Sea Level Rise Experiment

Name: _____ **Date:** _____

Background:

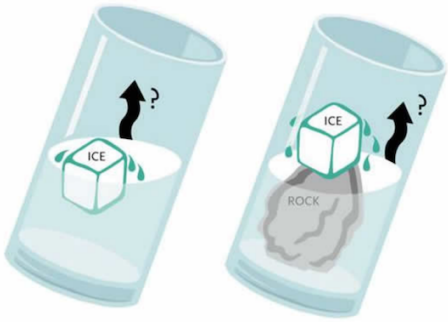
An **iceberg** is a large piece of ice that is floating freely in the water. Icebergs form when chunks of ice break off of glaciers, ice shelves, or a larger icebergs.

A **glacier** is a large piece of ice on top of land. Glacier ice forms by the accumulation and compaction of snow. Glaciers typically occur on mountains or near the poles.

Directions:

1. Gather your supplies (tub, clay (or large rock), ice cubes, water, ruler, tape, marker) to build your sea level rise model.
2. If you are using clay, mold it into an island and stick the clay to the bottom of your container. If you are using rocks, place them in the container. Make sure the island has a flat surface for your ice cubes (glaciers) to balance on.
3. Tape your sea level gauge (ruler) to the inside of the container so that you can measure the height of the water (sea level).
4. Add water to the container. Make sure the top of your island is above the water level!
5. Make some predictions based on your model:
   a. Imagine that you put an ice cube directly in the water. What does the ice represent?

   b. What will happen to the water level as the ice cube melts?



   c. Imagine that you put an ice cube on top of your island. What does the ice on top of the island represent?

   d. What will happen to the water level as the ice on top of your island melts?

6. Conduct your trials.

Trial #1: Icebergs

a. Place ice cubes in the water near your island. These ice cubes represent icebergs. How many ice cubes did you use? _____

b. Measure and record the water level BEFORE the icebergs melt in the data table below.

c. Measure and record the water level AFTER the icebergs melt in the data table below.

d. Calculate the difference in water level before and after.

Trial #2: Glaciers

a. Reset your ocean in the same container, or use a separate container.

b. Add the same number of cubes as above, but this time place them on the island. These ice cubes represent glaciers.

c. Measure and record the water level BEFORE the glaciers melt in the data table below.

d. Measure and record the water level AFTER the glaciers melt in the data table below.

e. Calculate the difference in water level before and after.

	Placement of ice cubes	Starting height of water level (mm)	Height of water after ice melts (mm)	Change in water level (mm)
Trial #1 (iceberg)				
Trial #2 (glacier)				

Activity Questions:

1. What do each of your supply items represent in your model? Draw a line to match the supplies to what they represent below:

a. Container	Sea Level Gauge
b. Clay or large rock (or other material that doesn't absorb water)	Ocean Basin
c. Ice cubes	Ocean Water
d. Water	Glaciers or icebergs
e. Ruler	Island

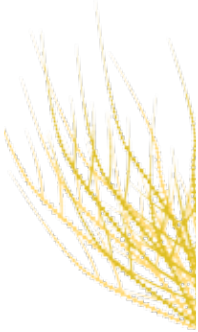
2. How was sea level change differenct between the iceberg and the glacier trial?

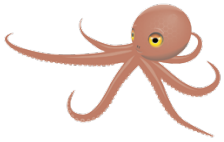
3. How does this experiment model sea level rise in the real world?

4. What is the atmosphere?

5. What is the hydrosphere?

6. How does warming of the Earth's atmosphere affect the hydrosphere?





7. What causes sea level rise?

8. How do you think rising sea level will affect people where you live?