Teacher: Monica Sijder

Title: Can we use all the water on Earth? – Adapted from Project WET -Blue Planet

Grade level: prek-2
Length of Lesson: 1-week 30-minute intervals for students to work on assignment

Materials: added as attachments

Next Generation Science Standards:
K- ESS3-1 Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

Developing and Using Models
Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, storyboard) that represent concrete events or design solutions.

- Use a model to represent relationships in the natural world.

K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and /or other living things in the local environment.

ESS3.C: Human Impacts on Earth Systems

- Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.

ETS1.B: Developing Possible Solutions

- Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. *(secondary)*

Cause and Effect
Events have causes that generate observable patterns.

Obtaining, Evaluating, and Communicating Information
Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.

- Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas.

ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area.

Developing and Using Models
Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.

- Develop a model to represent patterns in the natural world.

ESS2.B: Plate Tectonics and Large-Scale System Interactions

- Maps show where things are located. One can map the shapes and kinds of land and water in any area.

Patterns

- Patterns in the natural world can be observed.

Lesson objective(s):
Students will be able to:

- Estimate the percentage of Earth's surface that is covered by water.
- Be able to locate locations such as rivers, lakes, groundwater, and the ocean.

- Predict what a probability sample will reveal about the relative coverage of land and water

ENGAGEMENT

- Teacher will ask the students about their water usage:
  "Who flushed the toilet today?"
  "Who took a shower today?"
  "Who is able to blink?"
  "Who had breakfast?"
  "Who changed their pets drinking water?"
  "Who knows ho many gallons of water it takes to make a hamburger (560-1000), a pair of jeans (over 1500)?
- Students are able to answer the questions that the teacher is asking them. Those questions allow for the students to realize how everything around us uses water. It also makes then understand that our bodies need water to survive as well.
- Teacher introduces water conservation to the students

EXPLORATION

- Students will look at a poster of Earth or an inflatable Earth globe
- Teacher will ask students "Does Earth have more water or land on the surface?"
- Students will be guided through images of Earth from NASA – Images of the Day/Gallery
- Students will fill out the worksheet "How Many Gallons? .

EXPLANATION – Student Experience

- Students are placed in groups of 2 (Buddy Activity)
- Students will estimate how many times their thumb will land on either "Land" or "Ocean" from the inflatable globe

Teacher will facilitate student activity:

- Teacher will review vocabulary for the students to review:
  Estimate, guess, random, probability, rivers, lakes, groundwater, and the ocean, thumb
- Teacher will pass out an inflatable globe of Earth to each group
- Teacher will demonstrate how to toss the inflatable globe of the Earth

ELABORATION

- Teacher will review their finding and handout a coloring sheet of the planet Earth for students to color
- Teacher will ask students to come up with ways they can conserve water at home
- Teacher will ask students Ask students where water on Earth can be found

EVALUATION – Assessments

- Ask students why some call Earth the Blue Planet
- How would they feel if Earth was called Water?
- Ask them why Earth is used as the name for our planet
- Ask students what they would name our planet

Name: _____

HOW MANY GALLONS? How many gallons of water do you think we use?

BRUSHING YOU TEETH

_____GALLONS OF WATER USED

WASHING THE DISHES

_____GALLONS OF WATER USED

TAKING A SHOWER OR BATH

_____GALLONS OF WATER USED

Name_____

Water on Earth

Circle One: Do you think there is more water on Earth or more land on Earth?

WATER LAND

With your teachers help.

1. Take the inflatable Earth globe.
2. Throw the globe to your partner.
3. When you catch the globe is your right thumb finger on water or land? Record your answer by marking a tally on the chart below.
4. Repeat steps 2-4 ten more times.

Land (Green)	Water (Blue)
Example: l l l l	 1 1 1

Look at your answer to the first question:

1. Discuss with your partner. Do you still think there is more water or land on Earth? Why?

References

NASA. (n.d.). *NASA Image of the Day*. https://www.nasa.gov/multimedia/imagegallery/iotd.html

Project WET Foundation & Project WET International. (2011). *Project WET Curriculum and Activity Guide 2.0*. Project WET Foundation.