

## **B2T Foil Boat Lesson Plan**

Summer 2013

### **Overview**

Participants will build foil boats out of 12" x 12" pieces of Aluminum foil. The objective is to see which boats can hold the most golf balls when the boats are floated in water. Students will compare their initial efforts to their final efforts.

### **Concepts**

- Perimeter
- Area
- Volume
- Weight
- Buoyancy
- Displacement
- Engineering Maxim- Design, Build, Test, Improve

### **Materials**

12" x 12" Aluminum Foil squares- made from 12" wide Heavy Duty Aluminum Foil  
Golf Balls

### **Tools/ Supplies**

Sink, or tub, to float boats

### **Procedure**

- Orientation/ Laying out the Exercise
- Show different boat shapes
- Which one has more volume?
  - Define Volume- $L \times W \times H$
  - Compare Perimeter and Area to Volume
- More Volume equals more Golf Balls
- Everybody gets to build at least 3 boats

### **Evaluation**

**Compare students initial boats' capacity to their subsequent boats' capacity**

- A chart/ table works well

### **Extensions**

- Students can take their best boat and then make a three view drawing of the boat.
- Using the measurements of a golfball they can try to maximize the capacity of their boat design
- They can then test their redesign by building a boat using their measured drawings