Name \_\_\_\_\_

Date

## FOIL BOATS

1. What happens to a square of aluminum foil when placed in water? Record your observations:

**2**. What happens when you crush a square of foil and place it in the water? Record your observations:

**3**. Form a square of foil so it will float on the water. Place the "boat" on the surface of the water and put paper clips on it one at a time until it sinks. Record the results in the table. Redesign your boat and repeat the procedure.

## WILL IT FLOAT? HOW MUCH WILL IT HOLD?

Draw your three best boat designs	Length, Width, Height	Mass of Cargo
a.		
b.		
C		

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Make inferences about why your boat floats.

5. Did your boat support the same number of paper clips the first two times? \_\_\_\_\_ What might have caused it to support more, less, or the same number of paper clips? Explain: \_\_\_\_\_

**6**. What happened when the boat was redesigned? Did it support more weight? Explain why: \_\_\_\_\_

7. Tell why your best boat design is so special. What makes your boat hold more than others? \_\_\_\_\_

8. What happened to the waterline on the outside of the boat as the paper clips were added?

**9**. If you doubled the size (area) of the foil (from 4"x4" to 4"x8") predict how much more weight (how many more paper clips) you think that your boat will support. Explain:

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**Bonus**: Could other materials be used to make boats? Find out what kinds of materials modern boats and ships are made of today.