

Lesson Plan

Inspire Me!

Book: *Transportation Technology Inspired by Nature*

Series: Technology Inspired by Nature

Level: Navigator

Objective

To help students explore how one idea from nature can have multiple real-world applications that can be used to improve inventions and technology.

Supplies

- *Transportation Technology Inspired by Nature* book
- Whiteboard
- Paper and pencils

Before the Activity

Read *Transportation Technology Inspired by Nature*, or assign it to students to read on their own.

Activity

Scientists get many ideas for improving technology and inventions by studying birds. Chapter 2 (“In the Air”) describes several of these inventions. Ask students to list some of the inventions or improvements mentioned in the chapter. Write their answers on the whiteboard. Students should include the following things:

- Eagle wings inspired winglets, which make airplanes more efficient (pp. 11–12).
- Military pilots fly in a V shape like geese, which helps their planes use less fuel (p. 12).
- An owl’s soft feathers inspired airplane wings that reduce noise (pp. 13–14).
- Owl wings inspired fringe for airplane wings and a coating for landing gear (p. 15).

The “Inspire Me!” feature on pages 16 to 17 describes yet another way that birds’ feathers and wings have helped improve airplanes. Ask a student to summarize this feature, and add his or her answer to the list on the whiteboard. (Sample answer: A bird’s feathers inspired airplane wings that can change shape as the plane flies, which helps the plane use less fuel.)

Next, have students turn to Chapter 3 (“In the Water”). This chapter begins by describing how the scales on a shark’s skin help the shark swim through water. By imitating sharkskin, scientists have developed technology that helps solve several problems. Page 21 lists three ways the technology is used:

- to keep algae from attaching to boats
- to reduce drag and help airplanes save energy
- to help surfaces resist bacteria

Ask students to think of another specific situation where imitating a shark’s skin could help solve a problem. They should write an “Inspire Me!” feature describing their idea. The feature should have three paragraphs:

- a paragraph that explains how the shark’s skin works
- a paragraph that explains how scientists might imitate the skin
- a paragraph that explains how this imitation will be helpful

Evaluation

Collect each student’s “Inspire Me!” feature. Give each student 5 points for each paragraph, for a total of 15 points.

Standards

This lesson may be used to address the Common Core State Standards’ reading standards for informational texts, grade 6 (RI 6.1, 6.3) and the National Science Education Standards’ Content Standard E, grades 5–8.