

Properties of Matter

LESSON FOCUS AND GOALS

- Standard Grade 8.1.2: Obtain information about various properties of matter, evaluate how different materials' properties allow them to be used for particular functions in society and communicate your findings. Emphasize general properties of matter. Examples could include color, density, flammability, hardness, malleability, odor, ability to rust, solubility, state, or the ability to react with water.

MATERIALS NEEDED (FROM ANY GROCERY STORE)

- vegetable oil
- water
- glass cups
- salt
- flour
- aluminum foil
- coins

LEARNING OBJECTIVES

Help 2nd-grade students understand and demonstrate a few physical properties of matter. Today I will do a demonstration that will help you teach your students about the different properties of matter. You can either demonstrate and have all the students watch, or since the supplies are cheap, it would be easy to get in small groups and have the students do a hands-on project.

STRUCTURE / ACTIVITY

Begin by showing students the concept video that explains the physical properties of matter. Then allow the students to complete the crossword puzzle that will help them review the concepts. Finally, you can help the students complete the experiment as listed below and fill in the worksheet as they go:

Part 1: The first property of matter to demonstrate is density. To conduct this experiment you will just need vegetable oil and water. You can put dye in the liquids to make it more fun for the students. Start by pouring water into a glass cup and then have the students slowly pour the oil into the water. Take note of the separation between the two liquids. You can even mix them a little bit to see them go back to their separate layers. Using what you know about density, determine which liquid is denser than the other.

Part 2: The second property of matter to investigate is solubility. This experiment is also very simple but helpful to understanding solubility. For this experiment, you will take two glasses of water. In the first one, students will measure out a spoonful of salt and stir. Take note of what is the solute and what is the solvent. For the second cup, students will measure out a small spoonful of flour and stir. Notice that it doesn't dissolve in water, it is insoluble.

Part 3: The third property of matter we will investigate is malleability. We will take a look at some aluminum foil. Explain to your students that a malleable metal can be shaped by means of rolling or hammering and can be made into thin sheets. Students can play and mold the aluminum foil. You should also show them some coins which are made of copper and nickel to show how this property helps metals be used. These are also malleable metals that can be shaped and squished under pressure

CONCLUSION

Finally, think about the properties that you discovered and consider how they would help make these things useful to us. For example, knowing that oil is less dense than water, you can use this property to make a DIY lava lamp! There are also more everyday functions than craft projects that these properties help with. For example, sugar is dissolved in many liquids to make tasty drinks that we consume often.