Can You Build a Life Boat?

TEACHER PROCEDURE:

Goal:
Students will construct a life boat from foil that can keep at least 35 marbles (people) from sinking into the water.

Materials: (per group)
• (1) 15 inch sheet of foil
• 35+ marbles
• Plastic dish tub and water
• Timer or stopwatch
• Scissors

Set Up:
• Provide a flat surface for the activity.
• Place one plastic tub at each group location.
• Let students try out different ideas for construction of lifeboat using the foil.
• Have students add marbles one at a time.
Can You Build a Life Boat?

Can you and your group members build a floating foil life boat that can hold at least 35 people (marbles)?

**Challenge:**
1. You must use only one 15 inch sheet of foil for your boat and part of it must always stay above the surface of the water.
2. The lifeboat you design must not touch the sides of the tub.
3. Your goal is to build a life boat that will hold at least 35 marbles (people) while floating.
4. You can decide where to place the marbles in the boat.
5. There are many different ways to complete this challenge. *Be creative!*

**Experiment Inquiries:** What questions does your group encounter as you are building and adding passengers to your lifeboat?

**(Before)**

**(During)**

**(After)**

**Observations:**
1. Was your group successful in this challenge? Why or why not?

2. What was the most difficult part of this challenge? Why?

3. What was the best idea your group came up with during this challenge? Explain.

4. How many marbles did your life boat hold? Explain your rationale for the placement of your marbles in the life boat.

5. What did you learn about construction and engineering during this challenge?

6. Sketch your life boat design on the back of this sheet and show where your “passengers” were seated.

**So What?**
- What does this experiment tell us about how the capacity of the lifeboats aboard Titanic were used? Were they underutilized, utilized to correct capability or is there another rationalization? Explain on the back of this page.

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