Under the Sea: Tsunami

Instructor: Debbie Libengood
Workshop: World Oceans
Grade: 2nd grade
Content Areas Covered: Reading, Math, Science, Composition
Anticipated Duration: Minimum of four 30-40 min. lessons

Rationale: Current events have thrust the tsunamis into the news. Children are curious about what they are and how they work.

Objectives: Students will better understand how a tsunami is formed by underwater events such as earthquakes, volcanoes or landslides.

Sunshine State Standards:
H114:2 Students can analyze information, predictions, sketches, and diagrams to explain ideas, draw conclusions, using information and prior knowledge.
H311:1 Students know ways in which tools are used by scientists to gather information, calculate and analyze.
C112:1 Students know that the amount and direction of a force on an object determines how much the object will move.
H114:3 Students can keep science records

Resources/Materials needed:

Books & Websites

1. Cole, Joanna & Degan, Bruce. (1992). *The Magic School Bus on the Ocean Floor*. NY: Scholastic
2. Gropper, Jonathan. (2002). *Destination: Deep Sea.* Washington, D.C. National Geographic
3. A variety of classroom science books
4. Tsunami Resources for Educators: http://www.educationplanet.com/tsunami.html
5. PBS Savage Seas: http://www.pbs.org/wnet/savageseas/multimedia/wavemachine.html

Materials

6. Large, inflatable bubble (see picture)
7. CRISS strategies

Other Helpful Resources

8. Discovery School Tsunami Lesson Plan Resource: http://school.discovery.com/
9. "The Dynamic Earth" lesson plan by Frank Weisel, science teacher (http://school.discovery.com/lessonplans/programs/dynamicearth/)

Procedures:

Lesson 1: Tsunami KWL

1. Introduce the subject: TSUNAMIS. Using a KWL chart, have the class fill in the chart. I used an overhead and an overhead sheet with the chart on it. We filled in the KNOW section together and then the students transferred the information to their own sheet that they had folded in thirds and labeled. Next we listed the questions that we would like to know under the "W" (what I would like to know) section and they transferred this information to their chart. Collect and save each child's chart.

2. Give each child a 12x18 in. piece of construction paper (we used gray) and have them fold it in half. This will become their journal where they will collect their data, save their maps, charts, and drawings. We titled our journal, "Scientific Exploration of the Floor of the Pacific Ocean."

3. Next we shared the books about the ocean that we have in our classroom library and discussed what they knew about living and non-living things in the ocean.

4. The children than illustrated to fronts of their journals.

Lesson 2: Vocabulary

1. The children were introduced to the vocabulary associated with Tsunamis.
Vocabulary cards were: tsunami, earthquake, landslide, volcano, avalanches, fault, wave, harbor ("tsu"), wave ("nami"), energy, meteorite.

2. We went to two of the web sites to see what happens at different depths and to see wave formation.

3. Using a large, (12"x18") piece of drawing paper, fold it into fourths. Title each section: tsunami, earthquake, landslide and volcano. The children will illustrate each section with the underwater "catastrophic" event that would be the cause of a tsunami.

Lesson 3: Maps

Using our classroom maps, maps in our social studies book, and our globe, we explored the earth's surface to discover how much of it was made up of water. We noted the names of the oceans, seas, and gulfs. We found where the most recent tsunami had been and related it to where we are in Florida.

Each child was given a map of the earth. They were to color the oceans and the land. Then, using a symbol of a boat, they were to decide where in the ocean they would take their submersible if they were going to dive to the bottom of the sea and study the tsunami. These maps were also placed in their journals along with writing paper and a blank sheet of drawing paper. Holes were punched in the journals and brads were used to hold the journal together.

Lesson 4: Journey to the Bottom of the Sea

To prepare the classroom for this lesson all chairs and desks had to be moved to the perimeter of the classroom leaving the center totally empty. Patterns of fish previously created by the

children, were also brought out to place on the “bubble.”

The “bubble” is four pieces of thick gauge plastic and duct tape. The plastic sheets are taped together to form a LARGE pillow shape. Large enough for 23 children to fit into when it is inflated. Leaving an opening where two of the pieces come together to form the door and an opening at one corner were a fan is placed to blow up the pillow and keep it inflated.

The day of the lesson this contraption is unrolled in the center of our classroom and we tape all the fish, colored side down, to the plastic. We also use strips of colored tissue paper as seaweed. Turning the fan on LOW we inflate our “submersible” for our “Journey to the Bottom of the Sea” Children bring their journals, pencils, and crayons to “log” what they see on our descent. When we arrive on the bottom the pick a “catastrophic” event to observe that is the cause of a tsunami. They document the event in their journals and than illustrate it. When we arrive at the “ocean floor” all the lights are turned off in the room and the children are given flashlights to observe the undersea world around them.

Assessment: Using the L part of the KWL chart we will fill in the information on the overhead and in our journals. The journal will be a source of assessment.

Reflections:

- The topic, tsunami, was a great KWL chart. The discussion of what they thought they knew and what they wanted to know was lively and extended.

- The vocabulary lesson brought out the destructive, artistic nature of the children. Some got carried away with volcanoes.

- The “Bubble” is something we had done one other time in my class, but that time it was a real bubble large enough to carry a child away and they wrote imaginary stories about were they went. This exercise in factual information was different and they seemed to really enjoy it. Their journals are good examples of their interest.