Break the Ice

Grades 3-5

Student Activity Workbook

Name: _____

Date: _____

Engineering Notebook

Seaworthy STEM™ in a Box Series

Break the Ice

1 Fill in the blank:

Icebreaker ships are designed to _____ the ice to create a safe

passageway in the Arctic Ocean. Icebreakers do not break the ice by cutting

into it but rather the ship's _____ pushes down on the ice.

2 Your team was tasked with creating enough weight at the front of the ship to tear the tissue paper. In the box below, draw your design which will show how you will create a heavy bow to break through the "ice." Make sure that you label each of the items in your drawing (including the number of each item). Your team's goal is to position your materials so that you add the least amount of mass to your ship while still being able to break the "ice."

3 After you are able to break the ice, you should find the mass (in grams) of your entire build. *All of the materials including the boat and the string should be on the scale. Record the mass in your student activity workbook.

4 Your team and you were given different types of materials to build your model icebreaker. Let's pretend your teacher has now asked you to build a new and improved model icebreaker, what different materials would you use from the classroom to create a new model icebreaker? Why would you use these materials?

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