

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_



# Boat Builder

**STEM Sims**

## Lesson 1: Mix and Match

Can you determine which motor is the best for each type of hull?

### Doing the Science

1. Start the Boat Builder Simulation by clicking on the “Sim” tab.
2. Select the round hull, 25 HP motor, antifouling paint, and rudder.
3. Click the “Test” button.
4. Select the “Calm” surface condition and “Light” cargo load.
5. Click “Begin Test”.
6. Record your scores in Table 1 below.
7. Repeat steps 2 – 6 with the 50 and 120 horsepower motors. Use the trim tabs instead of the rudder with these engines.
8. Repeat steps 2 – 6 with the shallow vee and flat hulls, recording your results in Tables 2 and 3.

**Table 1 – Round Hull**

Motor	Speed	Maneuverability	Efficiency
25 HP			
50 HP			
120 HP			

**Table 2 – Shallow Vee Hull**

Motor	Speed	Maneuverability	Efficiency
25 HP			
50 HP			
120 HP			

**Table 3 – Flat Hull**

Motor	Speed	Maneuverability	Efficiency
25 HP			
50 HP			
120 HP			

### Do You Understand?

1. Which motor is the best for each hull?