



Fun in the Summer

Group Activity: Science – What Melts in the Sun?

Objective:

In this activity, students are engaged in answering a scientific inquiry by using logic-based evidence, observation, and prediction to report formulated explanations linked to scientific knowledge in an estimation task.

Materials:

- Prediction worksheets (provided)
 - Muffin pan
 - Various items that will melt (chocolate square, ice cube, butter, cheese cube, peeled crayon)
 - Various items that will not melt (Lego®, rock, marble, wooden block, quarter)
 - Pencils (1 per student)
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Duration: 20 minutes

Preparation:

1. Print the prediction worksheets (1 per student).
 2. Set up a demonstration table in the front of the room visible to all students. Collect all needed materials and place them on or near the demonstration table.
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Safety Note:

It is recommended that all science experiments and activities be conducted only under adult supervision. Adults should handle or assist with all materials. Please check with your school's administration to see if science materials are approved for use in the classroom.

Supplementary Information:

- For learners who would benefit from a more detailed explanation of this exercise, explain the following principle after the experiment:
 - When heat energy is added to an item, the water molecules of that item begin to move around. As the item gets hotter, the molecules move more quickly. When this happens, the structure of the molecules begins to loosen and the item begins to melt. This is called 'phase transition' because the item goes from being a solid to being a liquid.
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Variation:

- Use other or additional items than the ones listed and create your own prediction worksheet with new items

Activity Script:

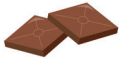









We recommend using the following verbal cues as you model each step.

1. **“Today we are going to find out what items do or do not melt in the sun. If you leave some items in the sun for too long, they will melt because the sun can be very hot. Some items are made of material that melts, and some items are made of material that does not melt.”**
[Gather students around the demonstration table and indicate the materials.]
2. **“First we are going to look at all of the items we are going to test. Will you all please help me name the items when I hold them up?”**
[Hold up each item randomly and assist students in labeling the items.]
3. **“Next, we are going to put each item in the muffin pan. We are going to place each item by itself in a section of the pan. Who would like to help me do this?”**
[Choose a student volunteer and assist them in putting each item in a section of the pan.]
4. **“Now it is time to make a prediction about each item. We are going to place this pan outside in the sun and wait to see which items melt. When something melts, it goes from being a solid—or hard—to a liquid, like water or juice. We will check the pan every hour to see if the items have melted or not. Before we do that, let’s make predictions about what will happen. I am going to pass out prediction worksheets and pencils, and I want you to circle your prediction about each item.”**
[Distribute prediction worksheets and pencils to students. Prompt them to circle their predictions for each item.]
5. **“Now we are going to bring our pan outside and leave it in a sunny area. Line up and follow me outside.”**
[Bring the students and the pan with items outside. Assist the students in finding a sunny area to leave the pan in. If time allows, you may choose to wait a few minutes to see which items start melting. Continue to check the pan throughout the day (about one time an hour) to see which items melt in the sun.]
6. **“Let’s discuss what happened to the items that we put in the sun. Which items melted, and which items stayed the same? Why do you think some items melted and others did not? Each item has its own temperature that it will melt at called a ‘melting point.’ If the sun makes that item as hot as its melting point temperature, it will begin to melt. Our items that melted reached their melting points from the sun’s heat.”**
[Discuss what happened to each item and how some items took longer to melt than others.]
7. **“Were your predictions correct?”**
[Revisit the prediction worksheets. Prompt students to circle “Yes” if their predictions were correct, and “No” if their predictions were incorrect.]

Name: _____

What Melts in the Sun Prediction Worksheet

Place an X in the “will melt” or “will not melt” box for each item.

Item	Will melt	Will not melt	Was my prediction correct?
Chocolate 			Yes 😊 No ☹️
Ice cube 			Yes 😊 No ☹️
Butter 			Yes 😊 No ☹️
Cheese cube 			Yes 😊 No ☹️
Crayon 			Yes 😊 No ☹️
Lego 			Yes 😊 No ☹️
Rock 			Yes 😊 No ☹️
Marble 			Yes 😊 No ☹️
Wooden block 			Yes 😊 No ☹️
Quarter 			Yes 😊 No ☹️