

Globe Toss!

Educator Lesson Plan

Original activity by Katie Greganti Hall and Lundie Spence, COSEE-SE (2007);

Updated by E.V. Bell, S.C. Sea Grant Consortium (2020)

About This Activity

Target Grade Levels: K – 6

South Carolina Education Standards

- Science Standards: 1.E.4; 2.L.5; 3.E.4; 4.E.2; 5.E.3
- Math Standards: K.NS.2; K.NS.3; K.NS.4; 1.NSBT.1; 1.NSBT.3; 2.MDA.10; 3.NSF.1; 3.MDA.3; 6.NS.9; 6.RP.3

Ocean Literacy Essential Principle

#1: The Earth has one big ocean with many features.

Focus Questions

- Is Earth mostly covered by water or land?
- Why is the ocean so important?
- How do humans impact the ocean?

Objectives

- Determine whether Earth is covered mostly by water or land.
- Describe some reasons why the ocean is important to humans and other animals and plants.
- Discuss ways in which humans positively and negatively impact the ocean environment.

Materials

- 16" inflatable globe; alternately, a beach ball with outlines of the continents and ice caps drawn on can be used.
- Copies of data sheet (if working individually or in small groups).
- Flipchart, Smartboard, or whiteboard (if conducting this activity as a class).
- Writing utensils for data sheets and/or flipcharts, Smartboard, whiteboard, etc.
- Optional: gloves and/or hand sanitizer

Activity Details

Group size: Between 2 and 30 participants


Time (including set-up): 15 – 20 minutes

Set-Up

- Identify a Location: A room large enough to accommodate your group size. This activity can also be conducted outdoors.
- Data Collection Options (choose one or more of the following):
 - Print copies of the data sheet if you want the group to work individually or in groups;
 - Project data table onto a screen for group discussion and data collection;
 - Draw the table on a flipchart, Smartboard, or whiteboard to record data as a group.

Directions

Part I. Toss the Globe and Record Data

- Have the group stand up and stand at least six feet apart from each other. The group can form a circle or stand around the room in different locations.
- 

- Toss the ball to one person in the group. Have that person catch the ball with two hands and don't move their hands once the ball is caught.
- Have the person look at where their right thumb is placed on the ball and announce if it is on "water" or "land."
- If the thumb is on water (oceans, lakes, rivers, icecaps), put a checkmark on the data table in the "Water" column; if it is on land (mountains, desert, grasslands, etc.), place a checkmark in the "Land" column.
- Repeat this process at least 25 times and record the data. Make sure everyone gets a turn catching the ball in your group.

Part II: Analyze Globe Toss Data


- For younger students: Have the students add the sum in the "Water" and "Land" columns and write each total at the bottom of the column. Which column has the greater amount?
- For older students: Determine an approximate percent of the globe that is covered by ocean (thumb landings on ocean divided by number of tosses) $\times 100 = x\%$. For example, you have 20 tosses and a thumb lands on the ocean 12 times. $(12/20) \times 100 = 60\%$

Discussion

- What can you infer about Earth based on your data? Is it covered more by water or land? (Answer: The Earth is covered more by water than land. Approximately 70% of Earth is covered by water.)*
- Discuss the importance of the ocean in your life and in the Earth's ecosystems. (Possible answers: source of most oxygen on earth, part of water cycle, food source, ecosystems, weather, greenhouse gas/climate, minerals, transportation, economy, etc.)
- How do humans positively and negatively impact the ocean? (Answers will vary. Examples might include pollution, marine debris, climate change, etc.)

****Note: If the data collected from this exercise do not generate a percentage close to 70% ocean, please see below in the "Adaptations and Extensions" section on ways to achieve a more accurate representation of the ratio of water to land.***

Adaptations and Extensions

- Science and Math: Toss the ball and have the person who caught it record where all 10 fingers land. Calculate the percentage of water vs. land.
 - Math: If after the exercise, the percentage does not come close to 70% ocean, what are some things you can do to achieve a more precise estimate? (Possible answers: more tosses and data recorded, count more fingers/toss, etc.)
 - Science and Math: Redo the exercise but calculate the number of times your thumb lands on the ocean compared to freshwater sources (e.g., lakes). How much of the Earth's water is held in the ocean? (Answer: 97%)
- 

Globe Toss Data Sheet

Toss	Thumb on Land (use a checkmark)	Thumb on Water (use a checkmark)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
	Sum =	Sum =
	Percentage of land =	Percentage of water =