

# IXL Summer Science Exploration

Grades 6–8



## STEP 1

Complete the IXL science skills below for the grade you will be in at the start of the school year. (To quickly find each skill, type the three-character skill ID into the search bar at the top left of the page).

SKILL NAME	6TH GRADE	7TH GRADE	8TH GRADE
Identify parts of the engineering-design process	<a href="#">HVS</a>	<a href="#">BD2</a>	<a href="#">4B5</a>
Explore the engineering-design process: going to the Moon!	<a href="#">ZFL</a>	<a href="#">RBV</a>	<a href="#">FWZ</a>

## STEP 2

Using the steps of the engineering-design process, plan a floating vessel/ship that will successfully transport a weighty object across a body of water.

Process	Brainstorming ideas
<p><b>1. Problem:</b> An environmentally-friendly shipping company has had several ships sink due to the problematic design of its ships.</p>	
<p><b>2. Criteria:</b> Your ship must be built from only paper, wood, and plastic and be able to successfully carry a 16 oz. bottle filled with liquid for 3 minutes. You may use tape or glue to construct the ship, but not to waterproof it.</p>	
<p><b>3. Constraints:</b> You may not purchase any ship-building materials, with the exception of the 16 oz. bottle. Use only items found in your factory (i.e., your home).</p>	

### **STEP 3**

Sketch your ship plan below.

### **STEP 4**

Build your ship prototype. Take a photo of your prototype and paste it below.

## STEP 5

Test your prototype by placing a full 16 oz. bottle on top of your vessel and sailing the ship in a sink, tub, pool, or stream. Take a photo of your prototype test and paste it below.

## STEP 6

Evaluate your prototype's maiden voyage.

Did your prototype sink? (Circle one.)    **Yes**            **No**

What features of your design worked well?

Can you think of any ways to improve your design? Explain.