

ASK®

Fighting Germs

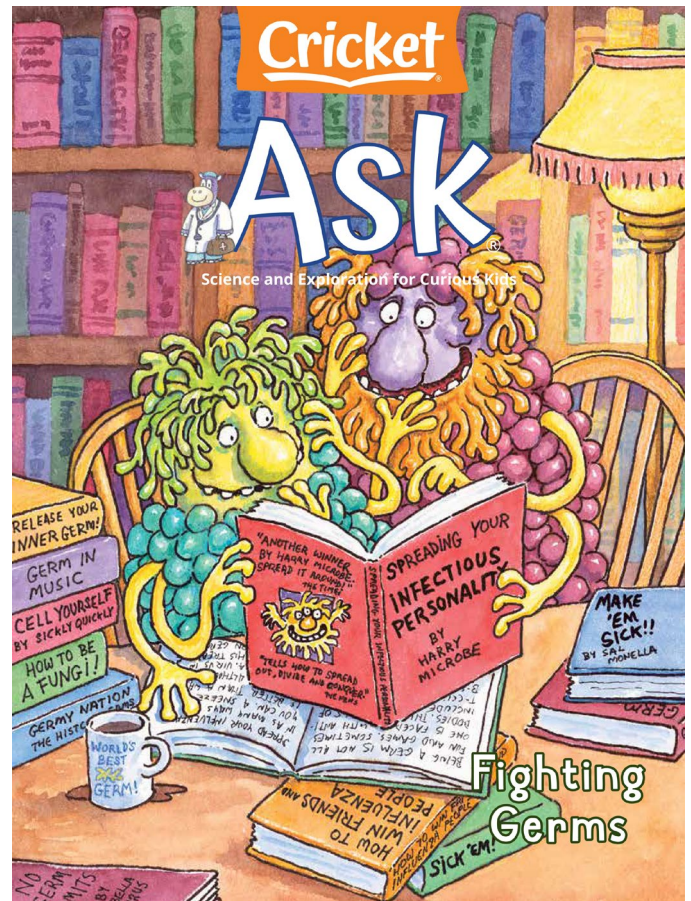
Ahh-chooo! Dust in the air, or are you getting sick? Germs are everywhere, yet we are not always sick. This month's issue of ASK magazine explores the microbes that cause us harm, as well as the microbes that are helpful to the body. Best of all, it examines the treatments and cures that are available to return us to a healthy state.

CONVERSATION QUESTION

How do we fight germs?

TEACHING OBJECTIVES

- Students will learn about various delivery systems for receiving medication.
- Students will learn how ancient remedies had true medicinal benefits.
- Students will learn what makes the body sick and how it becomes well.
- Students will obtain information from a science article.
- Students will construct explanations from an expository text.
- Students will compare and contrast a variety of germs.
- Students will analyze a well-known proverb.
- Students will research alternative medicine practices.
- Students will create positive messages about staying healthy.



In addition to supplemental materials focused on core STEM skills, this flexible teaching tool offers vocabulary-building activities, questions for discussion, and cross-curricular activities.

SELECTIONS

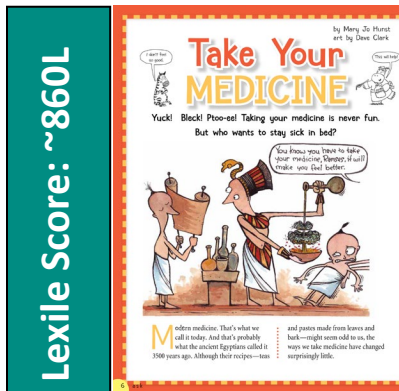
- **Take Your Medicine**
Expository Nonfiction, ~860L
- **Weird Cures**
Expository Nonfiction, ~1060L
- **Germ Fight!**
Expository Nonfiction, ~860L

Ask® Teacher Guide: March 2022

Take Your Medicine

pp. 6–9, Expository Nonfiction

Although the ingredients of medications have changed drastically since ancient times, the ways that we take medicine have changed very little. Readers will learn why the delivery system depends on the ailment.



RESOURCES

Obtain Information: Take It In

OBJECTIVES

- Students will learn about the various delivery systems for receiving medication.
- Students will obtain information from a science article.
- Students will analyze a well-known proverb.

KEY VOCABULARY

- **salve (p. 7)** a creamy substance that you put on a wound to heal it or to make it less painful
- **lozenge (p. 7)** a small candy that usually contains medicine
- **vaporizer (p. 8)** a machine that turns water or liquid medicine into steam that can be inhaled

ENGAGE

Conversation Question: How do we fight germs?

Generate interest in the topic by telling students they will be creating a recipe that cures a specific sickness. The catch is that they must formulate a concoction that would be available in ancient times. Explain that this means they must incorporate only natural ingredients. Assign pairs of students different ailments such as poison ivy, a headache, a broken bone...be creative and keep it light. Students must name their medicine, tell what it cures, list the ingredients with amounts, indicate how it is to be used and for how long. Bind the recipes into a *Big Book of Make-Believe Medicine* for the class to circulate.

INTRODUCE VOCABULARY

Post and discuss the key terms and the title of the article. Be sure that students understand the definitions before reading the article by asking them to share a time when they used a **salve**, a **lozenge**, or a **vaporizer**. Instruct students to use all three of the words when completing the Skill Focus: Obtaining Information activity below.

READ & DISCUSS

Read the article aloud with the class. Have students reread the article with a partner to answer the questions below. Discuss responses.

1. What is medicine?
2. How did ancient herbalists make their healing mixtures?
3. Which organs clean the medicine from the body?
4. Why do pill-makers add fillers to medicine?
5. How do vaccines prevent illnesses?

SKILL FOCUS: Obtaining Information

INSTRUCT: Guide students to obtain information from the article's text and drawings. Remind them that the article was written to teach readers about different delivery systems for taking medicine. Introduce the *Obtain Information: Take It In* worksheet and tell students to use information from the article to provide thorough answers.

ASSESS: Review the answers. Then discuss situations in which medicine may need to be delivered into the body in more than one way.

EXTEND

Language Arts The text box on the bottom of page 9 has the heading "An Ounce of Prevention." Attributed to Ben Franklin, the entire sentence is "An ounce of prevention is worth a pound of cure." At the time, he was warning citizens to be vigilant about fire awareness and prevention. Ask students to explain how that proverb can also relate to vaccinations. Give students ten minutes to write their responses and ask volunteers to share their explanations. Challenge students to suggest other scenarios in which the proverb would be appropriate.

Take It In

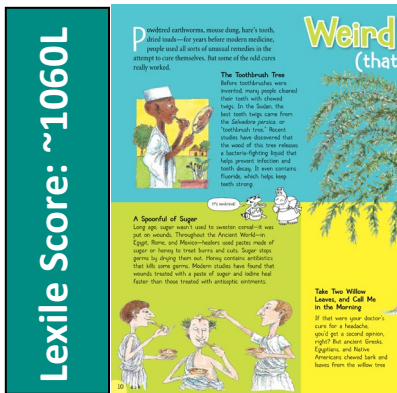
Obtain Information Review the article and locate information about each delivery system for medication. Record your findings on the chart.

Delivery Method	Explanation (What is it and why is it used?)	Examples (Ailments that use this method)
Pills/Tablets		
Injection		
Inhaler		
Port		
Patch		

Weird Cures

pp. 10–11, Expository Nonfiction

From powdered earthworms to bloodsucking leeches, ancient medicine utilized the natural world to create cures for ailing patients. Readers will learn that some of these odd cures actually worked.



RESOURCES

Constructing Explanations: Mad Medicine

OBJECTIVES

- Students will learn how some ancient remedies had true medicinal benefits.
- Students will construct explanations from an expository text.
- Students will research alternative medicine practices.

KEY VOCABULARY

- **antiseptic (p. 10)** stopping the growth of germs that cause sickness
- **acupuncture (p. 11)** a way of stopping pain or curing illness by placing needles into a person's skin

ENGAGE

Conversation Question: How do we fight germs?

Pose the following question to students: How do you cure the hiccups? List all responses on the board, no matter how silly. Answers will likely include breathing into a paper bag, swallowing sugar, or having someone scare you. Guide students to acknowledge that the only way we know which cures may work is by trying them.

INTRODUCE VOCABULARY

Post and review the two vocabulary words. Inform students that these terms will be found in the article “Weird Cures.” Have them use the title and the vocabulary terms to predict the content of the article. Remind students to highlight the key vocabulary terms in the reading. Revisit the predictions after the reading.

READ & DISCUSS

Reinforce comprehension of the concepts and details presented in the article by using the following prompts to direct discussion.

1. What are some ingredients ancient healers used to cure people?
2. How did healers treat burns and cuts in the ancient world?
3. What is the main ingredient in the modern pain reliever aspirin?
4. How did acupuncture make its way from China to America?
5. How can you keep yourself healthy and avoid getting germs that will make you sick?

SKILL FOCUS: Constructing Explanations

INSTRUCT: Advise students to review the article and to study the four different ancient healing cures. Distribute the *Constructing Explanations: Mad Medicine* graphic organizer, and tell the class that they will use information from the article to complete the chart. Students will need to provide clear explanations about what it is and why it worked.

ASSESS: After students complete their charts, discuss responses.

EXTEND

Research Remind students that the article mentions that acupuncture has been practiced in China for more than 2,500 hundred years. Explain to students that acupuncture is an example of an alternative medicine (a term that describes medicinal treatments that are used instead of traditional mainstream therapies). Have students use books and the internet to research other alternative medicine practices and what they are used to treat. Invite students to share their findings. Discuss the pros and cons of alternative medicine.

Mad Medicine

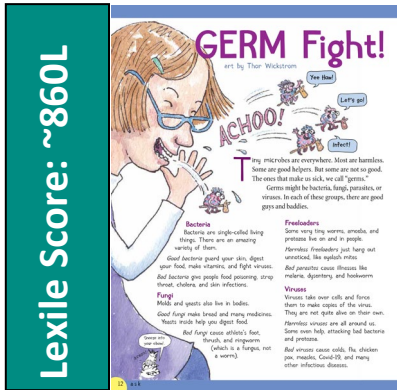
Constructing Explanations Review the article and reread passages that contain information that explains each cure shown below. Use this information to answer the questions for each cure.

The Toothbrush Tree
How was it used?
Why did it work?
A Spoonful of Sugar
How was it used?
Why did it work?
Willow Leaves
How was it used?
Why did it work?
Pins and Needles
How was it used?
Why did it work?

Germ Fight!

pp. 12–15, Expository Nonfiction

This article examines the germs that cause illness and the treatments that cure them. Prepare for battle!



ENGAGE

Conversation Question: How do we fight germs?

The Conversation Question of this issue asks, “How do we fight germs?” Pose this question to the students and allow a few minutes for brainstorming. Have students share their thinking and post responses on the board. Revisit the list after reading the article and discuss the germ-fighting techniques that should be added.

INTRODUCE VOCABULARY

Post and review the key vocabulary words and definitions. Then ask students to turn and talk to a partner to decide if each word names a “good guy” (germ fighter) or a “bad guy” (sickness maker). Discuss students’ ideas. Then remind students to look for these words as they read the article.

READ & DISCUSS

Pose the following questions to the students to prompt meaningful discussion following the reading of the article.

1. What are the four categories of germs?
2. How do vaccines work?
3. Explain how viruses are able to cause an infection.
4. Why do you feel tired when you are sick?
5. How do your body’s built-in defenses help you stay healthy?

SKILL FOCUS: Compare and Contrast

INSTRUCT: Students will compare and contrast the four categories of germs studied in the article. Instruct students to work in pairs to revisit the text and underline information that will be helpful for this purpose. Introduce the *Compare and Contrast: Search and Destroy* graphic organizer, and have partners record the data on their charts.

ASSESS: Reconvene and review the worksheet with the class.

EXTEND

Health Science The first sentence on page 13 states, “The best way to stay healthy is to keep bad germs out [of your body] in the first place.” The paragraphs that follow discuss the body’s natural defenses. In addition, students have undoubtedly been inundated with preventive measures that they should take to stay healthy. Have students design a comic strip, bumper sticker, or bookmark that focuses on staying well. They can use information from article pages 14–15 and their own knowledge. Remind students that the goal is to provide an informative positive message about healthy living. They should include words and colorful illustrations.

RESOURCES

Compare and Contrast: Search and Destroy

OBJECTIVES

- Students will learn what makes the body sick and how it becomes well.
- Students will compare and contrast a variety of germs.
- Students will create positive messages about staying healthy.

KEY VOCABULARY

- **microbes** (p. 12) tiny organisms that can only be seen through a microscope and sometimes make people sick
- **macrophages** (p. 14) a type of blood cell that protects the body by eating germs
- **antibiotics** (p. 15) medicines that fight harmful germs and cure infections

Search and Destroy

Compare and Contrast Record the information on the chart. Then answer the question in the Think Tank.

Germ	Definition	Examples	Treatment
bacteria			
fungi			
freeloader			
virus			

Think Tank: How are the germs listed above similar to each other? How are they different? Discuss with a partner.