Infant

Answer Key for Engineering with Blocks (8–18 months)

This handout provides sample responses to support discussions following video observations on how children engage in engineering and how educators use the M[5] Early STEAM Approach to support children's engineering experiences and problem-solving.



Video:
Engineering with Blocks (8–18 months)

Engineering with Blocks (8–18 months)– Audio Descriptive Version

Slide 24: Discuss: Engineering in Action

In what ways do children use engineering skills (for example, identifying problems, planning a solution, and testing and refining solutions)?

Possible Responses

- Children identify problems: They notice that the blocks are falling. They also notice that when the stacking gets taller, the blocks are more likely to fall.
- Children test solutions by continuing to stack the blocks in different ways and noticing what happens.

What other domains do children use to support their engineering process (for example, science, math, approaches to learning, language)?

Possible Responses

- Early math skills: Children use spatial thinking as they attend to the position and orientation of the blocks.
- Language development: The educator models language related to children's explorations. For example, the educator says "pink block" and "up" as the child stacks the blocks.

Slide 31: Discuss: Supporting Children to Use Engineering Skills

Mutual Learning

In what ways is the educator responsive to children's abilities, interests, or lived experiences?

Possible Responses

- The educator observes and responds to the ways children interact with the blocks. For example, the educator notices that one child expects the blocks to fall as the tower gets taller.
- The educator also notices when children attempt to stack the blocks but are having difficulty. She supports children by handing them another block and saying, "Try again."
- The educator might further connect to children's lived experiences by partnering with families, such as inviting families to share different objects from home that children can stack and explore.

Meaningful Investigations

In what ways does the educator offer meaningful investigations?

Possible Responses

- The educator supports children to explore and stack the blocks because children show an interest in this process.

Materials and Learning Environment

In what ways does the educator provide materials and a learning environment that supports children to engage in engineering?

Possible Responses

- The educator provides blocks for children to stack and explore. They are colorful and soft to support very young children to handle them.
- The educator might offer other types of blocks for children to stack and notice how the different sizes and materials stack differently. For example, the educator might offer larger cardboard boxes, wooden cubes, or foam blocks.

Mindful Vocabulary and Discourse

In what ways does the educator support children's science vocabulary about force and motion?

Possible Responses

- The educator uses open-ended questions to encourage children to engage in engineering. For example, the educator asks, "What can you build?"
- The educator uses language and discourse that is relevant to children's building and exploration. For example, they say: "one, two, three, four … uh-oh! Can you fix it?" This adds language to the child's process of adding blocks to the stack, describes the blocks falling over, and includes a prompt to figure out a solution to fixing the blocks after they fell.

Multiple Representations

In what ways does the educator provide different ways for children to explore stacking and building?

Possible Responses

- The children explore different ways of stacking blocks. Here are some examples of other ways the educators might provide multiple representations of stacking:
  - Explore stacking different objects such as cylinders, cardboard boxes, or foam blocks.
  - Explore different ways to create with blocks such as lining them up or creating enclosures.
  - Notice different types of towers or buildings in the environment and point out how they are tall like their block towers.

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