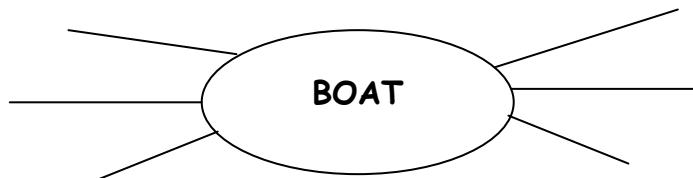




Push or Pull



- ❖ **Strand C: Force and Motion**
- ❖ **Benchmark: SC.C.2.1.1** - The student knows that one way to change how something is moving is to give it a push or a pull.
- ❖ **Strategy:** cooperative learning groups, hands-on/minds-on
- ❖ **Materials:** aluminum foil, rectangular or square-shaped containers (one- or two-gallon capacity), water, objects to be used for weights such as bear weights or paper clips, and *The Great Boat Push* worksheet
- ❖ **Word Wall/Vocabulary:** push, pull, motion, empty, full
- ❖ **Literature Connection:** *Row, Row, Row Your Boat* by Pippa Goodhart
Pushing and Pulling by Gary Gibson
- ❖ **Lesson/Procedure:**
 1. Read the literature selection to the class.
 2. Discuss what makes a boat move. Write responses on graphic organizer on board with the word BOAT (see sample).



3. Sing and act out the song *Row, Row, Row Your Boat*. Discuss the action needed to row the imaginary boat.
4. Tell students they will work in groups to design their own boats. Assign a role to each group member (such as director, assistant director, materials manager, reporter, group member). Describe the responsibilities of each member in the group.
5. Students will work with *The Great Boat Push* worksheet to compare how their boats move when they are pushed or pulled and when they are either empty or full.

6. Each group will work with a container $\frac{3}{4}$ full of water and design its own boat out of a 12" by 12" piece of aluminum foil.
7. The students can compare the motion of the boat when it is empty, when it has five objects, and when it has ten objects.

❖ **Assessment:** Each cooperative learning group will complete *The Great Boat Push* worksheet and share the data collected and compiled.



The Great Boat Push

Names of group members: _____



Test your boat when it is empty, when it contains 5 objects, and when it contains 10 objects. Write a check mark in the correct row to describe the motion of your boat.

Motion

	Easy	A Little Difficult	Difficult
Empty Boat			
Boat with 5 Objects			
Boat with 10 Objects			

Explain why the boat moved easier without any objects in it.

Explain why the boat moved with more difficulty with objects in it.
