

STANDARDS SPOTLIGHT

Reading: Informational Text

Grade 2: Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

Grade 3: Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

Grade 4: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

Writing: Research to Build and Present Knowledge

Grade 2: Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).

Grade 3: Conduct short research projects that build knowledge about a topic.

Grade 4: Conduct short research projects that build knowledge through investigation of different aspects of a topic.

Speaking and Listening: Presentation of Knowledge and Ideas

Grade 2: Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.

Grade 3: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

Grade 4: Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

Objective: Students will learn about the role food scientists play in keeping food healthy and safe, and will develop a presentation about illness-causing bacteria.

Time: One class period, plus additional research time

Materials: *Explore Food Science* activity sheet (Lexile 780L); *Tiny But Mighty* activity sheet; access to the Internet

GETTING STARTED

1 Tap into what students already know about careers in the sciences by asking students to name jobs that they think might require scientific knowledge and equipment. Record students' responses on the board and provide additional examples.

2 Share with students that some scientists study food in order to find the best ways to make healthy and tasty products that are also safe from any bacteria that might make people sick. These scientists are called

food scientists. They do important work developing new foods, cooking methods, packaging materials, and systems to feed a planet full of more than seven billion people.

USING THE ACTIVITY SHEETS

3 Distribute copies of the *Explore Food Science* activity sheet and allow students time to read the informational text and complete the bacteria-labeling activity on the page. Point out the word "bacterium" underneath "Name That Shape." Explain that bacterium is used when you are talking about one type of bacteria, while bacteria is plural and is used for more than one bacterium.

Grade 2 teachers: Have students write bacteria shape names as: sphere, oblong, and spiral. **Grade 4 teachers:** Have students write scientific shape names as: coccus, bacillus, and spirillum. **Grade 3 teachers:** Choose the approach appropriate for your classroom.

Answers: 1. oblong/bacillus, 2. sphere/coccus, 3. spiral/spirillum.

4 Gather the class to review the activity sheet. Ask student volunteers to read aloud each of the four food safety steps listed at the bottom of the page (Clean, Separate, Cook, Chill) and describe the science fact involved in each step.

5 Distribute copies of the *Tiny But Mighty* activity sheet. Explain that in order to keep people safe from food poisoning, food scientists have to first understand what causes it. Invite students to select one of the following bacteria known to cause food poisoning as the topic of their research: *Salmonella*, *Campylobacter*, *E. coli*, or *Listeria monocytogene*. **Grade 2 teachers:** Have students complete the activity with a family member as homework. **Grade 4 teachers:** Have students complete their research independently and then write 1 to 3 paragraphs incorporating the information they recorded on the activity sheet into a piece of informational writing. **Grade 3 teachers:** Choose the approach most appropriate for your classroom.

WRAP-UP

6 Once students have completed their research, divide them into groups according to the bacteria they researched. Ask each group to prepare a short presentation covering the questions provided on the *Tiny But Mighty* activity sheet.

7 Share your learning with the school community by creating a food safety bulletin board focusing on Clean, Separate, Cook, and Chill, and displaying student bacteria research.

