Learn How to make Waves!

Grade(s) 5 and 7

Objective: To create and observe a model of an ocean wave.

Teacher Preparation: Have available the following materials:

1. A plastic bottle (shampoo or baby oil bottle).
2. A measuring cup.
3. Turpentine (how much depends on the size of the bottle).
4. Alcohol (how much depends on the size of the bottle).
5. Green and blue food coloring (about 2 drops blue, 1 drop green).
6. Some kind of tape to seal the cap on so your wave can't leak.

Procedure: Copy the following directions for the class.

1. Get all the things that you need together.
2. Fill the bottle with water all the way to the top.
3. Pour this water into the measuring cup and measure it exactly.
4. Put the bottle somewhere to dry out completely. You won't want any water droplets in the bottle when you put the wave in.
5. Measure half of the total liquid in your bottle. Put this amount of alcohol in. An equal amount should be turpentine. Use your division skill in math and figure it out carefully.
6. Put the food coloring into the bottle. When your wave is the color you want it to be, you know that's enough food coloring.
7. Fill the bottle with the two fluids. Squeeze the plastic bottle gently to get the air out. Be sure your bottle is full all the way to the top.
8. Put your bottle camp on as tightly as you can and tape it shut. Masking tape or electrical tape will both work.

Frankenberg, D., Mauldin, L. (1978). North Carolina Marine Education Manual. Raleigh, North Carolina: UNC Sea Grant Publication.

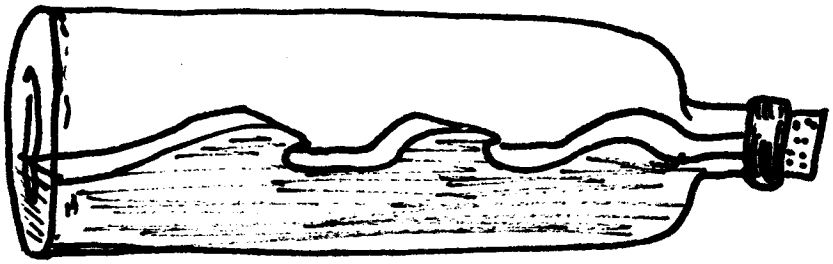
9. Wash and put away your supplies and tools.

10. Enjoy your wave.

Problems that you may have:

1. You could overdue the color and have to start over.
2. You might find it hard to get all the air out of the bottle.
3. Your bottle may not make a pretty wave if the shape is wrong.
4. Your bottle may give you trouble about sealing shut.

One wave bottle melted. We think the turpentine dissolved it. What do you think?



Frankenberg, D., Mauldin, L.. (1978). North Carolina Marine Education Manual. Raleigh, North Carolina: UNC Sea Grant Publication.

Source: Frankenberg, D., Mauldin, L. (1978). North Carolina Marine Education Manual. Raleigh, North Carolina: UNC Sea Grant Publication.

Learn How To Make Waves!

South Carolina Science Curriculum Standards (Grades 5,7)

Area I: Inquiry

National Science Education Standards* Grade 5	S.C. Components*
Identify process skills that can be used in scientific investigations	
Observe	1
Predict	6
Design and conduct a scientific investigation	B
Develop descriptions, explanations, predictions, and models using evidence.	B
Communicate scientific procedures and explanations	C

National Science Education Standards* Grade 7	S.C. Components*
Identify process skills that can be used in scientific investigations	
Observe	1
Predict	4
Design and conduct a scientific investigation	A, H
Develop descriptions, explanations, predictions, and models using evidence.	B
Communicate scientific procedures and explanations	C

Grade	Area	Unit of Study	National Science Education Standards *		S.C. Components
5	III. Earth Science	Changes in the Earth's Surface: landforms and oceans	A. Structure of the Earth System	1. Land forms are the results of a combination of constructive and destructive forces.	J
7	III. Earth Science	The Abiotic Environment	A. Structure of the Earth System	1. Landforms are the result of a combination of constructive forces (e.g., deposition of sediments) and destructive forces (e.g., weathering and erosion).	C

*Refer to South Carolina Science Curriculum Standards, adopted by the S.C. Board of Education January 12, 2000, for complete national standards and S.C. components.