

## Sandbox Classroom Activity

The Classroom Activity introduces students to the context of a performance task, so they are not disadvantaged in demonstrating the skills the task intends to assess. Contextual elements include: an understanding of the setting or situation in which the task is placed, potentially unfamiliar concepts that are associated with the scenario, and **key terms** or vocabulary students will need to understand in order to meaningfully engage with and complete the performance task. The Classroom Activity is also intended to generate student interest in further exploration of the key idea(s). The Classroom Activity should be easy to implement with clear instructions.

Please read through the entire Classroom Activity before beginning the activity with students to ensure any classroom preparation can be completed in advance.

### Resources needed:

- Each student should have access to a piece of paper and writing tool<sup>1</sup>
- Some method of displaying images and/or ancillary materials<sup>2</sup>
- Whiteboard or some manner of recording student responses

### Learning Goal:

- The student will understand the context of key ideas related to the topic.
  - Planning and constructing a sandbox
- The student will understand the following vocabulary:
  - **Timber** - long, thick rectangular pieces of wood
  - **Concrete** - a liquid mixture which is poured and then hardens to form a hard structure
  - **Inside dimensions** - a set of measurements telling the size of something; such as length, width and height along the inside frame of a sandbox
  - **Outside dimensions** - a set of measurements telling the size of something; such as length, width and height along the outside frame of a sandbox

Definitions are provided here for the convenience of facilitators. Students are expected to understand these key terms as they arise in the context of the task, not to be able to recite the definitions.

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<sup>1</sup> Students who need an accommodation may use their preferred tool for writing.

<sup>2</sup> Instead of displaying the ancillary materials at the end of this document, they may be used as handouts for student.

## Sandbox Classroom Activity

[**Purpose:** The facilitator’s goal is to help students understand the planning involved in the construction of a sandbox.]

**Facilitator says:** “Today, we will get ready for the Sandbox Performance Task. This task is about building a sandbox.”

**Facilitator says:** “Who has played in a sandbox when you were younger or perhaps played in the sand at a beach or lake?” [Allow time for student responses.]

**Facilitator says:** “Does anyone have a younger brother or sister or know of a younger child that plays in a sandbox?” [Allow time for student responses.]

**Facilitator says:** “Sandboxes are great for children. You may not know it, but some schools use sandboxes as a place to conduct science experiments.”

**Facilitator says:** “I would like for you to imagine that you are asked to build a sandbox.”

**Facilitator says:** “What would you like to know about building a sandbox?” [Allow time for student responses.]

**Facilitator says:** “Sandboxes can be built in different styles and with different types of materials.”

**Facilitator says:** “What if you could only use wood, plastic, or concrete to build a sandbox? Would the type of material used make a difference in how you designed the layout of the sandbox?”

[Allow time for student responses. Lead students to understand that type of material does matter. You need to know how much material you have to work with. The amount of material you have influences the size of the sandbox that you can build. The type of material you use to build the sandbox affects the method you use to build the sandbox. Sides of a wooden sandbox can be nailed together. Sides of a sandbox made out of plastic or concrete must be poured into a form and allowed to harden.]

**Facilitator says:** How would the location of the sandbox affect the design?

[Allow time for student responses. Lead students to understand that the location must have enough space available for the design. Location can limit the size and shape of a sandbox that can be built in the space available. The sandbox must be able to fit within a location.]

### **Possible class discussion question (*unscripted*):**

- What shape would you use for a sandbox if you were building one for a science class?

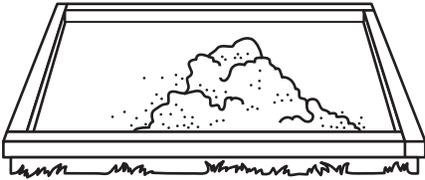
[Allow time for student responses.]

[Facilitator distributes a copy of the ancillary materials for the classroom activity to each student; or, facilitator displays a copy of ancillary materials for all to see.]

**Facilitator says:** “As we have discussed, sandboxes can be built using many different kinds of materials.”

**Facilitator says:** “Figure 1 shows a square sandbox built out of timbers. Timbers are long, thick, rectangular pieces of wood. The timbers in this picture appear to be about 6 feet long, 4 inches wide and 4 inches tall.”

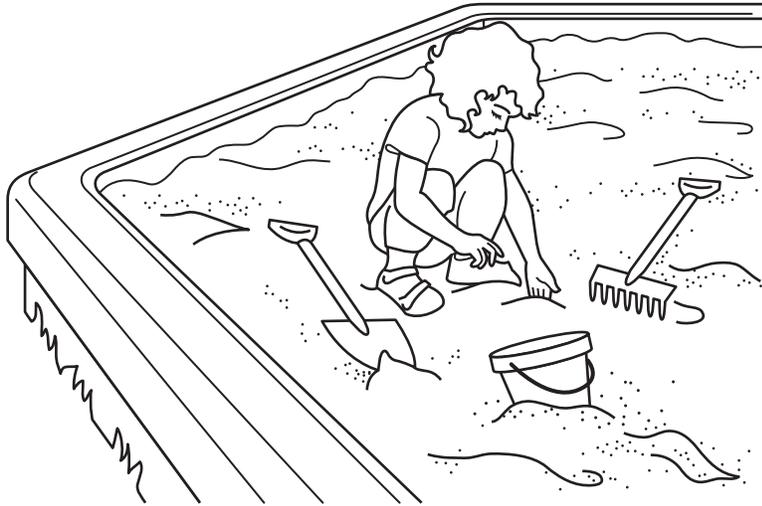
**Figure 1. Timber Sandbox**



[**Picture Description:** This picture shows a square sandbox built out of timbers. Timbers are long, thick, rectangular pieces of wood. The timbers in this picture appear to be about 6 feet long, 4 inches wide and 4 inches tall. Inside the sandbox is a pile of sand.]

**Facilitator says:** “Figure 2 shows a sandbox built out of concrete. The concrete walls are thick. They appear to be about 8 inches wide and 8 inches tall.”

**Figure 2. Concrete Sandbox**



[**Picture Description:** This picture shows a sandbox built out of concrete. The concrete walls are thick. They appear to be about 8 inches wide and 8 inches tall. There is a girl inside the sandbox playing with the sand.]

**Facilitator says:** “Can you name something else that is made out of concrete?”

[Review all answers. Facilitator can help students identify other common examples such as steps, concrete blocks, and swimming pools.]

**Facilitator says:** “All sandboxes have what we call inner and outer dimensions.”

**Facilitator says:** “Can anyone explain what I mean when I talk about the inner and outer dimensions of a sandbox?”

[Review all answers. Lead students to key concepts: Inner dimensions mean length, width and height measurements that you get when you measure along the inside wall of the sandbox. Outer dimensions mean the length, width and height measurements that you get when you measure along the outside wall of the sandbox.]

[Facilitator should demonstrate the concept of inner and outer dimensions by visually running a pointer or finger along the inside and outside walls of the sandbox in Figure 1.]

[Facilitator draws a large rectangle on a chalkboard or other display method.]

**Facilitator says:** “Let’s pretend the large rectangle I just drew is the outside of a sandbox.”

**Facilitator says:** “Who would like to draw a smaller rectangle inside this sandbox?”

**Facilitator says:** “Which dimensions do you think are represented by the inner rectangle?”

[Allow students to respond. Facilitator leads students to recognize that the smaller rectangle represents the inner dimensions of the sandbox.]

**Facilitator says:** “Which dimensions are represented by the outer rectangle?”

[Allow students to respond. Facilitator leads students to recognize that the larger rectangle represents the outer dimensions of the sandbox.]

**Facilitator says:** “Which do you think are the larger dimensions – the inner or outer dimensions of a sandbox?” [Review all answers.]

**Possible class discussion questions (unscripted):**

- Why do you think the inner and outer dimensions differ?
- What causes the difference between inner and outer dimensions of a sandbox?

**Facilitator says:** “Today we talked about things we need to know in order to plan and construct a sandbox. We talked about how sandboxes can be built out of many different types of materials, especially timbers and concrete. We talked about inner and outer dimensions of sandboxes and the difference between the two types of measurements. These ideas may help you when you complete your performance task.”

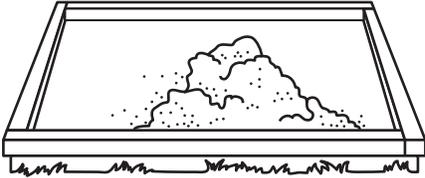
**Facilitator says:** “Does anyone have any questions?” [Allow time for student questions.]

**Facilitator says:** “You are ready to complete the Sandbox Performance Task.”

## Ancillary Materials

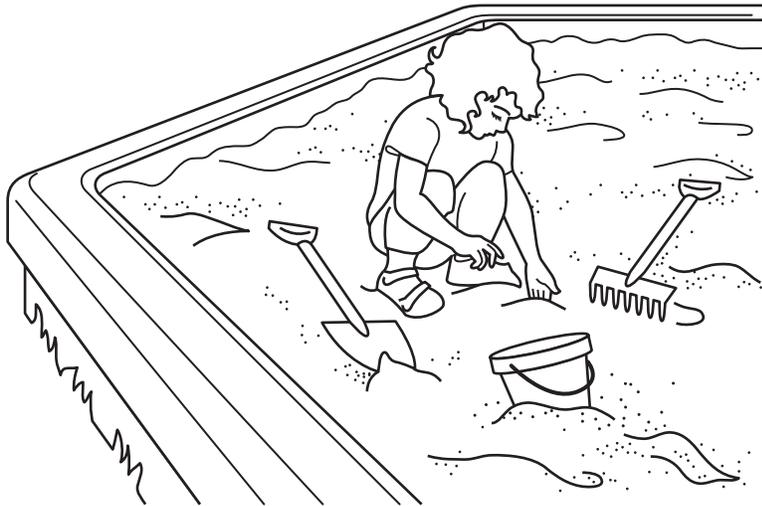
[Note: For students who are visually impaired, describe the process orally.]

Figure 1. Timber Sandbox



[Picture Description: This picture shows a square sandbox built out of timbers. Timbers are long, thick, rectangular pieces of wood. The timbers in this picture appear to be about 6 feet long, 4 inches wide and 4 inches tall. Inside the sandbox is a pile of sand.]

Figure 2. Concrete Sandbox



[Picture Description: This picture shows a sandbox built out of concrete. The concrete walls are thick. They appear to be about 8 inches wide and 8 inches tall. There is a girl inside the sandbox playing with the sand.]