

**There's A Property For That!**

**Grade 5 Matter & Energy**

<h2 style="margin: 0;">Lesson Plan</h2>	Assessment	Experiment
	Cross-curricular	Language
<p><b>Big Ideas</b></p> <ul style="list-style-type: none"> <li>The properties of materials determine their use and may have an effect on society and the environment.</li> <li>Matter that changes state is still the same matter.</li> <li>Physical change refers to the fact that a substance can be changed from one form to another.</li> </ul> <p><b>Overall Expectations</b></p> <ul style="list-style-type: none"> <li>Conduct investigations that explore the properties of matter and changes in matter.</li> </ul>	<p><b>Specific Expectations</b></p> <ul style="list-style-type: none"> <li><b>2.4</b> use scientific inquiry/experimentation skills to determine how the physical properties of materials make them useful for particular tasks.</li> <li><b>3.2</b> identify properties of solids, liquids, and gases and state examples of each.</li> </ul>	

**Description**

In this lesson, students will determine how the physical properties of materials make them useful for particular tasks. After considering an example together as a class, students will test materials and determine their effectiveness based on a simulated environmental disaster - an oil spill.

**Materials**

Student Observation Sheet  
 Testing Materials such as:  
 Cotton balls, paper towels, straws, cardboard, paper, sponges - with different sized holes, Q-tips, terry cloth, newspaper, salt and dish detergent  
 Vegetable oil  
 Water  
 Containers for the “environmental disaster”

**Safety Notes**

You may wish to consider having students wear gloves and/or safety goggles as they work as they will be using vegetable oil and possibly other substances for cleaning.

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## Introduction

Many people love ice cream. The cold treat can often be found stored in the freezer at your local grocery store. The conventional containers that we find this treat in are usually made of cardboard and sometimes have a waxy liner on the inside to ensure that it doesn't leak through. Ask students if they think this is the best material for the container for this treat. Ask them why they think that might be. Ask them to consider if the cardboard container is the best material for their treat if they have a long way to travel. Have a discussion with students on which of the following materials they think would be better for a longer distance and why: paper, aluminum foil, plastic, glass, wood or a clay container. Ask them to consider the physical characteristics of these materials and why they may or may not be ideal for the task. Let students know that the physical properties of materials make them useful for particular tasks. Having a liquid or a gas would not be ideal to contain ice cream because as the ice cream melts, it changes state and becomes a liquid and therefore needs a solid container to ensure that it is contained.

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## Action

Now that we know that different materials have properties that make them ideal for tasks, let students know that there has been a natural disaster. An oil spill has occurred and they have to determine the best materials needed to clean up the spill. The materials they will have to use and to test are: Cotton balls, paper towels, straws, cardboard, paper, sponges - with different sized holes, Q-tips, terry cloth, newspaper, salt and dish detergent. Have students hypothesize the best materials and way to clean up all of the oil in the spill and suggest reasons for choosing their materials.

Once they have performed their tests and recorded observations, have students share their findings with the large group and determine which group had the best clean-up materials and why those materials were most effective.

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## Consolidation/Extension

You may wish to have students design their own inquiries into other properties of materials that make them ideal for specific tasks. The curriculum document suggests cleaning up a liquid spill in the kitchen but many different tasks exist.

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## Resources

Mission Materials Online Activity -

<https://www.abpishools.org.uk/public/activescience/module15/game.html>

What's My Property - <https://www.youtube.com/watch?v=nlSemv2fLN8>

Organizing Properties - <https://www.youtube.com/watch?v=zD7W5O0BH7g>