

# CHAPTER 2 SCIENTIFIC METHODS IN BIOLOGY

## Section 2.1 Problem-Solving Methods in Biology

## Section 2.2 The Nature of Biology

### Study the Reading

Read the following and answer the questions.

A biologist named Katharine Payne visited the elephants at a zoo. She felt the air around her throbbing like the rumbling of thunder. When she felt the air throb, she noticed that the skin on the foreheads of the elephants moved.

Also, the elephants seemed to communicate without making any noise. They did not make a sound, but they would start and stop moving at the same time. Payne knew that some animals, such as whales, made sounds too low for humans to hear. She thought, “Maybe elephants use low sounds like whales to communicate with each other.”

An **observation** is something you see or notice. A **fact** is something you know.

Fill in the first box with something Payne observed the elephants doing. Fill in the second box with something she observed about the air around her. Fill in the last box with a fact she knew.

<b>Observation:</b>
↓
<b>Observation:</b>
↓
<b>Fact:</b>
↓
<b>Hypothesis:</b> Maybe elephants use low-pitched sounds to communicate with each other.

With **inductive reasoning**, a person uses facts and observations to form a hypothesis.

With **deductive reasoning**, a person uses rules to guess what might happen.

1. Which kind of reasoning did Payne use? \_\_\_\_\_