

# Technology, Tools, and the Engineering Process

READ ALOUD PASSAGE

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All human-made things start as something from the Earth. Plastic comes from oil. Glass comes from sand. Metal comes from rocks called ores. Paper comes from wood. Machines need energy from outside themselves to work, like gasoline or electricity. Living things are different. They get energy from food. Animals eat it, and plants make their own.

Animals also build things, but those things are natural, not human-made. A bird builds a nest from sticks. A beaver builds a dam from wood and mud. These were not made by people, so we call them natural.

People also use tools to help them build things. A tool is any human-made object that helps someone do a task, like a hammer, a needle, or a pair of scissors. Making a tool, and then using it, is part of a bigger process called technology. Technology is not just the finished object sitting on a shelf. It includes every step along the way: figuring out what is needed, choosing materials, testing ideas, and fixing mistakes.

Sometimes engineers get their best ideas by studying nature instead of inventing something from scratch. A bird's nest holds together in a strong wind, and a beaver's dam can hold back a whole stream. When people copy a design from nature to solve a human problem, that is called biomimicry. An engineer might study how a bird weaves a nest to design a stronger basket, or study a beaver's dam to design a better way to hold back water.

### Activity 1: Word Hunt

Look back at the reading. Find four nouns and write them on the lines.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

### Activity 2: Because, But, So

Finish the sentence two ways. After because, tell why. After but, tell something different or surprising.

Engineers study nature **because**

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Engineers study nature, **but**

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### Activity 3: Grow a Sentence

This sentence is very short. Answer each question to add more information. Then put your answers together into one longer sentence.

START WITH THIS SENTENCE

**Engineers build.**

When?

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Where?

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Why?

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Write your expanded sentence:

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