

Name: _____

Engineering Design Challenge

Student Sheet

For this STEM challenge, you will design a nature-inspired solution to a problem.

STEP 1: STUDY NATURE

Observe one of your favorite plants or animals up close (or by using books or Internet resources). What unique or interesting structures does it have that help it function, or survive in its environment?


Structure (Part)	Function (Purpose)

STEP 2: IDENTIFY A PROBLEM

Think about the plant or animal and its unique structures and functions. What human problem might the plant or animal help solve? How?

STEP 3: BRAINSTORM AND DESIGN

What could you invent that would imitate the plant or animal in order to solve the problem? Think about a tool, toy, article of clothing, robot, or other technology that could be designed to mimic the plant or animal. Sketch your invention below.



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STEP 4: BUILD A MODEL

Experiment with simple materials you could use to build a model of your invention, then build it! List the materials you used below:

STEP 5: SHARE YOUR SOLUTION

Make an advertisement to “pitch” your invention. Give it a catchy name. Describe how it solves a problem and why people should use it. Tell how the invention is an example of biomimicry.