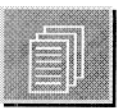
OBJECTIVE

Expand the student's relationship to water beyond drinking and swimming to include personal health issues like how the children feel and water's importance to plant life and the growing of food.

Grade Level/Subject Area

K – Grade 2, Sciences



Materials Required

Paper, pencil, crayons, paper towels, saucer-like containers, oil, food coloring, a glass, sugar, water, a penny, a piece of fabric, and a piece of styrofoam.

Anticipatory Set

In what way will you activate their PRIOR KNOWLEDGE and EXPERIENCE to help them relate to today's lesson?

Through lessons and activities.

Assessment of Comprehension

How will you determine that the students have understood/learned the objectives?

Teacher observation
Q&A
Completed assignment

Lesson 1 – We Are Water

1. Up to 75 percent of our bodies are made of water. This water forms the method of transportation, like roadways, for essential nutrients to reach every part of our body.

2. Water is the single most important substance that the body needs to keep operating. We can live up to five weeks without food. We can only live a few days without water.

3. Water is involved in every function of our body. Water helps us digest our food. Water forms a cushion to protect our vital organs, like our heart, lungs and stomach. Water keeps our temperature level. Water acts as a lubricant, allowing our joints to move. This includes our wrists, fingers, feet, knees, hips and elbows. And, water is what carries the waste products from our bodies.

4. Our brain is up to 85 percent water. Our blood is almost all water. Our muscles are about 75 percent water. Even our bones have considerable water, 22 percent or almost one-quarter.

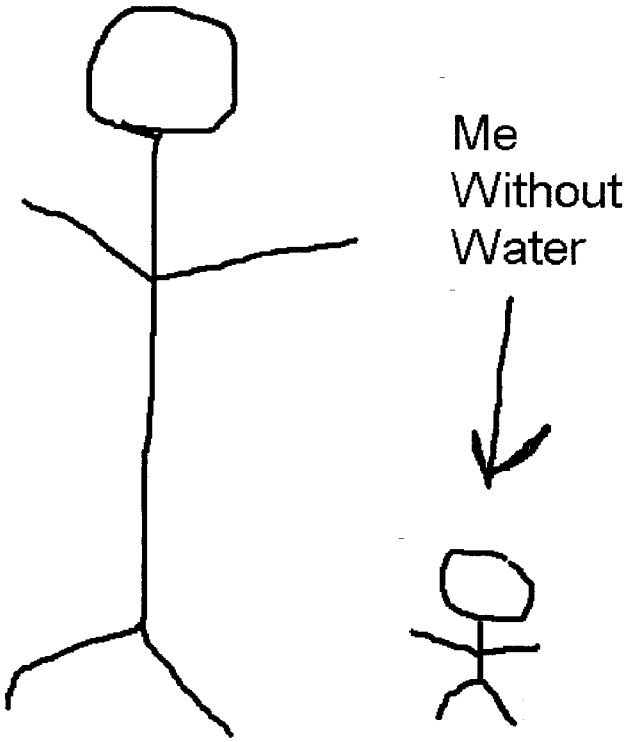
5. For these reasons, we should all drink eight glasses of water a day. Sodas and drinks that contain caffeine or alcohol don't count. They are called diuretics and actually make the body lose more water than the drink puts in.

6. And, we should not wait until we are thirsty to drink. Thirst is one of the signs that your body is already well below its level of needed water. We should drink water all day whether we are thirsty or not.

Activity

Supplies: Paper, pencil and crayons

Show the students the stick figures on the next page. Ask them to draw what they, or something else like a dog or tree, would look like first with water, and then without water.


Me
Without
Water

Lesson 2 – Why Water is Extra Special

1. Water is special because not only it is the very foundation of life, but because it is unique among the elements.

2. Most things fall to the Earth because of gravity, but water can also rise and climb.

3. Water moves to the tops of tall trees, up from the roots through tubes, evaporating from openings in the leaves. This is how a tree gets its food. Water will also climb up paper.

4. Water also sticks together, and it absorbs and mixes with most things. It will mix with detergent, water-soluble dye, and many pollutants in the Earth. One of the few things it will not mix with is oil.

5. Most things when filled with water get very heavy and drop to the bottom of a glass of water. Water on the other hand gets lighter as it becomes ice and will float on top of a glass of water.

6. Did you know that 10 billion molecules of water would fit on the head of a pin?

Activities

Supplies: paper towels, saucer-like containers, food coloring, oil and a glass.

Roll the paper towel and place it vertically rising from a saucer full of water with food coloring. Watch the colored water rise in the paper towel.

Fill a glass with water and a few drops of oil. Mix vigorously. Then have the class watch as the oil and the water separate.

Lesson 3 – Water's Changing Shapes

1. If you think that everything has a shape, that's not true. Water doesn't really have one. It changes shapes as well as form.

2. When water is in liquid form, it takes the shape of its container. Every time it is moved from one container to another, it takes on another shape.

3. Water can become three separate things – a liquid, a gas and a solid. We see water as a liquid when we take a bath or fill a glass. It becomes a gas

when heated and rises, like when we see the steam coming out of a boiling pot or rain evaporating from a hot sidewalk. The water doesn't disappear; it turns into a shapeless and sometimes invisible gas and rises into the sky. In the sky, it forms clouds, and when it gets cold it becomes heavy again and falls to the Earth as rain. We see water as a solid when we make ice or see snow or hail.

4. Only when water is a solid does it take on a shape. But, as soon as it melts, it becomes shapeless again.

Activities

Ask students to watch their parents boil a pot of water and observe the water turn into a gas and rise into the air. Also, ask them to watch an ice cube melt and become shapeless. Have the students bring in a paper describing what they saw.

Lesson 4 Water Makes Things Float and Disappear

1. One of the unique things about water is that it is constantly in motion. Without a container to trap it, it moves around and around. And, it takes whatever is in it with it.

2. Some things totally dissolve in water so that you can no longer see them. Other things sink to the bottom of the water and disappear.

3. There are some things that sink to the bottom, but when they fill with water, they once again float to the top.

4. Other things that are lighter than water float on the top and move wherever the water goes.

Activity

Supplies: sugar, water, glass, a penny, a piece of fabric, and a piece of Styrofoam

Fill a glass with water. Mix in sugar to show how some things dissolve and disappear. Then place the penny in the glass, and watch it sink. Wet the fabric and drop it in the glass, it will sink and float. Then place the piece of Styrofoam in the water and watch it float without sinking.

Lesson 5 – Plants Drink Water Too

1. All living things need water to survive. A plant is a living thing. Therefore, plants drink water.

2. Plants get water in several ways. They drink it through their roots in the ground. Or they absorb it through their leaves or stems, or, in the case of trees, through their leaves, branches or trunks.

3. Plants use minerals in water as food to make their parts grow.

4. Plants absorb carbon dioxide, which is poison to humans, and create oxygen, which is what we breathe.

5. Plants also cleanse dirty water by filtering out pollutants. Part of this filtering takes place as rainwater enters the ground and seeps into groundwater below the surface.

6. A large part of this cleaning occurs in wetlands, or soggy areas that lie between land and rivers, streams, lakes and the ocean. These wetlands act much like our body's kidneys to filter out harmful wastes that flow over land before they reach the water. They do this through roots submerged in the wetland.

Activity

Supplies: a stalk of celery, a package of food coloring and plastic cups

Ask students to put a stalk of celery in a plastic cup with different colors of food coloring. Let the celery stalks soak in the colored water over night.

The next day, show the students the color in the celery.

Explain to students that plants have a tube system that carries dissolved food from the soil to all of the plant's parts