Sea Ice and Sheet Ice Melting Experiment

I. Hypothesis: Predict what you think will happen in each saucer

Sea Ice (Ice cube floating in glass) -

Sheet Ice (Ice cube sitting on clay)

II. Record and Measure:

Estimate the amount of melted ice that has spilled over the container and into the saucer at 5 minute intervals. After 30 minutes, pour the colored water from the saucer into a measuring cup and record the volume.

	Start	5 min	10 min	15 min	21 min	25 min	30 min
Sea Ice							
Sheet Ice							

III. Questions:

1. How did the water level in the saucer change as the Sea Ice melted?

2. How can you explain your observation in question 1?

3. How did the water level in the saucer change as the Sheet Ice melted?

4. How can you explain your observation in question 3?

5. Will melting sea ice or melting sheet ice have the greatest effect on sea level? Why?

Extensions:

1. Have the students repeat the experiment to check that their results are valid
2. Measure the temperature of the water in the saucer throughout the experiment. After the ice has melted, continue to measure the temperature of the water – what happens?
3. For older students (grades 6-8), explain the phenomenon that frozen water is less dense than liquid water, and tell them that whereas melting sheet ice will raise sea level, melting sea ice will not. Ask them to design an experiment that will demonstrate this.
4. Demonstrate the experiment for the students, then ask them to come up with ideas for how it might be improved – how could they make their predictions and measurements more accurate?. What other variables could be introduced (e.g., a heat source)?

California Science Standards:

Grade	Standards
3	1e,f; 5a,c,d,e
4	5c; 6b,f
5	1g; 3a,c; 6d
6	3a;7a
7	7a-e
8	5d; 8a-d