



# Lesson 1: Water, Water Everywhere

*In this lesson, students will discover the vital importance of water as a natural resource as well as water's specific observable properties.*

## Focus

Water as a Natural Resource

## Focus Questions

- Why is water important to me?
- How are water, rocks, sand, soil, and oil similar? How are they different?

## Learning Objectives

- Students will be able to use data to compare the observable properties of water to the properties of other earth materials.
- Students will be able to explain the difference between natural and human-made resources.
- Students will be able to explain the importance of water to humans.

## Materials Needed

Our Water PowerPoint	Flushable Wipes
Jug of clean water	Catch bins
Clear Jars(2)	Trash bags
Toilet Paper	Paper Towels
Large Spoon	Toy food
Plastic Drop Cloths	Rocks (various types)
Clear cups	Sand
Water bottles	Soil (various types)
Vegetable Oil	
Construction Paper/ Balls	

## Engage

Begin the lesson by asking the students, "Who has seen a Teenage Mutant Ninja Turtles cartoon?" Several students are likely to raise their hands. If there are many students who are



**Grade Level:** 1

## Key Words

Natural Resource, Earth Material, Salt Water, Fresh Water, Polar Ice Caps, Glaciers, Scientific Observation, Opinion, Properties, Rock, Soil, Sand, Oil

## Prior Knowledge Required

- Students should know and be able to recall their five senses.
- Students should also be able to explain the difference between a solid and a liquid (solids have a defined shape and liquids take the shape of their container).

## South Carolina Science Standards and Performance Indicators Addressed

1.E.4A.1



unfamiliar with the characters, you can show a picture of the cartoon (a picture is included in the *Our Water* Power Point).

Then, ask the students, *"Do you know where the turtles live?"* Students should respond that the characters live in the sewers.

Next, ask, *"What else is in the sewer system?"* You are likely to get various answers. If necessary, ask leading questions that will allow students to conclude that water is a major component of the sewer system.

From here, begin to discuss the importance of water to humans. Pose the question, *"Why is water important to you?"* You will receive a variety of answers. Based upon student answers, ask the following questions to continue the discussion:

- *Is the earth is made of more land or water?*
- *Do you have water in your body? How much?*
- *What do people use water for?*
- *Is all water on earth safe to drink? If not, how much water on earth is safe to drink?*

You can use the *Our Water* PowerPoint as a visual guide during your discussion.

### Explore

After your introductory discussion about water, ask students, *"What are your five senses?"* Be sure they know all five: Sight, Smell, Hearing, Touch, and Taste.

After this, continue by asking, *"Using your five senses, how can you describe water? How does it look, smell, sound, feel, and taste?"* Summarize the description of water.

Further the discussion by telling students how scientists use observations. You could say something like the following: *"When you tell me about water using your five senses, you are acting like scientists! Scientists use their five senses to observe and learn about the world around them. Scientists can observe properties of objects like size, shape, color, texture (how something feels), and shininess. Also, scientists use many tools to make observations like magnifiers, rulers, and balances. Now, we are going to practice being scientists! We are going to observe different objects using our senses!"*

### Be sure students know the following:

- The earth has more water than land, but only a small amount is drinkable.
- Saltwater makes up most of the water on earth.
- Freshwater makes up very little of earth's total water supply. It is drinkable.
- Most of the human body is water.
- No living thing can survive without water.
- Humans use water for many things (see list on PowerPoint).
- Water is a natural resource and is one of the most valuable on earth. Water is liquid.
- Natural resources are substances that come from nature and are used by people.
- Water is clear and feels wet.
- Water takes the shape of its container, which includes ponds, lakes, and oceans.
- Water moves by flowing downhill due to gravity and eventually flows over the ground, into rivers, and finally into the ocean.



Next, separate the students into groups. Give each group a few pieces of toilet paper, a flushable wipe, various rocks, a container of sand, and a container of soil. Also, be sure to put a drop cloth under the students as this can get messy.

Instruct students to use their five senses to observe the properties of each object (except for taste). Ask questions like the following:

*Which objects are similar? How?*

*Which objects are different? How?*

Also, have the students physically move the objects into groups based on similarity. As an additional part of the activity, you may have students create tallies of each property represented by the items. Explain that scientists classify things based on similarity all the time. Students may sort the rocks, sand, soil, and paper by color, size, shape, texture, and/or luster (Model this for them if necessary). In addition, during the activity, have students put rocks in order based on size from a distance (practicing indirect comparison).

Next, have students answer the following question about their objects: *What materials are each of your objects made of?*

Next, using two different clear jars, fill each jar with clear water. Place a flushable wipe in one jar and toilet paper in the other. Have students predict which one will break down/dissolve completely in the water (wipe, toilet paper, or both)? Students should verbalize the reason for their prediction.

Let the jars sit for the remainder of the lesson (stir them occasionally with a large spoon).

### **Explain**

Summarize the exploration activity. Next, refer to the two jars created earlier. Ask students questions such as *"Which one dissolved more? Which one would be better to put in the toilet when you use the restroom? Why?"* Students should observe that the toilet paper dissolved much more efficiently than the flushable wipe. Once they understand this, explain that this is the reason we do not put anything except toilet paper in the toilet. Everything else can get stuck. When it comes to what goes in the toilet, follow the three P's: *Poop, pee, and paper!* (Students love this!)

### **Be sure students know the following:**

- The appropriate, safe ways to use their five senses in observing.
- Scientists always investigate the world, try to answer questions, and make predictions.

### **Possible Misconception:**

Students sometimes confuse scientific observation with opinions. You may need to explain that scientific observations are always the same no matter who is making the observation whereas opinions may differ from person to person (ex: flower is yellow vs flower is pretty).

### **Be sure students know the following:**

- All scientists observe their world and classify materials such as rocks, sand, and soil based on their properties, including physical appearance.
- Rocks are hard, solid, non-living earth materials. Sand is made of tiny pieces of rock.
- Soil is at the top of earth's surface. It can be composed of small pieces of water, sand, rock, air, and dead organisms.
- Topsoil is the most nutrient-rich and best for supporting life and growing plants.



## Elaborate

Referring again to the objects that the students observed in the explore section. Using two different jars, mix water and sand in one and water and oil in the other. Then, ask students to predict what will happen in each jar after it is shaken.

Shake each jar and let them sit for a few minutes. Ask students to describe what they are observing. The sand should settle down to the bottom of its jar, and the oil will float on top of its jar as it is less dense than water.

Ask students *"Which mixture would be easier to separate again? Why? How would you separate them?"*

Ultimately, students should realize that a mixture of oil and water is much harder to physically separate than water and sand. Oil and water can be separated using emulsifiers or detergents. Students will visit this subject again in another lesson.

Therefore, when you pour oil (anything other than water) down the sink, those things stay in our pipes and clog them. *When it comes to oil, fats, and grease in the kitchen: "Cool it, can it, and trash it!"*

## Evaluate

As an informal check for understanding, there are two games students could play. For the first game, you will need two large containers of some kind (buckets would work well). You will also need toy food items, objects to represent poop and pee (you can use brown/ yellow balls for this or balled up pieces of yellow/ brown construction paper), and toilet paper. One bucket should represent trash, and the other bucket should represent the toilet. During the game, instruct students to throw the objects in the correct bucket. In other words, food goes in the trash, and poop, pee, and toilet paper go in the toilet.

As a second game or activity, you can have students gather the toy food and whatever other objects that you wish (other toys, blocks, etc. that you may have in your classroom). Then, have the students sort the objects into groups based on various properties such as color, size, shape, etc.

## Resources

"Support Guide 3.0 for First Grade." South Carolina Department of Education Office of Standards and Learning, June 2018.

## For More Information and Feedback:

We value your feedback on this lesson, including how you use it in your formal/ informal education settings. Please send your comments to:  
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## Acknowledgements:

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