representational picture of it. Focus on the energy and rhythms implied in the concept.

When they are finished, have students share their paintings.

Ask:

- How did you show the topic in your painting?
- Are there elements in any of your classmate's paintings that you think are particularly powerful or effective for conveying the topic?
- Does anyone notice similarities between several paintings? What do the similarities help reveal about the topic and its nature?

Be sure to point out different ways that students conveyed the same idea.

Step 4: Reflect and Connect

Five minutes

Ask:

- How did your thinking change as you painted? Was it easy or difficult to paint a metaphor for the topic?
- When you looked at others' paintings, what new things did you learn?
- Will this help you remember the topic?

Review the Understanding Goals for the lesson.

Picture of Practice: Painting Metaphors of a Science Topic

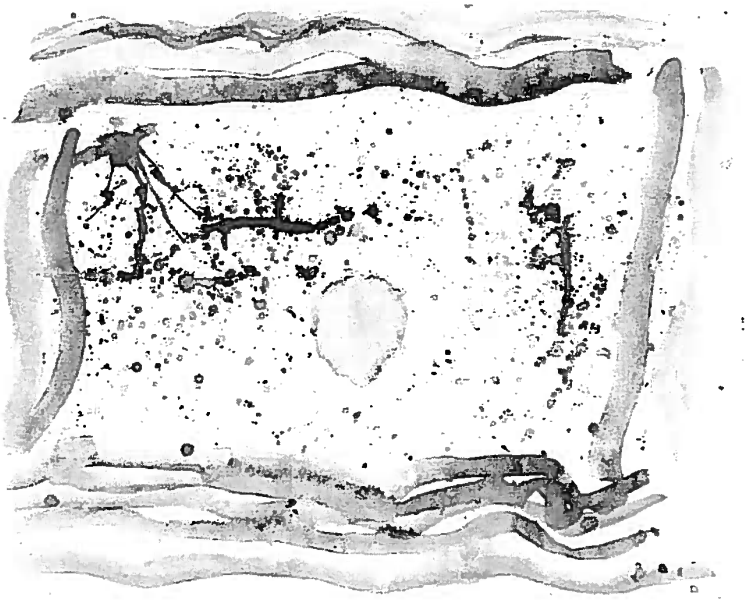
Linda Cohn's class is studying magnetism. She asks:

- What do you know about magnetism?

The students discuss repulsion and attraction, and several pairs of students volunteer to act out both kinds of energy. Two students turn their backs to each other and "repulse" away from each other, then turn around and "attract" each other. The class is then directed to paint the energy of magnetism. "Can we paint pictures of magnets?" asks one student. "No, I want you to paint the energy of attraction or repulsion," Linda answers.

- What might magnetism look like using lines, shapes, and colors?

The students are deeply engaged in painting for ten minutes and are eager to share their paintings afterwards. Their paintings are colorful and full of lines. Several have indicated, with simple, abstract shapes, magnets on either side of their paper, but with the central part of their paper indicating energy waves of attraction and repulsion.



Touchstones for the Creating and Exploring Metaphors through Painting Lessons

How to tell if things are going well:

Students feel free to free-associate with the music or words and to explore metaphorical possibilities. They feel comfortable trying many possibilities.

There is a feeling of playful creative energy in the classroom.

Students feel free to try out a metaphor with paint and then revise their ideas if their exploration leads them to ideas they prefer.

Students are comfortable being challenged to push their thinking. Students recognize when they make a new discovery.

Students can articulate why some metaphors are more powerful than others and help them to more deeply understand the word, music, or topic being explored.

Students enjoy transferring the creation of painting metaphors to other subjects. It becomes a tool they can grasp and use for their own pleasure.

Creating and Exploring Metaphors through Found-Object Puppetry

Most people think of a puppet as a miniature human being—a doll. But almost anything can be animated. The basic impulse of the puppeteer—and the child—is to imbue found objects with life. This makes puppetry an excellent tool for exploring and practicing metaphorical thinking.

Performing with objects, the puppeteer can create a puppet character that is a metaphor for human experience. But puppetry can also be used to create a metaphor for many other things: an idea, a concept, or an institution. In the process of making a found-object puppet, the puppeteer might engage both juxtaposition and personification as part of his or her creative thinking. Through performances with the puppet, that metaphor can be extended, developed, and explored more deeply.

Tips for Teaching Metaphorical Thinking through Puppetry

Think of puppets as performing objects or sculptures, rather than as miniature people. Anything can become a puppet if it is only animated—brought to life through movement and voice—by the puppeteer.

When creating a performance with puppets, it is best to first improvise physically with the puppet in hand before writing a script on paper. Playing with the object will often lead a student to the best ideas! If a script is written down before any hands-on improvisation, the movement possibilities of the puppets—and therefore some of the puppets' metaphorical possibilities—often remain unexplored.

Lesson 7

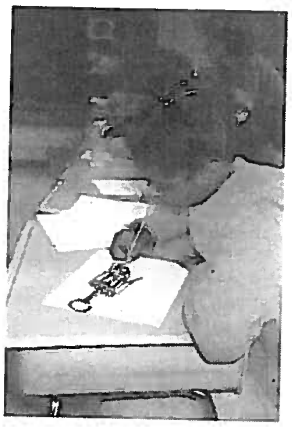
Found-Object Puppets as Metaphors

In this lesson, students will use found objects to create a puppet metaphor for a person.

Suitable for grades 3 and up/adaptable for any age
45 minutes

Understanding Goals for Students

- Using metaphorical thinking, you can turn almost any object into a puppet.
- Metaphors can be extended and explored through puppet performance.
- Creating a found-object puppet helps you see the object with new eyes.



Materials

- A number of inviting objects, probably brought from students' homes, and enough for each child to have several to choose from—almost anything works, although it's best when the objects are interesting and resonant; for instance, an umbrella, kitchen tools, or an old wrench invite richer possibilities than a ripped magazine
- Copies of the Creating a Found-Object Puppet activity sheet, found in the resources section of this chapter
- The completed sample activity sheet and an eraser to use as an example of student work

Preparation

- Read through the lesson.
- Review the sample activity sheet at the end of the lesson for examples.
- If students are sharing objects, lay them out on a long table.

Procedure

Step 1: Get Ready

Five minutes

Ask:

- What is a puppet?
- What do you think a "found-object puppet" could be?
- Have any of you ever transformed objects into people? Have you seen it done?

Explain that students are going to transform objects into puppets by thinking about them metaphorically.

Briefly review metaphor as needed, referring to the "Key Moves and Attitudes" poster and/or to earlier lessons the students have experienced.

Step 2: View the Found Objects

Five minutes

Have the students explore the objects.

Pass out the Creating a Found-Object Puppet activity sheet.

Go to Step One of the activity sheet. Have the students identify an object that interests them and that they think would make an interesting found-object puppet.

Step 3: Deepen Understanding

30–45 minutes

Go to Step Two of the activity sheet.

Ask:

- What does your object do? How does it do it?

Using the eraser and the sample activity sheet at the end of this lesson, model some examples given by other students. Have students contribute answers for their own objects.

Give students a few minutes to complete Step Two of the activity sheet.

Explain that now, in Step Three, they will be making some strange comparisons by engaging in juxtaposition.

Ask:

- If your object were an emotion, what kind of emotion could it be? Why?
- If this eraser were a way of thinking, what could it be? Why?

Collect a few responses. Model some answers from the sample activity sheet. Let students answer Step Three on their own activity sheets.

Explain that now students are going to be personifying their objects.

Ask:

- If your object were a person, what might it be or do (occupation, hobby, family role, etc.)?
- What kind of personality could it have?

Collect a few responses, model the example, and let students write answers to Step Four on their own.

Ask:

- How can you put together as many of your ideas as possible to create your puppet character?

Share the sample activity sheet answer for Step Five and collect some possible responses from students. Give them a few minutes to complete Step Five on their own.

Students should move their puppets as they think—it will give them ideas!

When they are finished, they should find a place to improvise and rehearse a one-minute performance for their puppets.

Share the performances.

Step 4: Reflect and Connect

Five minutes

Help students reflect on the big messages of the lesson as they are expressed in the Understanding Goals.

Ask:

- What was enjoyable about creating the found-object puppet? Challenging?
- Which puppet performances gave you an "Aha!" moment about the object?
- What other objects can you imagine using to create found-object puppets?

Picture of Practice

Sample activity sheet from a fifth grade student.

Student Name: Eliza

Creating a Found-Object Puppet activity sheet

Step 1:
Choose an object that interests you.
Anything can be a puppet! It should not be anything like a person or an animal. What is it?
An eraser

Step 2:
Collect all the information you can about this object.

What does it do? How does it do it?
erases, cleans, slide along the blackboard, gets pushed, can be used for eraser tag, gets dirty.
How does it move?
slides, flies, bounces, glides.

What does it look like and sound like?
soft and hard, has texture, dirty

Tips for Steps Three, Four and Five:
- *Base your answers on what the object does, how it moves, and what it looks and sounds like.*
- *Move your object as you think; that will give you ideas!*

Step 3:
Make strange comparisons using your object! (Otherwise known as *juxtaposition*.) Choose any two of the comparisons below that you like, and complete the sentences for your object;

If my object were an emotion, it would be grief and fear because it wipes away memories and erases information and clues.

If my object were a moment in history, it would be _____ because _____.

If my object were a school subject, it would be _____ because _____.

If my object were a way of thinking, it would be forgetful, soft, and quiet because it erases and because an eraser makes a little sound.

Step 4:
Imagine your object as a person! (Otherwise know as *personification*.)

If my object were a person, what type of personality might it have? List three words or phrases.

1. neaty
2. yearful
3. busy

If my object were a person, what could my object do or be, and why?

1. This eraser (subject being explored) could be a janitor (occupation or role in life) because: it cleans.
2. This eraser (subject being explored) could be a criminal (occupation or role in life) because: it erase its face. erases the evidence, work quietly.
3. This eraser (subject being explored) could be a mom (occupation or role in life) because: it always clean up after every body.

Step Five:
Bring your object puppet to life!

- Review! Look over all your answers for Steps One-Four, and choose which ones you like the best.
- Explore! Ask yourself these questions, while you play with your puppet. Build on your ideas! Take notes here, to help you:

  What is my puppet's name?
  Ralph
  What kind of voice does it have?
  High and Slipper.
  How does my puppet move?
  Smoothly, quickly
  What does my puppet do?
  [illegible]
  What does my puppet know? Care about? See, feel, hear, smell?
  [illegible] clean, smooth board
  Does my puppet stand for anything? If so, what? dust people erasing

- Improvise! Create a short performance, about one minute long. During that minute, your puppet will:

  Introduce itself by name.

  Show and talk about what it does, and why.

  End the scene.

If there is time, improvise a scene with another puppet character!

Exploring the Curriculum through Puppetry

This is a two-part lesson that includes homework. In the lesson, students create found-object puppets to metaphorically explore a topic in the curriculum.

Suitable for upper elementary through high school/adaptable for any age
90 minutes, over two days

Understanding Goals for Students

By creating and performing a puppet metaphor about a topic, you can:

- Review and assess your own learning about the topic.
- Reflect more deeply on the topic.
- Make new discoveries about the topic.
- Find poetry in the topic.
- Teacher: Add your own Understanding Goals specific to your subject matter.

Materials

- A variety of objects chosen for their relationships to the topic, ideally brought in on Day 2 by students as a homework assignment
- Sample activity sheets to use as examples
- Blank Creating a Found-Object Puppet to Explore a Topic activity sheets

Preparation

- Read through the lesson and the sample activity sheets.
- Choose the topic in the curriculum to be explored. This could be any one of a number of things, including but not limited to:
  - A period of history (the Colonial era, Ancient Egypt)
  - A work of literature (a novel, poem)
  - A culture (particularly one with a rich tradition and history)
  - A scientific law, process, or concept (a season of the year, gravity, decay, evolution)
  - A mathematical concept or function (infinity, division)
  - An idea, concept, or emotion (freedom, time, love)
- Decide what your subject matter Understanding Goals are for this lesson. Word them as explicit statements of what you want your students to understand.

Procedure

Day 1

Step 1: Get Ready

30 minutes

Reflect on the experience of the previous lesson, remembering how it felt to create found-object puppet characters that were metaphors. Explain that students are going to create puppet metaphors to explore a topic in the curriculum.

Ask :

- What do we know about this topic?
- What objects can you collect that relate to this topic?

Brainstorm ideas. For instance, if the topic is:

- **A period of history,** discuss what objects or artifacts were used at the same time, or that represent something significant about that era. (For the Colonial era, it might be parchment paper, a crown, or a quill pen.)
- **A work of literature,** discuss objects the characters might use, or that may somehow represent the characters, action, or setting. (In *Romeo and Juliet*, characters might be represented by an article of clothing. Perhaps each family might be cast as a distinct set of related objects, such as shoes and gloves. A knife, sword, sealed letter, or bottle of poison are objects key to the plot. A rose relates to a line from the famous balcony scene: "A rose by any other name would smell as sweet.")
- **A culture,** discuss objects that are unique and expressive. (A scroll or a fan, for example, could represent Japan.)
- **Science,** discuss objects that either alone or in relation to each other might express the chosen law, process, or concept. (Several tomatoes in a bag might discuss among themselves how one's decay is affecting another's.)
- **Math,** discuss objects that either alone or in relation to each other might express the concept or function. (For "division," a student might bring in a navel orange, a pie server, or a mancala board.)
- **An idea or concept,** discuss a wide a variety of illustrative and resonant objects. (For "time," you might choose a rocking chair, a mirror, a metronome, etc.)

As homework, have students select and bring in one or more objects related to the topic.

Day 2

Step 2: View the Found Objects

Five minutes

Have students share and explore their objects.

Pass out the Creating a Found-Object Puppet to Explore a Topic activity sheets.

Go to Step One of the activity sheet. Have the students identify their objects.

Step 3: Deepen Understanding

45 minutes

Go to Step Two of the activity sheet.

Ask :

- What does your object do, and how?
- How does your object relate to the topic?

Have students contribute answers for their objects. Using a sample activity sheet at the end of this lesson, model some examples given by other students.

Give students a few minutes to complete Step Two of the activity sheet.

Explain that now, in Step Three, they will be making some strange comparisons by engaging in juxtaposition.

Ask:

- If your object were an emotion, what kind of emotion could it be? Why?
- If your object were a way of thinking, what could it be? Why?

Collect a few responses. Model some answers from the sample activity sheet. Let students answer Step Three on their own activity sheets.

Explain that now students are going to be personifying their objects.

Ask:

- If your object were a person, what might it be or do (occupation, hobby, family role, etc.)?

Collect a few responses, offer an answer from the sample activity sheet, and let students write answers to Step Four on their own.

Ask:

- How can you put together as many of your ideas as possible to create your puppet character?

Share the sample activity sheet answer for Step Five and collect some possible responses from students. Give them a few minutes to complete Step Five on their own.

When they are finished, they should find a place to improvise and rehearse a one-minute performance for their puppet.

Students should move their puppets as they think—it will give them ideas!

Share the performances. If there is time, let students work together to improvise scenes between their puppets.

Step 4: Reflect and Connect

10 minutes

Help students reflect on the big messages of the lesson as they are expressed in the Understanding Goals.

Ask:

- What was enjoyable about creating the found-object puppet? Challenging?
- Which puppet performances gave you an "Aha!" moment about the topic?
- Can you imagine creating a puppet play using these objects as puppets? Which puppets would be in what scenes together? What would the setting be? What would the dramatic conflict be?
- What other objects can you imagine using to create found-object puppets about this topic?

Picture of Practice

Sample Activity Sheet: Creating a Found-Object Puppet to Explore a Curriculum Topic

Student Name: [illegible]

Creating a Found-Object Puppet to Explore a Curriculum Topic activity sheet

[illegible]

Step 1:
Choose an object that has to do with a topic you are exploring.
Anything can be a puppet! It should not be anything like a person or an animal. What is it?

Quill pen

Step 2:
Collect all the information you can about this object.

What does it do that relates to the topic? How does it do it?

[illegible] of Independence

How does it move?

Graceful & light

What does it look like and sound like?

[illegible]

Tips for Steps Three, Four and Five:

- *Base your answers on how your object relates to the topic, what it does, how it moves, and what it looks and sounds like.*
- *Move your object as you think; that will give you ideas!*

Step 3:
Make strange comparisons using your object! (Otherwise knows as *juxtaposition.*) Choose any two of the comparisons below that you like, and complete the sentences for your object;

If my object were an emotion, it would be brave because it shows it's tall.

If my object were a moment in history, it would be _____ because _____.

If my object were a way of thinking, it would be decisive and strict because it was [illegible] (not decisive) when it fall. Scratchy like feather writing paper, dramatic because it waves as it [illegible] over.

Step 4:

Imagine your object as a person! (Otherwise known as *personification.*)

If my object were a person, what type of personality might it have? List three words or phrases.

1. elegant
2. [illegible]
3. [illegible]

If my object were a person, what could my object do or be, and why?

1. This quill pen (subject being explored) could be a [illegible] (occupation or role in life) because: it [illegible] and proud and [illegible] the [illegible].
2. This quill pen (subject being explored) could be a teacher (occupation or role in life) because: it [illegible] about [illegible] facts.
3. This quill pen (subject being explored) could be a parent (occupation or role in life) because: it [illegible] town.

Step Five:

Bring your object puppet to life!

- Review! Look over all your answers for Steps One-Four, and choose which ones you like the best.
- Explore! Ask yourself these questions, while you play with your puppet. Build on your ideas! Take notes here, to help you:

  What is my puppet's name?
  Max

  What kind of voice does it have?
  low, deep

  How does my puppet move?
  gracefully, [illegible]

  What does my puppet do?
  [illegible] for the country through ideas. teaches [illegible]

  What does my puppet know? Care about? See, feel, hear, smell?
  He was [illegible] about and care about [illegible]. He sees the [illegible], feel the paper [illegible] the [illegible]

  Does my puppet stand for anything in relation to the topic I am exploring? If so, what?
  Yes, it stand [illegible] rights

- Improvise! Create a short performance, about one minute long. During that minute, your puppet will:

  Introduce itself by name.
  Show and talk about what it does, and why.
  End the scene.

If there is time, improvise a scene with another puppet character!

Picture of Practice

Sample Activity Sheet: Creating a Found-Object Puppet to Explore a Curriculum Topic

Student Name:

Creating a Found-Object Puppet to Explore a Curriculum Topic activity sheet

Step 1:
Choose an object that has to do with a topic you are exploring.
Anything can be a puppet! It should not be anything like a person or an animal. What is it?

Step 2:
Collect all the information you can about this object.

What does it do that relates to the topic? How does it do it?

How does it move?

What does it look like and sound like?

Tips for Steps Three, Four and Five:

- *Base your answers on how your object relates to the topic, what it does, how it moves, and what it looks and sounds like.*
- *Move your object as you think; that will give you ideas!*

Step 3:
Make strange comparisons using your object! (Otherwise knows as *juxtaposition.*) Choose any two of the comparisons below that you like, and complete the sentences for your object:

If my object were an emotion, it would be Love because

If my object were a moment in history, it would be the fall of the because

If my object were a way of thinking, it would be thinking many thoughts because

Step 4:
Imagine your object as a person! (Otherwise known as *personification.*)

If my object were a person, what type of personality might it have? List three words or phrases.

1. [illegible]
2. Wet bossy
3. -asing

If my object were a person, what could my object do or be, and why?

1. This [illegible] could be a [illegible] because:
   (subject being explored) (occupation or role in life)
2. This [illegible] could be a [illegible] because:
   (subject being explored) (occupation or role in life)
3. This [illegible] could be a [illegible] because:
   (subject being explored) (occupation or role in life)

Step Five:
Bring your object puppet to life!

- Review! Look over all your answers for Steps One-Four, and choose which ones you like the best.
- Explore! Ask yourself these questions, while you play with your puppet. Build on your ideas! Take notes here, to help you:

  What is my puppet's name?
  [illegible]
  What kind of voice does it have?
  [illegible]
  How does my puppet move?
  [illegible]
  What does my puppet do?
  [illegible]
  What does my puppet know? Care about? See, feel, hear, smell?
  [illegible]
  Does my puppet stand for anything in relation to the topic I am exploring? If so, what?
  [illegible]

- Improvise! Create a short performance, about one minute long. During that minute, your puppet will:
  Introduce itself by name.
  Show and talk about what it does, and why.
  End the scene.

If there is time, improvise a scene with another puppet character!

Touchstones for the Puppet Metaphors Lessons

How to tell if things are going well:

Students feel free to pick up almost any object and free-associate with it to explore metaphorical possibilities. They feel comfortable trying many possibilities before going to a new object.

Students feel comfortable exploring both personification and juxtaposition with their objects.

Students freely experiment with voices and movements for their puppets and base both on their objects' characteristics.

There is a feeling of playful creative energy in the classroom.

Students build on each other's ideas.

Students feel free to try out a metaphor and then revise their ideas if their exploration leads them to ideas they prefer.

Students are respectful and supportive of each other's attempts at performance.

Students seem to understand performances as ways to generate ideas for metaphors, and to extend and explore metaphors. They reflect this through the feedback they offer to fellow students.

Students are comfortable being challenged to push their thinking.

Students recognize when they make a new discovery.

Students can articulate why some metaphors are more powerful than others and help them to more deeply understand the object or topic being explored.

Creating puppet metaphors becomes a tool that students can grasp and use for their own pleasure. They enjoy transferring the creation of puppet metaphors to other subjects.

Resource Materials for the Magic of Making Metaphors Module

Frequently Asked Questions about Making Metaphors

"Students sometimes fall into creating cliched or superficial metaphors, even when they are capable of more. How can I help them stretch their imaginations?"

Metaphorical thinking is so new to many students that they need help knowing where to look for inspiration. Challenge them to be very specific about what they see. For instance, if they are juxtaposing an artwork with something else, prompt them by using the phrase "Keeping in mind the characteristics of the artwork, what kind of (weather, animal, emotion, etc.) would this be?" Invite them to look at the artwork ever more closely, finding details they hadn't noticed, and encourage them to find ideas for new and richer metaphors in those details. Without being insensitive, don't settle for metaphors that are unsupported by detail, or that are too general. Even very young children can be pushed to observe closely and stretch their imaginations.

Excerpt from a second grade class making metaphors about the moon:

Student: The moon is a ball!
Teacher: Why a ball?
Student: Because it's round!
Teacher: Yes, that's true. What else is round?
Students: Pizza! Cookies! Plates!
Teacher: What happens when you take a bite out of a cookie?
Student: The cookie gets smaller.
Teacher: Could the moon be a cookie, and get smaller?
Student: Yes!
Teacher: If the moon were a cookie, the stars might be . . .
Student: Crumbs!
Student: And the sky is a tablecloth.
Teacher: And when it's morning, what happens to the tablecloth?
Student: Somebody brushes it off!

Moving from one approach to another also loosens students' mindsets. Have them brainstorm verbally as a group, write reflectively on their own, brainstorm some more, and then get up and improvise movements about one idea that was generated.

To help her second-grade students brainstorm more interesting personifications, one teacher used a simple performance activity. Students thought one part of a painting resembled a strip of bacon, but when asked "If that bacon were a person, what kind of person would it be?" students couldn't get beyond "hot." She had them stand up, shake themselves out, and then she led them briefly through imaginative play, helping them become the

bacon as it fried. The children quickly turned to more creative metaphors, such as "the bacon is afraid."

"My students like found-object puppetry and now want to make 'people' puppets. Can these be used metaphorically, too?"

"People-puppets" can be rich metaphors if they are meaningfully transformed. In *Sand*, a play about memory by Vermont master puppeteer Eric Bass, the top of a puppet's head opens and sand pours out, creating a powerful metaphor about memory and dreams. (One can imagine all kinds of alternative ideas for what might flow or fly from a puppet's head!) These kinds of transformed people- or animal-puppets require more time and attention to build than found-object puppets, and perhaps, for that reason, are good projects for a classroom teacher to pursue in collaboration with an arts specialist.

"Performing the personification of an object feels a lot like the projection technique taught in the 'Power of Perspective Taking' module. Aren't personification and projection the same thing?"

Personification and projection are similar, in that in both cases you are inhabiting something outside yourself. However, they are different in one important way, which is rooted in the difference between the two kinds of thinking involved:

- When you project yourself into something in order to gain a new perspective, you are looking at the world through the perspective of that thing.
- When you personify something, you are that thing, if that thing were human. You are (magically) two things at once: the thing that is the subject of your investigation and a human being. By holding both of those in your mind simultaneously, you are performing both sides of the metaphorical comparison at the same time. You are both the topic and the vehicle of the metaphor, and your performance explores both the common ground and the tension between the two.

Projection	**Personification**
into the wind.	of the wind.
Goal: To look through the "eyes" of the wind.	**Goal:** To compare the wind to a person by giving the wind human characteristics.
You try to be the wind.	You try to be the wind as a person.

"I blow through every country.
I lift up a woman's scarf in Paris,
and a child's kite in Japan."

"I'm a great traveler.
And I'm a bit of a pickpocket.
See this woman's scarf? I took it
right off her head in Paris.
And this kite? I stole it from
a child in Japan."

"How can I adapt lessons with activity sheets for my younger students without advanced writing skills?"

Feel free to improvise, after familiarizing yourself with the approach.

One strategy is to use the activity sheets as a guide for verbal instructions to your class. You might want to do the activity sheets as a group, asking one question to the entire class and gathering answers, or you might want to go around the room asking individuals different questions. A Picture of Practice showing how a teacher adapted a lesson for younger children may be found after the Personification lessons on page 295.

Juxtapostion: Strange Comparisons

If this artwork were a _____, *category*

it would be a _____ and

sound like or say:

look like:

behave like or do
(list verbs):

have an attitude like:

be built like:

taste like:

feel like:

Now write your metaphors as sentences
(don't use *like* or *as*):

If this artwork were a _____, *category*

it would be a _____ and

If this artwork were a _____, *category*

it would be a _____ and

Student Name:

Personification of an Artwork activity sheet

1. **What do you see?** List three elements in the artwork—shapes, lines, colors, objects—that stand out to you the most. What do you notice about them?

2. **What feelings and sensations does this artwork give you?** List three feelings and sensations. (Ask: What are my emotions? What do I hear, smell, taste, touch?)

3. **What is the title of this artwork?** List three things you know about the title.

4. **If this artwork were a person, what type of person could it be?** List three words to describe the artwork's personality.

5. **Describe three different things this artwork might do if it were a person, and why.** (occupation, hobby, role in the family or community, etc.) Be imaginative! Use human action verbs, human adjectives and emotions. Use what you have observed about the artwork.

   This artwork could be a _____ because

   _____.

   This artwork could be a _____ because

   _____.

   This artwork could be a _____ because

   _____.

6. **Make your metaphors act up!** Choose one of your ideas and make your character speak. Write a monologue for your character on the back of this sheet. You can write what the character is thinking, saying or doing . . . or all three!

Then, perform your monologue! And, if you have time, improvise a dialogue between your character and another character created by one of your classmates.

Student Name: _____

Exploring a Topic in the Curriculum through Personification activity sheet

What is the subject I am exploring?

What do I know about this subject? List three things you know.

If this subject were a person, what type of person could it be? List three words to describe the subject's personality.

Describe three different things this person might do, and why. (occupation, hobby, role in the family or community, etc.) In your description, use human action verbs, human adjectives and emotions. Be very descriptive, and go into detail, using everything you know about the subject.

1. _____ could be a _____ because:
   (subject being explored) (occupation or role in life)

2. _____ could be a _____ because:
   (subject being explored) (occupation or role in life)

3. _____ could be a _____ because:
   (subject being explored) (occupation or role in life)

Pick one of your ideas, and write a monologue for the character you have created. Use the back of this paper. If there is time, improvise a dialogue with another student's character.

Student Name: _____

Creating a Found-Object Puppet activity sheet

Step 1:

Choose an object that interests you.
Anything can be a puppet! It should not be anything like a person or an animal. What is it?

Step 2:

Collect all the information you can about this object.

What does it do? How does it do it?

How does it move?

What does it look like and sound like?

Tips for Steps Three, Four and Five:

- *Base your answers on what the object does, how it moves, and what it looks and sounds like.*
- *Move your object as you think; that will give you ideas!*

Step 3:

Make strange comparisons using your object! (Otherwise known as *juxtaposition.*) Choose any two of the comparisons below that you like, and complete the sentences for your object;

If my object were an emotion, it would be _____ because _____.

If my object were a moment in history, it would be _____ because _____.

If my object were a school subject, it would be _____because _____.

If my object were a way of thinking, it would be _____because _____.

Step 4:
Imagine your object as a person! (Otherwise know as *personification.*)

If my object were a person, what type of personality might it have? List three words or phrases.

1.

2.

3.

If my object were a person, what could my object do or be, and why?

1. This _____ could be a _____ because:
   (object) (occupation or role in life)

2. This _____ could be a _____ because:
   (object) (occupation or role in life)

3. This _____ could be a _____ because:
   (object) (occupation or role in life)

Step Five:
Bring your object puppet to life!

- Choose from Step 4 one occupation for your object puppet.
- Review your ideas in Steps 2–4 to help create a personality for your puppet.
- Explore! Ask yourself these questions, while you play with your puppet. Build on your ideas! Take notes here, to help you:

  What is my puppet's name?

  What kind of voice does it have?

  How does my puppet move?

  What does my puppet do?

  What does my puppet know? Care about? See, feel, hear, smell?

  Does my puppet stand for anything? If so, what?

- Improvise! Create a short performance, about one minute long. During that minute, your puppet will:

  Introduce itself by name.

  Show and talk about what it does, and why.

  End the scene.

If there is time, improvise a scene with another puppet character!

Student Name:

Creating a Found-Object Puppet to Explore a Curriculum Topic activity sheet

Curriculum topic: _____

Step 1:

Choose an object that has to do with a topic you are exploring.
Anything can be a puppet! It should not be anything like a person or an animal. What is it?

Step 2:

Collect all the information you can about this object.

What does it do that relates to the topic? How does it do it?

How does it move?

What does it look like and sound like?

Tips for Steps Three, Four and Five:

- *Base your answers on how your object relates to the topic, what it does, how it moves, and what it looks and sounds like.*
- *Move your object as you think; that will give you ideas!*

Step 3:

Make strange comparisons using your object! (Otherwise knows as *juxtaposition.*) Choose any two of the comparisons below that you like, and complete the sentences for your object;

If my object were an emotion, it would be _____ because _____.

If my object were a moment in history, it would be _____ because _____.

If my object were a way of thinking, it would be _____ because _____.

Step 4:
Imagine your object as a person! (Otherwise known as *personification.*)

If my object were a person, what type of personality might it have? List three words or phrases.

1.

2.

3.

If my object were a person, what could my object do or be, and why?

1. This _____ (object) could be a _____ (occupation or role in life) because:

2. This _____ (object) could be a _____ (occupation or role in life) because:

3. This _____ (object) could be a _____ (occupation or role in life) because:

Step Five:
Bring your object puppet to life!

- Choose from Step 4 one occupation for your object puppet.
- Review your ideas in Steps 2–4 to help create a personality for your puppet.
- Explore! Ask yourself these questions, while you play with your puppet. Build on your ideas! Take notes here, to help you:

  What is my puppet's name?

  What kind of voice does it have?

  How does my puppet move?

  What does my puppet do?

  What does my puppet know? Care about? See, feel, hear, smell?

  Does my puppet stand for anything in relation to the topic I am exploring? If so, what?

- Improvise! Create a short performance, about one minute long. During that minute, your puppet will:
  Introduce itself by name.
  Show and talk about what it does, and why.
  End the scene.

If there is time, improvise a scene with another puppet character!

Additional Lesson Suggestions in Brief: Making Metaphors Module

Making Metaphors about Learning

Have students make discoveries about their learning, and about the nature of the subject they are studying.

Get ready by asking students how different subjects require different ways of thinking. (For example, in math our thinking has to be step-by-step. When reading a long story with many characters, we go back and forth in our thinking as we remember what we know about each character.)

Consider the topic by asking students to think back on their experience of learning about a particular topic. Then ask "What kinds of thinking do you need to do to understand this subject well? What kinds of feelings do you have as you learn more and more about this subject? Has learning about the subject been easy, hard, fun, challenging, interesting, boring, a combination?"

Deepen understanding by asking "What could be some metaphors for learning about this subject?" Try some human action verbs: skating, mountain-climbing, swimming, tumbling, walking in the dark, etc. Have students perform a metaphor related to learning about this topic. For instance, "If learning multiplication were a kind of dance it would be . . . If writing poetry were a kind of physical labor, it would be . . . If the thinking of a scientist were a kind of tool, it would be . . ." Discuss what the metaphors suggest about how one learns this topic.

Reflect and connect by asking "What new understandings have you come to about your own thinking about this subject, and about your attempt to study it?"

What's My Style of Thinking?

Students can understand themselves better by taking the time to think about their thinking.

Get ready by explaining "We're going to think about our thinking."

Consider the topic by considering these questions: "What is the rhythm of your thinking? Do you take your time, or do you come to ideas quickly? Do you consider many different possibilities or move in a straight line? How does thinking feel to you? What is the shape of your thinking? The movement of your thinking?"

Deepen understanding by creating metaphors for your thinking. Try action verbs ("I fly when I think.") and nouns ("My thinking is the long way home."). Ask

generative questions, such as "If your thinking were a mode of transportation, what would it be?" Ask students to bring in an object, draw a line, or perform a movement that is a metaphor for their thinking. Share the metaphors—writings, drawings, and objects—in class, and discuss their meanings.

Reflect and connect by asking students whether or not they notice that they use different kinds of thinking in different situations or for different topics. What types of thinking are best to use in different situations?

Exploring a Character in Relation to an Animal

Juxtapose a character in literature to an animal, and then perform a metaphor for that character.

Get ready with stretching exercises.

Consider the topic by asking students to recall a character from a book, imagine what animal this character might be, and think about why.

Deepen understanding by having students make that character's movement as an animal, and then bring it closer to the movement of the real person performing simple actions like walking around the room, sitting, looking through a book, etc. Invite students to notice how the animal movement affects the person's movement. For example, did the person have a longer, more graceful neck like a swan, or the staccato steps of a chicken, or the stealth of a cat? Create a scene that would allow one or more characters to interact, using these animal-informed characters; for instance, if the characters are from history, maybe several are debating an issue.

Reflect and connect on new discoveries made about the character. Ask "What other juxtapositions might you choose to explore your character?" (For instance, "If my character was a building, she or he would be a _____, because she or he _____.")

Making Machines as Metaphors for Cooperation

Help young children gain deeper insights into working as a team.

Get ready by examining different simple tools in which one can observe one part leading to the movement of another part: for instance, a manual can opener or sewing machine. How does it work?

Review the topic by discussing how cooperation in a group is like the way a machine works. How is a broken machine like a team that doesn't work well together?

Deepen understanding by having children perform human machines that are metaphors for a team that works well together, and for one that does not. En-

courage them to hold hands and move in rhythm to create a machine that works; prompt a speed-up that breaks the machine, or suggest that the machine was left out in the rain and has rusted—how would it behave then? Try having one part break; can the others function?

Reflect and connect by remembering how it felt to be part of a machine that was well-connected and working, and one that was not. Discuss how that is similar to teamwork.

Note: For very young children, the word "match" can be used instead of metaphor.

Guess Who's Coming to Dinner?

Use puppetry to explore family life.

Get ready by laying out in front of the class a wide assortment of objects used to create place settings: silverware or plasticware, different kinds of plates, glasses, napkins, chopsticks, unusual accessories, placemats, etc.

Consider the topic by reflecting on your own family: how it works, what kind of shape it has, etc. Reflect on other families you have observed that are similar to yours, or very different. Now imagine that you are a social scientist, hired to study different families. You try not to judge them. You just describe what you see. List on the board different kinds of families: families with and without children; families in which children are being raised by two parents, by one parent, by grandparents, by foster parents, by adoptive parents, by two moms, or two dads; families living in an apartment, a house, a trailer, a boat; low, middle, and upper income families; small families, extended families, etc.

Deepen understanding by considering your own family, or choose one from the list. Imagine: if this family were a place setting, what would it look like? What pieces of silverware would there be? Would the place setting be simple or elaborate? What kind of napkin, placemat, and glass would it be? (Remember: families don't have to look a certain way to be a good family! You can create your own family metaphor that is a place setting different from anything you have ever seen or imagined.) After the "families" are created, put them into dialogue. Let the individual "family members" talk to one another, and then let the families interact.

Reflect and connect by asking what discoveries you made about what makes a good family. Did any possible combination surprise you? What objects might you use as puppet possibilities for exploring other social relationships (for instance, a classroom, children on a playground, people at a town meeting, a government, etc.)?

Metaphors from Poets, Writers, and Musicians

My solitude grew more and more obese, like a pig. Mishima Yukio, *Temple of the Golden Pavilion*, 1959

The silence drew off, baring the pebbles and shells and all the tatty wreckage of my life. Then, at the rim of vision, it gathered itself, and in one sweeping tide, rushed me to sleep. Sylvia Plath, *The Bell Jar*, 1963

Sacred cows make the tastiest hamburger. Abbie Hoffman, remark recalled at his death, 1989

I had been my whole life a bell, and never knew it until at that moment I was lifted and struck. Annie Dillard, *Tinker at Pilgrim Creek*, 1974

In a real dark night of the soul it is always three o'clock in the morning. Francis Scott Fitzgerald, *The Crack-Up*, 1936

Her voice is full of money. Francis Scott Fitzgerald, *The Great Gatsby*, 1925

They're always throwing goodness at you
But with a little bit of luck
A man can duck.
Alan Jay Lerner, *With a Little Bit of Luck* from *My Fair Lady*, 1956

Metaphors in Music

The Four Seasons by Vivaldi
La Mer by Debussy
The Planets by Gustav Holst

Appendices

Appendix A

Art Works for Schools and the Massachusetts Curriculum Frameworks

Through its focus on thinking skills and interdisciplinary learning, the *Art Works for Schools* program directly addresses many key goals of the Massachusetts Curriculum Frameworks. The Massachusetts Common Core of Learning states that students should be able to, among other things, "read and listen critically . . . , write and speak clearly, factually, persuasively, and creatively, . . . distinguish fact from opinion . . . and recognize bias."[1] It also states that students need to "make careful observations and ask pertinent questions, . . . analyze, interpret, and evaluate information . . . Make reasoned inferences and construct logical arguments . . . [and] develop, test, and evaluate possible solutions."[2] All of these goals require the thinking skills and dispositions—reasoning, perspective taking, problem finding, and making metaphors—that are taught in the innovative *AWFS* lessons. The content and processes of these thinking techniques are subsequently transferred to help students develop deeper understanding in other areas of the curriculum.

The following paragraphs outline how the *AWFS* program addresses the core concepts and/or skills of the Massachusetts Curriculum Frameworks in each curriculum area.

English Language Arts

Art Works for Schools lessons strongly support core concepts in the English Language Arts Frameworks. Specifically, "the goal of an English language arts curriculum is to teach learners how to reason and use language purposefully as they comprehend, construct, and convey meaning."[3] The "Artful Reasoning" module in the *AWFS* curriculum gives students a comprehensive understanding of the reasoning process. Students practice reasoning in order to comprehend, construct, and convey meaning about artworks through writing and discussion. Other lessons in the module then transfer the process of reasoning to the understanding of literature and drama.

The English Language Arts Framework also emphasizes reflective thinking as a key component in effective communication: "Teaching students to reflect upon and gain conscious control over their observations, thoughts, and language is as essential as teaching them how to analyze the thoughts and language of

others. They must also be able to develop an awareness of their own moods and perceptions."[4] Strategies for developing reflective intelligence ask students to focus, plan, assess, and modify their perceptions and hypotheses about a subject. All *AWFS* lessons in general guide students to assess and modify their perceptions and hypotheses about an artwork as they look at and discuss it in a group. Certain *AWFS* modules use many of the same sub-strategies specified by the frameworks, such as: accessing prior knowledge (all modules), formulating questions (most notably in the "Problem Finding" module), generating essential questions ("Problem Finding"), brainstorming ("The Magic of Making Metaphors"), drawing (several modules), role-playing ("The Power of Perspective"), identifying ambiguity ("Problem Finding"), detecting bias ("The Power of Perspective"), and rephrasing for clarity ("Artful Reasoning").[5] In addition, each lesson includes a vital step called *Reflect and Connect* that promotes metacognitive thinking so that students may become more aware of their moods, perceptions, and thinking styles.

Finally, being able to express oneself creatively in writing is an important goal of the Common Core of Learning that relates to this framework. In "The Magic of Making Metaphors" module, students learn several strategies for making metaphors both verbally and visually, thus enriching their capacities for creative expression.

Mathematics

The core concept of this framework emphasizes "achieving mathematical power through problem solving, communicating, reasoning and making connections."[6] These strategies are used throughout the *AWFS* program in lessons that encourage students to pose questions based on close observations ("Problem Finding"), make informed and logical conclusions ("Artful Reasoning"), share and justify their ideas in discussion (all modules), and connect their learning to other areas of study (all modules).

Science and Technology

"Owning the questions" is the core concept of the Science and Technology Framework, which advocates that students become questioners who stimulate their own inquiries.[7] This framework emphasizes that scientific knowledge is rooted in inquiry and investigation, two activities found in all four modules of the *AWFS* program but most obviously in the "Problem-Finding" module. Indeed, studies have shown high correlations between the disposition to find, pose, and explore problems and high creativity and achievement in both art and science.[8] The "Problem Finding" module gives students specific challenges to identify puzzles they find around them, and also methods of framing questions that deepen inquiry and understanding.

As in the English Language Arts Curriculum Framework, which values reasoning, the Science and Technology Curriculum Framework promotes "a respect for evidence" as a preferred habit of mind.[9] Lessons in the "Artful Reasoning" module give students practice in observing, describing, and making predictions and analyses based on evidence. Other modules do so through the process of looking at and interpreting art.

AWFS materials include transfer lessons to science, making explicit the connection between high-level thinking in the arts and in science.

History and Social Science

Finally, *AWFS* lessons make a strong connection to the History and Social Science Curriculum Framework through the practice of reasoning and reflection; specifically, understanding others' perspectives. "In order for students to . . . continue to learn for themselves . . . students need . . . a firm grasp of reasoning and practice in inquiry and research. They must learn how to frame and test hypotheses, to distinguish logical from illogical reasoning, and to grasp the superiority of reflective thinking and evaluation . . ."[10]

The framework sites "specific 'how-to' knowledge students need in order to understand subject matter content," such as: "how to gather, interpret, and assess evidence from multiple sources, how to distinguish various forms of opinion, how to identify and avoid bias and prejudice, and how to enter in thought and imagination the point of view of others."[11]

As mentioned earlier, the "Artful Reasoning" module gives students experience with interpreting and assessing evidence from multiple sources. The "Power of Perspective" module is especially relevant to helping students understand various points of view. Through several techniques, students practice taking the viewpoint of another, delving into what that person (or thing) might perceive, know about, and care about. Using these tools, students' thinking becomes more flexible and open-minded, directly fulfilling the "how-to" knowledge that this framework mandates. After examining different perspectives in an artwork, transfer lessons help students discover different perspectives on historical and social events.

Art

The Arts Framework recognizes the value of the arts as a way for students to "express ideas and emotions that they cannot express in language alone."[12] In the guiding principles for this framework, emphasis is placed on developing students' skills in responding to art.[13] All four modules in the *AWFS* program provide students with opportunities to examine and respond to art in structured lessons, explore it imaginatively and kinesthetically with theater techniques, and construct meaning that is uniquely personal.

Conclusion

The *AWFS* program is relevant to any classroom because its lessons support the core concepts and types of thinking recommended by all subject areas of the Massachusetts Curriculum Frameworks. In addition, the innovative use of visual and theater arts makes the program fun for students, and making learning enjoyable is an important (if unstated) goal in itself.

Notes

1 Website, Massachusetts Department of Education, Massachusetts Common Core of Learning.

2 Ibid.

3 *English Language Arts Curriculum Frameworks*, Massachusetts Department of Education, 1997, p. 3.

4 Ibid.

5 Ibid. p. 5.

6 *Mathematics Curriculum Framework*, Massachusetts Department of Education, 1996, p. 2.

7 *Science and Technology Curriculum Framework*, Massachusetts Department of Education, 1996, p. 2.

8 S. M. Rostan, "Problem-finding, problem-solving, and cognitive controls: An empirical investigation of critically acclaimed productivity." *Creativity Research Journal* 7/2, (1994) 97–110.

9 *Science and Technology Curriculum Framework*, Massachusetts Department of Education, 1996, p. 5.

10 *History and Social Science Curriculum Framework*, Massachusetts Department of Education, 1997, p. 11.

11 Ibid.

12 *Massachusetts Arts Curriculum Framework*, Massachusetts Department of Education, 1999, p. 1.

13 Ibid.

Appendix B

Making the Most of a Field Trip: Practicing Thinking in the Art Museum

The art museum is a great place to introduce your students to thinking dispositions. The advantage of being in an art museum gallery is the sheer number of artworks that can be found in one space. Being able to view many artworks close to each other lets students make comparisons and provides a wider field of choices for making metaphors.

This section includes four lessons for use in an art museum. Other lessons from AWFS recommended for an art museum setting are:

Preparing for Your Museum Visit

Research shows that students learn more on a field trip if they are told the logistics of their trip ahead of time. Therefore, *before they arrive* discuss with them:

- What the purpose of their visit is, and what they can expect to see and do.
- Whether or not they will be eating lunch or a snack.
- When they will be taking breaks for the bathroom or the gift shop.
- How long they will be staying.
- Review Museum Etiquette (see next page).

The following supplies may be useful:

- Sketch pads and pencils (no markers or pens, please)
- A camera that can have its flash turned off (most museums do not allow flash photography, if they allow photographing at all—check the museum's policy)
- Copies of activity sheets from some of the following lessons
- Copies of the Museum Etiquette sheet for chaperones

Museum Etiquette

Please review the following with your students and chaperones before visiting a museum:

No running. Either you or the artwork could be hurt or damaged.

No touching the artworks. The oil and salt in your fingerprints damages art, even metal.

Be aware that there are other visitors in the museum who also want an enjoyable experience. Therefore, keep your voices at a normal level, and when you have finished viewing an artwork, be mindful that you are not blocking it for others.

Chaperones are responsible for enforcing these rules of etiquette. Please do not leave this task to the museum guards or museum guides (docents) because they have other jobs to do, and disciplining students distracts them from their important roles.

Exploring Juxtaposition in the Art Museum

In this lesson students will focus on what makes a good metaphor by examining the similarities and dissimilarities between the *topic* and their choice of *vehicle.*

Suitable for grades 4 and up
50 minutes

Understanding Goals for Students

- Metaphorical connections can be made between different forms of expression—in this case, written words and visual art.
- Metaphorical connections can make analogies based on a variety of attributes.
- Some metaphors "fit" better than others, and this can be determined by examining the similarities and differences between the metaphor topic and the metaphor vehicle.

Materials

- A handout of metaphor topics prepared by the teacher (or use the sample worksheet "Metaphors in the Galleries")
- Pencils
- Clipboards

Preparation

- Create a handout of metaphor topics to be used in the museum. (Leave one or two blank spaces for students to invent their own descriptive phrases to match to artworks.) Try to include phrases about different senses, intangible concepts, and emotions. Limit the number of phrases, depending on the amount of time you have for the field trip and the age of the students.
- This activity can be done individually or in small groups. If you decide to do it in small groups, decide how to divide your class before you get to the museum.
- Visit the museum ahead of time to decide which galleries you would like to use. This activity works best using two adjacent, small galleries or one larger gallery, or a specified area such as a sculpture garden. If possible, use galleries that have a variety of styles (abstract to more realistic) and media (paintings, sculpture, prints, photographs) represented.

Procedure at the Museum

Step 1: Get Ready

Five to seven minutes

Basic rules include no running, no touching, and being considerate of other people visiting the museum.

Review basic museum etiquette.

Explain that students will be making metaphors using artworks in the galleries. Review the definition of metaphor and "Making Metaphors: Key Moves and Attitudes."

Step 2: View the Artwork

15 minutes

Tell students which area or galleries in the museum they will be using for this activity.

- Hand out the prepared sheet of descriptive phrases or words.
- Ask students to find a painting, sculpture, or other artwork that best represents each statement and to be able to say why they chose it, and why it may not be a perfect choice.

Step 3: Deepen Understanding

15–20 minutes

Appoint one student to write on a blank handout the titles of the artworks that the students chose for each phrase.

Ask each student to talk about one or several (or all) of his or her choices. After hearing from all of the students, go back to one or two phrases and point out the variety of artworks that they chose for the same phrase.

Ask:

- Which artwork "fit" best for the phrase, and why?
- What was similar between the phrase and the artwork: the mood, the form, the function?
- Were there metaphors that you thought were powerful, that gave you an "Aha!" moment or a deeper insight into the topic? Which ones, and why?

Step 4: Reflect and Connect

Five minutes

Older students could then choose one artwork (and corresponding phrase) they especially like and generate a list of their own metaphors about it. (If there's time, they could also draw it.) Back in the classroom they would use their metaphors and the original phrase to write a poem about the artwork.

Reflect on the museum experience with your students.

Ask:

- What was your thinking like as you did this activity?
- What was difficult or easy? Which parts did you find more enjoyable?
- Did you find yourself basing your decisions on one type of similarity, such as mood or form?
- Do you look at the artworks you chose in a new way?

Metaphors in the Galleries activity sheet

Find an artwork that you think is a metaphor for the following phrases and write its title in the blank. Write how the artwork is like and unlike the phrase. Remember: Be bold and adventurous in your comparisons! Look for unusual connections!

The smell of clean laundry is _____.
(Name of artwork)

They are alike because: _____.

They are not alike because: _____.

Injustice is _____.
(Name of artwork)

They are alike because: _____.

They are not alike because: _____.

The sound of night is _____.
(Name of artwork)

They are alike because: _____.

They are not alike because: _____.

A visit to my grandmother's house is _____.
(Name of artwork)

They are alike because: _____.

They are not alike because: _____.

_____ is _____.
(You fill in a word or phrase) (Name of artwork)

They are alike because: _____.

They are not alike because: _____.

Getting to Know You through Metaphors in the Art Museum

This lesson uses juxtaposition for making metaphors and is a great icebreaker for a group. Students will be interviewing each other and then finding an artwork that is a suitable metaphor for the person they interviewed.

Suitable for grades 5 and up.
50 minutes

Understanding Goals for Students

- Using an artwork as a metaphor can help us understand a person better.
- Using an artwork as a metaphor can help us understand the artwork better.

Materials

- A handout prepared in advance, described below

Preparation

1. Produce a handout with three questions that probe someone's personality, leaving space for written answers. Examples: What do you like about your favorite hobby? If you could solve one of the world's problems, which one would you solve and why? What are your best characteristics?

2. Visit the museum ahead of time to decide which galleries you would like to use. This activity works best using two adjacent, small galleries, one larger gallery, or a specified area such as a sculpture garden. If possible, use galleries that have a variety of styles (abstract to more realistic) represented.

3. In the classroom the day before the field trip:

- Pair off the students, trying to match students who may not know each other very well. Give them the handout and ask them to interview each other, writing responses on the handout. Collect the handouts, and take them on the field trip.
- Review the logistics of their field trip and museum etiquette.

Procedure at the Museum

Step 1: Get Ready

Five minutes

Quickly review basic museum etiquette by asking students to tell you what it is. Explain that they will be making metaphors using artworks in the galleries.

Basic rules include no running, no touching, and being considerate of other people in the museum.

Ask:

- Who can remind us what a metaphor is?

Review the "Making Metaphors: Key Moves and Attitudes" sheet.

Step 2: View the Artwork

10–15 minutes

Give the students their handouts about the person they interviewed. Explain that they are going to look in designated galleries to find an artwork that is a metaphor for their interviewee, and that they will be asked to explain their choices. Tell them how long they will have to locate their metaphor and where to meet the group when they are done.

Step 3: Deepen Understanding

20 minutes

Ask each student to describe the person they interviewed and explain their choice of artwork. If one artwork is chosen as a metaphor for more than one person, point out to the students how different aspects of the artwork were chosen as representative of different people. Also point out the types of comparisons students made in their metaphors; for example, comparisons between a person's character and the overall mood of the artwork.

If you are using more than one gallery, ask which students found their metaphor in the gallery you are all gathered in, and start with those students. Move to the next gallery and repeat the process.

Step 4: Reflect and Connect

10–15 minutes

After everyone has explained their metaphor, reflect on the museum experience with the class.

Ask:

- What was your thinking like as you did this activity?
- What was difficult or easy?
- Did you find yourself basing your decisions on one type of similarity, such as mood or form?
- Were there other aspects of the art that you could have used as a basis for comparison, but you did not use them because they did not "fit" as well?
- Do you look at other artworks in a new way? What ideas did you have about the artworks you looked at that you might not have had otherwise?

Additional Lesson Suggestions in Brief: Using Juxtaposition in the Museum

Getting to Know the Curriculum through Metaphors

Use a technique similar to the one in "Getting to Know You through Metaphors in the Art Museum" (see page 352) for exploring students' understanding of a curriculum topic.

Get ready: Review the big understandings of a topic the class is studying either orally or by using a worksheet that you prepare.

View the artwork: Send the students into designated galleries to select an artwork that they think best represents the curriculum topic. Ask students to act as museum guides to their classmates, and explain their choices.

Deepen understanding: Did students "connect" the topic to the artwork's form, mood or energy, structure or composition, color, narrative quality?

Reflect and connect: Ask students to think about which artworks seem to be the most powerful metaphors for the topic, and why.

Sample Topics:
Find a metaphorical relationship between a work of art and

- The relationship of the individual and society
- The need for laws
- The women's suffrage movement
- Fractions
- Newton's first law
- The circulation system in the human body

NOTE: This lesson could be done several times in one museum visit, focusing on a different curriculum topic each time. If an artwork is chosen as a metaphor for two or more topics, reflect on which attributes of the artwork made it such a popular choice, leading to the creation of multiple metaphors.

Putting Two Artworks into Dialogue

Suitable for grade 4 and older/adaptable for any age

Get ready: Tell students that they will be bringing two of the artworks in the museum into dialogue with each other. Divide the students into pairs.

View the artworks: Select the galleries you will use. Give the pairs time to look at the art in the designated gallery. Using the category of "occupation," ask

students to choose metaphors for the two artworks. For example, one painting might be a politician, and another might be a dancer.

Invite students to carefully consider the characteristics of the artwork when making their choices, and to view the artwork for some additional time with their metaphors in mind.

Offer sample questions that compare the two metaphors, such as:

- What would these two paintings say to each other at a party?
- What would they do if put on a stage?
- If they got married and had a baby, what would it look like?

Deepen understanding: Have each pair of students put their two metaphors into a dramatic scene and improvise it. Each student will take on the "character" of one of the art works by acting out its metaphor—for instance, the kind of politician that painting would be, or the kind of dancer that sculpture would be.

Give the students about five minutes for rehearsal, and tell them that their scene is to be about a minute long. Have as many different pairs as possible perform their scenes.

Reflect and connect: What "Aha!" moments were inspired by any of the scenes (moments that sparked deeper understanding of the artwork or of the occupation to which it was being compared)?

Note: Other categories could be chosen for comparison, such as "family members" ("If your artworks are siblings, do they get along? If your artworks are mother and child, how is that child disciplined?").

Appendix C

Making the Most of a Field Trip: Going to the Theater or Concert Hall

Bertolt Brecht, the famous twentieth-century German playwright, said that a great theater experience should combine "Spass und Ernst," loosely translated as "fun and earnestness." Ideally, your students enjoy themselves when they experience the performing arts, either on a field trip or when a performance takes place in your school. But how do you also engage them in deep reflection about what they see and hear?

The thinking dispositions taught and practiced in this curriculum are introduced as a way of entering more deeply into visual art. But these dispositions can also help you enter deeply into any performing art—theater, dance, or music.

This section explains, in a general sense, how to prepare students to view a performance thoughtfully. It then suggests particular techniques from the four modules that work well to deepen students' understanding of a performance. Tips are offered as to how the module lessons can be modified to enhance their use with a performance.

Before the Performance

One challenge presented by a live performance is that it is ephemeral—usually you see a performance only once, unlike a work of visual art that you can look at again and again. So in order to reflect in class about a performance, you'll need to remind students of what they have seen. You can use video or audio clips and photographs to remind them of the performance, of course. But more importantly, you can orient them in advance, to help them focus, track, and remember their thinking.

Ask:

- When have you ever attended a live theater performance (or live puppetry, dance, or orchestral performance—whatever is applicable)?
- What did you find most enjoyable? Challenging?
- What stood out? What was surprising?
- What did you wonder about?

Explain something about the performance the students are about to see.* Invite them to open up their minds to wondering and questioning about what they experience in the performance. Tell them that you'd like them to notice their

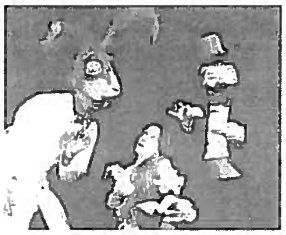
* Most performing artists with an educational outreach program provide teachers with written materials for use in their classrooms. These materials usually give background information about the topic of the performance and suggest preparatory and follow-up activities.

questions, thoughts and feelings during the performance, and that they'll be sharing them in class.

Tips:

- Ask students to bring small pads of paper and pencils to jot down questions, thoughts, or feelings during or directly after the performance, perhaps in conversation with whomever sits next to them on the bus on the way back to school. Some students may prefer to sketch their responses, rather than write.
- You may want to focus their thinking on wondering about possible connections to a topic in the curriculum. Even if that is the case, encourage broad and adventurous wondering!
- Ask in advance if your class can be granted a post-show ten-minute question and answer session with one of the performers.

Lessons in Thinking Techniques to Deepen Student Understanding about the Performing Arts



Module: Problem Finding

Suitable for theater, dance, or music.

Sequence of Activities

Option One
Before the performance, teach the first lesson in any of the three pairs of lessons listed below (Lesson 3, 5, or 7) as an introduction to the thinking technique. Then, after the performance, use the companion transfer lesson (Lesson 4, 6, or 8) to help students explore the performance.

Option Two
See the performance first, and then introduce the thinking technique with any introductory lesson (Lesson 3, 5, or 7) but substitute the performance for the artwork as the topic being explored in the lesson.

Lessons

Lesson 3: Question/Reflect/Revise (p. 207)
Lesson 4: Transferring Question/Reflect/Revise (p. 211)

Lesson 5: Getting Inside a Question (p. 219)
Lesson 6: Transferring Getting Inside a Question (p. 224)

Lesson 7: Back Tracking (p.233)
Lesson 8: Transferring Back Tracking (p. 236)

Module: The Power of Perspective-Taking

More suitable for theater than for dance or music.

Sequence of Activities

Before the performance, teach the first lesson in either of the two pairs of lessons listed below (Lesson 5 or 7) as an introduction to the thinking technique. Then, after the performance, use the companion transfer lesson (Lesson 6 or 8) to help students explore the performance.

Lessons

Lesson 5: Learning Projection through Thinking about Art (p. 145)
Lesson 6: Transferring Projection (p. 148)

Tips for Projection into the Performing Arts:

- Help students project themselves into the characters in the performance by inviting them to write and/or improvise monologues and dialogues that could have—but did not—take place in the play. For instance, what was a certain character thinking that we did not hear? What might two characters have said to each other in a different setting?
- Use the Viewpointer activity sheet to help students organize their thoughts about the characters they saw in the play (in the resources section of the Power of Perspective-Taking module).
- Use the Playwriting Improvisation activity sheet to help students create new scenes for the characters they saw in the play (in the resources section of the Power of Perspective-Taking module).

Lesson 7: Learning Interviewing through Thinking about Art (p. 157)
Lesson 8: Transferring Interviewing (p. 161)

Tip for Interviewing:

Have some students do the interviewing of other students taking on the roles of the characters in the play, or characters they can imagine as related to the play that did not appear, and perhaps even artists involved in the production: the playwright, the director, the actors, etc.

Module: Artful Reasoning

Suitable for theater, dance, or music.

Sequence of Activities

Before seeing the performance, teach Lesson 1, as an introduction to Reasoning. Then, after the performance, teach Lesson 2, using the *Interpretation Organizer* activity sheet to build an interpretation of the performance rather than of a work of visual art.

Lesson 1: Building Interpretations: Visual Art (p. 51)
Lesson 2: The Interpretation Organizer (p. 55)

Module: The Magic of Making Metaphors

More suitable for music and dance than for theater.

Sequence of Activities

Option One

Before the performance, teach the first lesson in either of the first two pairs of lessons listed below (Lesson 1 or 3) as an introduction to the thinking technique. Then, after the performance, use the companion transfer lesson (Lesson 2 or 4) to help students explore the perfor-

mance.

Option Two

See the performance first, and then introduce the thinking technique with either introductory lesson (Lesson 1 or 3) but substitute the performance for the artwork as the topic being explored in the lesson.

Option Three

If your students are attending a music concert, before or after the performance teach Lesson 5.

Option Four

If your students are attending a puppet performance, before or after the performance teach Lesson 7.

Lessons

Tip:

If you do not have for Lesson 5 a recording of the music your students will hear in the concert, you can use instead music of a style similar to the music your students will hear.

Tip:

After the performance, ask: "In what ways did the puppets you saw in performance express things metaphorically that a human actor would have been unable to express?"

Appendix D
Artworks featured in *Art Works for Schools* lessons

From the Permanent Collection of DeCordova Museum and Sculpture Park unless noted.

Looking at Art

Morgan Bulkeley
Baneberry Night, 1979
pastel on paper
30 x 40 inches
NEA Museum Purchase Plan 1981.5

Performances for Deepening Understanding

Todd McKie
What's Happening Here, 1986
handmade paper
46 1/2 x 38 3/4 inches
Gift of Meredyth and John Moses 1991.7

Reasoning

Candace Walters
Journey's End, 1989
oil stick and enamel on paper with applied costume jewels
29 1/2 x 11 inches
Museum Purchase with Funds Provided by the Goldberg Foundation 1989.10

Frederick Lynch
The Ambassador, 1978
watercolor
30 x 39 1/2 inches
Museum Purchase 1979.3

Marcy Hermansader
Transfusion, 1988
colored pencil, spray paint, acrylic, fabric, and foil on paper
31 1/2 x 39 1/4 inches
Gift of Jonathan Flaccus 1990.2

Rodger Kingston
Monument Valley, Utah, 1983
cibachrome print
13 x 19 3/8 inches
Gift of Arlette and Gus Kayafas 1993.92

Perspective-Taking

Mark diSuvero
Sunflowers for Vincent
On long-term loan to the Museum

Martin Ahearn
Island Man, Monhegan Island, 1975
watercolor on paper
20 1/2 x 26 3/4 inches
NEA Museum Purchase Plan 1978.1

Lois Tarlow
Night Shift at the Compost Heap #2, 1990
watercolor and metallic watercolor on paper
35 1/8 x 30 1/8 inches
Gift of Ellen Wineberg 1994.14

David Aronson
Man with Amulets, 1960
oil on board
11 x 14 inches
Gift of the Stephen and Sybil Stone Foundation 1971.27

Problem Finding

Morgan Bulkeley
Baneberry Night (see previous listing)

Candace Walters
Journey's End (see previous listing)

Merle Perlmutter
This is Jane's Room, 1979
intaglio, 16/150
17 1/2 x 25 1/2 inches
Museum Purchase with Funds Donated by Cabot Corporation 1980.38

Making Metaphors

William Remick
Untitled, from the A. T. S. E. Special Portfolio, 1992
linocut
14 x 14 inches
Museum Purchase 1992.37i

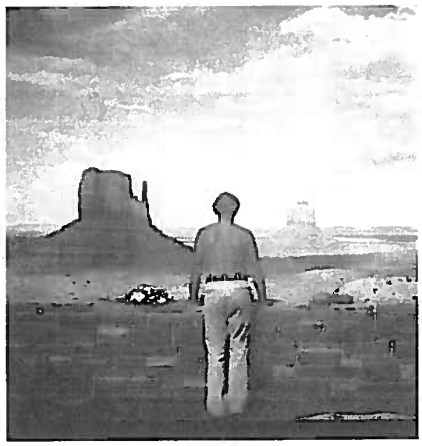
Richard Jacobs
Miami, 1989
oil and acrylic on canvas
68 1/2 X 48 3/4 inches
Gift of Noel G. Posternak 1996.64

Photography Credits

Ri Anderson: Cover (classroom images),
Fact sheet, pages 66, 160, 223, 311, 349, 352

David Fichter: pages 357, 359

Marc Teatum: Contents page, page 123



For more lesson plans and tips for using the Art Works for Schools curriculum, check out www.decordova.org and look for the link to Art Works for Schools.

To learn more about the collaborating organizations, call or visit our websites:

DeCordova Museum and Sculpture Park
(781) 259-8355
www.decordova.org

Harvard Project Zero
(617) 495-4342
http://pzweb.harvard.edu

Underground Railway Theater
(781) 643-6916
www.undergroundrailwaytheater.org

ISBN 0945506414

Library of Congress Control Number: 2002107079

DeCordova Museum and Sculpture Park
51 Sandy Pond Road
Lincoln, Massachusetts
01773-2699
(781) 259-8355