

ONLINE

ELA Classroom Activity

Inventions

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.

Throughout the activity it is permissible to pause and ask students if they have any questions.

Resources Needed:

- Chart paper, whiteboard, or chalkboard
- Markers or chalk
- Pencils or pens
- Scratch paper
- Some method of displaying images and/or ancillary materials¹

Learning Goal:

- Students will understand the context of the key concepts related to the topic:
 - Inventions are created to fulfill a common human need.
 - Inventions are created to make humans' lives easier.

Students will understand the key terms:

- **inspiration:** the condition of being mentally motivated to do something creative
- **innovation:** something new or different that is introduced
- **collaborate:** to work together

Note: These definitions are provided here for the convenience of the facilitator. Students are expected to understand these key terms in the context of the task, not memorize the definitions.

¹ Facilitators can decide whether they want to display ancillary materials using an overhead projector or computer/Smartboard, or whether they want to produce them as a handout for students.

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Inventions

[Purpose: The facilitator's goal is to help introduce students to the ways in which ideas for inventions are generated. This activity will allow students to be active participants as they explore the concept of the invention process in the context of the performance assessment.]

Facilitator says: "Today we're going to do some exercises to help prepare you for your performance task. I am going to put several terms on the board, and I would like you to think about what they may have in common."

[Facilitator puts the following terms on the board:

Napkin
TV remote control
Shovel
Refrigerator

[Facilitator reads the above terms aloud.]

Facilitator says: "Now, do these things have anything at all in common?"

[Allow time for responses, with the awareness that there may be few or none.]

Facilitator says: "What did people do before there were remote controls for the television?"

[Allow time for responses. Facilitator may provide background information on the method of controlling pre-modern television sets, such as having to turn a knob to change the channel, adjust the antenna, etc.]

Facilitator says: "So, the remote control was invented to fill a need that people had. How is that true of some of the other items?"

[Allow time for responses.]

Facilitator says: "Again, these objects, like many others we could name, were created to allow people to do things, or to do things more easily. Inventors were **inspired** by their experiences and their observations and came up with certain products. Does anyone know the word **inspiration**?"

[Facilitator puts a common definition on the board. **Inspiration:** the condition of being motivated to do something creative.]

Facilitator says: "Let's look for some more examples of things people were inspired to create. What was the first thing you did this morning? You woke up, of course. How?"

[Allow time for responses, such as "My parents," "My dog," "I just woke up," etc., until someone mentions an alarm clock.]

Facilitator says: "Many people wake up with the help of an alarm clock. What need existed for that product to be invented? Not only to wake up, but . . .to wake up at a certain time. Why is there a need for this?"

[Possible responses include: To get to school or work on time, to take care of family, to walk the dog, etc.]

Facilitator says: “How well do alarm clocks work? Are they effective in getting you up in the morning? Inventors in recent years have tried to improve on this invention, and have come up with different innovations. What do you think the word innovation might mean?”

[Facilitator takes responses and then puts a common definition on the board. **Innovation:** something new or different that is introduced.]

Facilitator says: “An innovation can be different from an ‘invention’ because of the second term in the definition, something ‘different.’ An innovation can refer to a product that is improved, rather than invented from scratch. Listen as I read about some innovations made to the alarm clock.”

[Facilitator displays **Figure 1: Creative Alarm Clocks** and reads it aloud to students.]

Facilitator says: “Today we’re going to come up with our own innovations.”

[Facilitator divides class into groups of 3 or 4]

Facilitator says: “Now each group is going to brainstorm a list of ideas for a new alarm clock. Keep in mind the examples you have just learned about.”

[Allow approximately ten minutes for exercise, and then solicit examples from groups—as many as possible in five minutes.]

[Facilitator asks groups the following questions about their alarm clocks: 1. How did you come up with the idea? 2. How would your invention improve the process of waking up?]

Facilitator says: “As we have seen, many inventions have been created to fill a need in people’s lives. Often times, these inventions have been the result of many people **collaborating**, or working together, just as we have done today. In your performance task, you will learn about other ways that people have come up with inventions and innovations throughout history.”

Ancillary Material

Figure 1

Creative Alarm Clocks

The Silent Alarm Clock. As its name suggests, the Silent Alarm Clock uses no sound to wake you up. Instead, you wear a thick rubber band around your wrist. When it is time to wake up, the band vibrates. A simple shake of the wrist will allow the user to snooze. But every time the alarm buzzes again, it takes more and more motion to shut it off.

The Bacon Alarm Clock. This alarm, a wooden box in the shape of a pig's head, uses no sound either. Instead, when it's time to get up, two heat lamps turn on inside the box and start cooking pieces of bacon inside. The aroma is supposed to make you hungry and get you out of bed for breakfast.

The Puzzle Alarm Clock. This clock has puzzle pieces set into holes of certain shapes. When the alarm sounds, the pieces go flying. The alarm does not shut off until you have found the pieces and placed them back in the correct hole.

Clocky. This device looks like a regular clock radio but has a large rubber wheel on each side. When you hit the snooze button, Clocky jumps off the table and rolls around the room until it finds a hiding place. Then the alarm goes off again, forcing you to get out of bed and find it in order to turn it off.

Sources:

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http://www.oddee.com/item_96922.aspx