

**CHAPTER 1** The Nature of Life Science

**SECTION 1**

**Asking About Life**

**BEFORE YOU READ**

After you read this section, you should be able to answer these questions:

- What is life science?
- Why is life science important for everyday life?



**California Science Standards**

7.7.b

**What Is Life Science?**

Imagine that it is summer. You are lying on the grass in a park watching dogs play and bees visiting flowers. An ant carries away a crumb from your lunch. Suddenly, questions pop into your head: How do ants find food? Why don't bees visit every flower? Why do dogs play? You have just taken the first steps to becoming a life scientist.

**Life science** is the study of living things. Asking questions about the world around you is the first step in any scientific investigation. What kinds of questions can you ask? ✓



Part of science is asking questions about the world around you.

**STUDY TIP**

**Predict** As you read this section, write a list of questions about life science that you think this book will help your answer.

**READING CHECK**

**1. Identify** What is the first step in a scientific investigation?

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**What Kind of Questions Can You Ask in Life Science?**

Take a look around your home or neighborhood. Just about anywhere you go, you will find some kind of living organism. The world around us is full of an amazing diversity of life. Single-celled algae, giant redwood trees, and 40-ton whales are all living things. For any living thing you could ask: How does the organism get its food? Where does it live? Why does it behave in a certain way? However, these questions are just the beginning.

**SECTION 1** Asking About Life *continued*

### What Do You Do Once You Have a Question?

Once you ask a question, it is time to look for an answer. How do you start your investigation? There are three methods you can use: research, observation, and experimentation. ✓

**READING CHECK**

**2. List** List three methods of investigation that you could use to answer questions.

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**Say It**

**Research** Choose your favorite living thing. Write five questions about that organism. Use three different types of resources to answer those questions. Present to the class what you have learned.

#### RESEARCH

You can find answers to some of your questions by doing research. The following are some ways you can do research:

- Ask someone who knows a lot about the subject.
- Look up information in print resources, such as textbooks, encyclopedias, and magazines.
- Use electronic resources such as the World Wide Web.

When you do research, be sure to think about the source of the information you find. Not all information you find in print materials or on the World Wide Web is correct. Scientists use information only from reliable sources.

#### OBSERVATION

You can find answers to some questions by observation. When you observe, you watch something and write down what you see. For example, if you wanted to know what birds live in your area, you could go outside and look for them. You could also hang a bird feeder outside your home and observe the birds that use it.

#### EXPERIMENTATION

You can answer some questions by doing an experiment. An experiment should be designed carefully to answer a specific question. Making good observations and analyzing data are two important parts of doing an experiment.

### TAKE A LOOK

**3. Identify** What type of investigation method is this student using?



This student is trying to find the hardness of a mineral.

**SECTION 1** Asking About Life *continued*

**Why Is Asking Questions Important?**

Why do life scientists need to ask questions? Do the answers really matter in everyday life? Absolutely! As you study life science, you will begin to see how important it is to ask and answer questions. Life scientists are looking for answers to many questions. These include fighting disease, producing food, and protecting the environment.

**FIGHTING DISEASE**

Before 1955, many people suffered from a disease called polio. *Polio* is caused by a virus that affects the brain and nerves and can cause paralysis. Today, very few people in the world have polio. By asking questions and searching for answers, scientists were able to create a vaccine that protects people from the polio virus.

Today, scientists are looking for ways to stop the spread of the virus that causes *acquired immune deficiency syndrome* (AIDS). By studying how this virus affects the body and how it causes AIDS, scientists hope to find a cure.

**PRODUCING FOOD**

How can we produce enough food to feed everyone? How can we make sure that foods are safe to eat? To answer these questions, some scientists design experiments to see what makes plants grow larger or faster. Others are looking for ways to preserve foods better so that they will last longer. ✓

**PROTECTING THE ENVIRONMENT**

Many environmental problems are caused by our misuse of natural resources. Life scientists try to understand how we affect the world around us. They are studying things such as pollution, endangered species, and the effects of cutting down too many trees.



These environmental scientists are testing water quality.

*Critical Thinking*

**4. Infer** Why do you think that more people suffered from polio before 1955 than they do today?

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**READING CHECK**

**5. Identify** Give one question about producing food that life scientists are trying to answer.

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# Section 1 Review

## SECTION VOCABULARY

<b>life science</b> the study of living things	
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1. **List** Give three examples of resources you could use to do research.

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2. **Write Questions** Write three questions about the animal in this picture. Try to use different ones from the examples given in the text.



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3. **Explain** Why do you need to be careful about choosing resources for research?

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4. **Identify Relationships** How are observation and experimentation related?

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5. **List** List three environmental problems that life scientists are studying.

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6. **Apply Concepts** When do you think a life scientist would study a nonliving thing, such as a lake or a rock? Give an example.

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