Ways for Educators to use the Agency *by* Design Framework for Maker-Centered Learning and The Making Moves

Design instruction

Use the capacities to help design and plan learning experiences. For example, choose one capacity, or a subset of its Making Moves, to be the focus of a lesson or to amplify in an existing lesson.

Capture learning

Use the capacities as lenses to observe and document learning, drawing on the moves to suggest specific things to look for.

Extend learning

Encourage students to go beyond their initial explorations of a capacity in one or more of these three ways:

- *Go deeper* into one or two moves in a capacity
- *Go broader* into different areas of the capacity. Consider which areas of the capacity students haven't yet explored.
- Get reflective about the capacity (being reflective includes distilling insights, being metacognitive, and reaching for connections).

Assess learning

Identify the basic level of performance related to the forms of the capacity you want to teach. These levels may be different for different learners. Use one or more of the ways to *extend learning* listed above as dimensions along which to look for change and improvement. For example, in what ways are students going deeper into one particular move of the capacity? In what ways are they going broader into, or across, capacities? What kinds of dispositions are they developing or strengthening? In what ways are they becoming more reflective about their learning?

Converse about learning

Use the capacities to talk about learning, drawing on the moves for specific language. This might include teacher-student conversations, student conversations among peers, collegial conversations, and parent-teacher conversations.

Advocate for learning

Use the language of the capacities and their moves to explain the value of maker-centered learning to stakeholders (e.g., colleagues, administrators, parents, policy makers).

The Agency *by* Design Framework

A key goal of maker-centered learning is to help young people and adults feel empowered to build and shape their worlds. Acquiring this sense of maker empowerment is strongly supported by learning to notice and engage with the designed dimension of one's physical and conceptual environment—in other words, by having a sensitivity to design.

Maker Empowerment:
A sensitivity to the designed dimension of objects and systems, along with the inclination and capacity to shape one's world through building, tinkering, re/designing, or hacking.
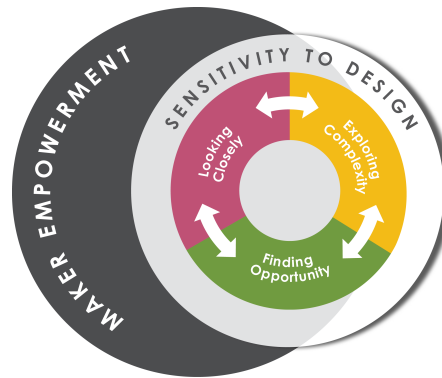
Sensitivity to Design:
Learning to notice and engage with one's physical and conceptual environment by looking closely and reflecting on the design of objects and systems, exploring the complexity of design, and finding opportunity to make objects and systems more effective, more efficient, more ethical, or more beautiful.

Sensitivity to design develops when young people and adults have opportunities to: look closely and reflect on the design of objects and systems, explore the complexity of design, and understand themselves as designers of their worlds. Accordingly, the Agency *by* Design framework describes three interrelated capacities that help learners develop a sensitivity to design: Looking Closely, Exploring Complexity, and Finding Opportunity.
For each of these capacities, there is a set of observable "moves" — or indicators — that learners and educators can use to help design maker-centered learning experiences, and to support, observe, document, and assess maker-centered learning. They apply to individual as well as collaborative learning.

Ways for Educators to use the Agency *by* Design Framework for Maker-Centered Learning and The Making Moves

LOOKING CLOSELY: *Using any and all of the senses to examine objects and systems in order to notice their intricacies, nuances, and details. By looking closely, one may begin to see the complexities inherent in objects and systems.*

- *Notice everything*—Cast a wide net to capture all that you can observe.
- *Revisit*—Look/listen/touch again, and see if you can find something new.
- *Use categories*—Look for different kinds of features or components.
- *Juxtapose*—Look at things side by side; compare, observe relationships.
- *Physically change perspectives*—Look from high, low, far away, close up.

EXPLORING COMPLEXITY: *Investigating the interactions between the various parts and people associated with objects and systems, including the range of values, motivations, and priorities held by the individuals who engage with particular objects and systems.*

- *Explore inner workings*—Explore how things, ideas and systems work—what are their parts and interactions?
- *Explore points of view*—Consider and take different perspectives: What different ways can you look at this?
- *Probe your own perspective*—Examine your own assumptions and beliefs.
- *Look back and forward*—Explore the histories and possible futures: How did this come to be? Where might it be going?
- *Tinker to explore*—Take things apart, put things together, play around with how things work.

FINDING OPPORTUNITY: *Building on close observations and explorations of complexity to see the potential for building, tinkering, re/designing, or hacking objects and systems.*

- *Envision*—Imagine what could be invented, or how things could be changed.
- *Reframe*—Rethink, refocus, or re-define a problem, opportunity, or procedure; hack or repurpose how things work.
- *Source resources*—Be proactive and creative about finding information, advice, and instruction.
- *Prototype and test*—Make models and run tests; try things out to see what works.
- *Make (and draw) plans*—Identify steps; sketch what things could look like and how they could work; illustrate ideas & processes.