

**AIW Presentation January 3, 2012**

**Around the World Activity**

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**6<sup>th</sup> Grade Math**

**Objective:**

Students develop decimal number sense and make connections among different representations—fractions, decimals, and percents—for the same amount.

Students will use estimation to relate percents to land and water areas around the world.

**Pre-teaching:**

We are currently teaching fractions to decimals and decimals to fractions. We have already discussed the fractions to decimals to percents when doing our previous Checkbook activity with figuring taxes so they should have some prior knowledge on this.

**Activity:**

Read through the attached activity. We will do the land to water ratio first and discuss. Another time we will do a continent analysis maybe as a small group review for fractions, decimals and percents.

**Assessment:**

Students will answer the following questions as an assignment to hand in:

1. How are decimals and percents related?
2. How are fractions and decimals related?
3. How are fractions used at your home?
4. How are decimals used around you?
5. How are percents used around you?

**Next Day Discussion:**

1. Go over questions and talk about all of them. Do a class web on how they are related and how they are all used around them.

Name: \_\_\_\_\_ Class: \_\_\_\_\_

Answer the following questions as best you can.

1. How are decimals and percents related?
2. How are fractions and decimals related?
3. How are fractions used at your home or around you?
4. How are decimals used at home or around you?
5. How are percents used at home or around you?

# Around the World

## Reporting Categories Overview

Number and Number Sense, Computation and Estimation

Students will determine what percent of the time their right index finger will come to rest on land or water when catching a tossed globe. Students will develop percent number sense by first estimating and then actually catching the globe and recording where the right index finger lands each time.

**Related Standards of Learning** 4.2, 4.4, 5.1, 6.1, 6.7

**Approximate Time**

45 minutes

## Objectives

- Students will develop decimal number sense and make connections among different representations — fractions, decimals, and percents — for the same amount.
- Students will use estimation to relate percents to land and water areas around the world.

## Prerequisite Understandings/Knowledge/Skills

- Understand that decimals are another way of representing fractions
- Understand that decimals are written as an extension of the place-value system and that each place to the right of the decimal gets ten times smaller than the previous place

## Materials Needed

- One inflatable plastic globe for each of three groups of students
- A copy of the handout “Around-the-World Recording Sheet 1” for each student

## Instructional Activity

1. *Initiating Activity:* Have students predict the percent of land versus water found on the globe. Record a few of these predictions on the board for future reference.
2. Explain to students that they will be collecting data to verify their predictions. Organize students into three groups, and give each group a plastic globe and a set of recording sheets.
3. Prior to beginning the tosses, have the students record their individual predictions on their recording sheet. The prediction is a guess as to how many times out of 100 catches the student’s right index finger will touch land and how many times it will touch water.
4. Explain the data collecting process to the students. Have each group form a circle and toss the globe back and forth among the members for a total of 100 tosses. For each toss, have one student in each group record the data by putting a tally mark in the appropriate space on his/her recording sheet.
5. After the 100 tosses and all data collecting are completed, have the students in each group transcribe the total of the tally marks onto their own recording sheets. Then show them how to convert the data into the correct percents. Model the conversion with the following example: 72 tosses came to rest on water; 28 tosses came to rest on land. Record the data as 72 out of 100 equals  $\frac{72}{100}$ , .72, and 72%; and 28 out of 100 equals  $\frac{28}{100}$ , .28, and 28%. Students may represent the fraction and decimal by using place value materials or 100 grids.

6. Have each group share their results, and display all the data in a class chart.
7. *Closing Activity:* Using the results on the class chart, have students compare the results to the original predictions. If large differences exist between the predictions and the actual results, discuss why the differences exist.

### **Classroom Assessment**

During the activity, observe students as you walk around the room and check for understanding. At the end of the activity, students may respond to the following prompts in their math journals, "How are fractions, decimals, and percents related?" "What connections are there among fractions, decimals, and percents?"

### **Follow-up/Extensions**

This activity can be extended so that students make predictions about what percent of land is occupied by the individual continents and what percent is occupied by individual oceans. Refer to chart "Area of Land and Water around the World," and have the students use the "Around-the-World Recording Sheet 2." The class could be divided into two groups, each of which does 50 tosses, and then the results can be added together (averaged).

### **Curriculum Connections**

Science: Earth and Space Science topics

Social Studies: Map reading



## Around-the-World Recording Sheet 2

1. Estimate the number of times out of 100 catches that your right index finger will come to rest on each of the continents shown below.
2. Toss and catch the globe 100 times.
3. Keep a tally or actual count and make a record of where your right index finger comes to rest each time.
4. Figure the percent representations of the number of times your finger came to rest on each continent.
5. Explain any discrepancies between your estimated and actual counts.

	Estimate	Actual	Percent
<b>Asia</b>			
<b>Africa</b>			
<b>Antarctica</b>			
<b>Australia</b>			
<b>Europe</b>			
<b>North America</b>			
<b>South America</b>			
<b>All Land</b>			
<b>All Water</b>			