Globe Toss (adapted from the Lawrence Hall of Science)

Objective
To introduce the concept that the ocean comprises a significant portion of the earth's surface.

Correlations
Ocean Literacy Principles and Fundamental Concepts: 1
This activity can lead into the discussion of the other OLP's.

National Science Education Standards
Grades 5-8: D *(if discussion includes the ocean's role in the water cycle and/or the ocean's effect on climate)*

California State Education Standards

Science	Grade 3: 3b, 5a, 5d	
	Grade 5: 3a	
	Grade 6: 2c	
	Grades 9-12: 3a *(if discussion includes ocean floor features as evidence for plate tectonics)*	
Mathematics	Grade 5:	Number Sense 1.0
		Statistics, Data Analysis, and Probability 1.0
	Grade 6:	Number Sense 1.0
	Grade 7:	Number Sense 1.0

Introduction
The ocean occupies more than 70% of the earth's surface and has a large impact on the earth and its inhabitants. Ocean-weather-climate interactions, transportation, fisheries, and recreation are just a few of the many things that are influenced by the ocean. In this introductory exercise, participants will determine the percent of the surface area of the Earth occupied by the ocean.

Materials
- 16" inflatable globe
(a slightly smaller or larger globe will work, but you don't want one so small that a student's finger tips take up a lot of surface area on the globe making it difficult to tell if their finger is on ocean or land, nor one so big that it makes it hard for the student to turn the globe without moving their fingers to see the tips of their fingers.)
- need at least two people, but the whole class can participate
- datasheet or piece of paper to record data (you can keep a record of data on an easel or overhead projector if you have a large group)

Pre-activity exercises (depending on the grade level of students):
- Ask students if they have been to the ocean and if they could see across the ocean to the next land mass.
- Ask if they know or can guess how much of the Earth's surface is covered by sea water? If they don't know, ask them to make a prediction?
- How would we measure this amount?

- Individually, in pairs, or as a group ask students to list the names of the continents and of the ocean basins.

Procedure

1. Inflate globe or better yet, have it inflated ahead of time.
2. Toss the globe from person to person a total of 10 times (or until everyone has had at least one turn).
3. Record how many of your 10 fingers touch ocean and how many touch land each time the globe is caught OR at the beginning of the game, designate one finger of your 10 fingers to look under for the ocean/land data. (Or you can try the activity both ways and compare the results.)
4. Calculate the percent of the total data points that represented ocean.

This can also be used as an ice breaker. When each student catches the globe, have them tell everyone where they are from (or their favorite food, etc.) as well as recording ocean or land.

This can also be done as a geography lesson where each student calls out the continent or ocean basin (or nearest major city, etc.).

Things to think about to extend the lesson:

Do you see any potential problems in counting where all 10 of your fingers land on every catch? Is there any bias? Will this affect your final percentages? What is a good solution to eliminate that bias?

How many times do you really need to the toss the globe? If you toss the globe more times and take more data, do you get a percentage that is closer to the actual percentage of land/water on the surface of the earth?

How would you alter the procedure of this lesson to try to answer some of these questions?

Globe Toss Datasheet

Land	Ocean
Total = _____	Total =_____
Grand Total = _____	

_____**%** of the earth's surface is covered by ocean