



Science to the Rescue

6th grade

Science/Drama

By Linda Gold

Core Curriculum, Science, Standard #6

Students will understand properties and behavior of heat, light, and sound.

Drama, Standard 6.T.CR.6:

Develop dialogue and actions that focus on the development and resolution of dramatic conflicts.

Drama, Standard 6.T.P.2:

Perform as a productive and responsible member of an acting ensemble in both rehearsal and performance situations.

Drama, Standard 6.T.R.1:

Demonstrate audience skills of observing attentively and responding appropriately in classroom presentations, rehearsals, and live performance settings.

Objective: The students will demonstrate their understanding of the properties of heat, light and sound by writing and performing the ending to a play. The students must solve the problems presented in the first part of the play by using heat, light and sound. This lesson is meant to be a review of the subjects where the students will have the opportunity to apply knowledge they have already gained. It can be used as an assessment.

Materials:

You will need to make copies of the attached play and rubric.

Warm-up: Fruit Basket Variation

For this version of the game, we will be using the three types of heat; conduction, radiation and convection. One chair for each participant is placed in a circle. One player stands in the middle of the circle. This player does not have a chair. Assign each participant, including the player in the middle, one of the types of heat. They will remain the same type throughout the game. Decide how each type of heat will move and demonstrate the movements to the class. Explain to the students that their goal is to stay out of the middle. The goal of the person in the middle is to get out of the middle. The center person will call out a type of heat and everyone who has been assigned that type will trade chairs. While they are trading chairs, the player in the middle will sit in one of their chairs, leaving a new player in the middle. If the player in the middle would like everyone to change places, they will say the word heat. When heat is called out, everyone must find a new seat. They are not allowed to move over just one seat. They must move at least two places. Players are also not allowed to return to the seat they were just in. However, they may return to that seat later in the game, if they choose. Some children love to be in the middle and will hang around the middle, waiting for everyone else to find a seat. I always add the rule that no one can be in

the middle more than once. If they end up in the middle more than once, the teacher should choose someone to take their place. I do not allow the students to pick someone. I have found that there are those who will hang around the middle so they can pick the next person!

Instruction: Heat, Light and Sound

Hand the students the rubric. Ask the students if there are any terms that they feel they need to go over. When a question is brought up about one of the terms, ask the other class members to define it. If they cannot, then the teacher should give a brief explanation.

Science to the Rescue!

Choose eight students to act out the script for the class. When they are done, ask the class what the four problems are that they have to solve. Put the students into four groups. Give each group one of the problems and have them brainstorm ideas of how to solve the problem. Make sure they know that they must use heat, light and sound to solve the problem. The students are to write their portion of the script, in script form. Looking at the first part of the script will let them know what a script should look like.

Once the script is written, make a copy for each member of the group. Have each group act out their endings. As they act out the endings, use the rubric to check off the words or phrases that they use.

Assessment/Evaluation

After each group performs, discuss their ideas and the use of the terms. Also discuss their performance. First ask the audience what the group did well and then ask them for one or two ways they can make the performance better.

Science to the Rescue!

Though the script is written for 8 actors, any number of performers may be used by combining or dividing parts.

All actors are lying on the floor. One by one they start to stir and sit up.

1st Actor: Where are we?

2nd Actor: I don't know. How did we get here?

3rd Actor: I have no idea.

4th Actor: It looks like a deserted island. Maybe we should have a look around

5th Actor: What's this? It looks like some kind of a message. "Greetings Earthlings. We have gathered here, some of the greatest minds on your planet to test your scientific intelligence. If you prove to be intelligent, we will leave your planet. If you fail the test, your world will be destroyed.

6th Actor: Destroyed? What does he mean, destroyed?

5th Actor: Wait a minute. There's more. "Using the principles of heat, light and sound, you must solve the problems of shelter, food and water. You must also figure out a way off of the island. We will be watching you and listening to your every word. We will reward you points for the correct use of the words and phrases listed on the back of this note. There are items on this island to help you but you must find them. If you fail to complete any of the tasks then we will activate the laser beams we have pointed at your planet."

6th Actor: I guess that's what he means by destroy. Is there anything else?

5th Actor: No, just the word list on the back

7th Actor: Well we better start looking for the objects. Spread out and see what you can find.

8th Actor: We better look for fresh water and food too, while we're at it.

(Actors spread out and then pretend to find things.)

4th Actor: Hey, here's a tuning fork.

2nd Actor: I found a magnifying glass.

3rd Actor: That looks like a rainbow over there. I wonder... it's a prism!

1st Actor: A pot with a lid? That's weird.

7th Actor: Weird, but useful! Here's an ax.

8th Actor: That will come in handy. And so will this knife.

6th Actor: Here's a pane of glass. Hmmmmm... I wonder what we can use this for.

5th Actor: I found a mirror.

2nd Actor: Let me see that. *(Takes the mirror and begins fixing hair.)*

5th Actor: Give me that before they start up those lasers.

3rd Actor: Here's three more items. *(Name any 3 additional items that you need to help you with your tasks.)*

4th Actor: Did anyone find any food or fresh water?

1st Actor: There are coconuts up in those trees but they're impossible to climb.

2nd Actor: There's probably plenty of fish in ocean but the shore is lined with trees so it's difficult to see in the water. I wish there were some way of shining light on them.

8th Actor: Hey, here's some fresh water. I'm not sure it's safe to drink though.

7th Actor: Okay everyone; let's do some brainstorming.

(Your job is to finish the script. Decide how heat, light and sound can help you solve the problems of shelter, food and water. Then determine how to get off of the island by using heat, light and/or sound. Remember, the fate of the world is depending on you!)

<u>Terms</u>	<u>Excellent</u> (2 points) (demonstrates an understanding of the term)	<u>Good</u> (1 point) (uses the term but not in the correct context)	<u>Oops</u> (0 points) (does not use the term)	<u>Comments</u>
angle of incidence				
angle of reflection				
absorption				
conduction				
conductor				
convection				
medium				
pitch				
prism				
radiation				
reflection				
refraction				
spectrum				
vibration				
insulation				