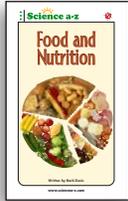


**INTRODUCTION**



This book is available at three reading levels, as indicated by the one, two, or three dots beside the Science A-Z logo on the front cover.

This guide offers general instructions that can be used with any or all of the multilevel books. When appropriate, tips are provided for modifying the instruction for a specific level. The dots in this guide indicate elements of the instruction that are only applicable to certain book levels.

- can only be used with low level
- can only be used with middle level
- can only be used with high level
- | can be used with low and middle levels
- | can be used with middle and high levels
- | can be used with all three levels

Each book is available for printing or projecting and is also available as an eBook for students to access on **Kids A-Z**. The *Nonfiction Books* and their accompanying quizzes are available in both English and Spanish.

**BOOK SUMMARY**

The book *Food and Nutrition* examines the processes used by plants and animals to make or obtain food and to convert that food into energy. The book distinguishes between plants, which make their own food through photosynthesis, and animals, which must consume food. Both plants and animals use the process of respiration to convert food molecules into energy.

Animals can be classified as carnivores, herbivores, or omnivores, based on the types of food they eat. These categories help students understand how different organisms fit into food chains. To help students understand how animals get and use food, the process of human digestion is outlined.

The book discusses types of nutrients, both organic and inorganic, and gives examples of common foods that provide each type of nutrient. Students are encouraged to maintain a healthy diet and are given tips on how to do so.

Labeled photographs and diagrams support the text.

**BEFORE READING**



Preview the book title, cover, and table of contents with students. Ask them to predict what the book will be about. Invite students to preview the remainder of the book, looking at the images, captions, and special features as well as the section heads and the glossary. Encourage them to use this information to continually make and revise their predictions while reading.



**Vocabulary**

Instruction for the unit’s vocabulary terms can be found in the *Unit Guide*. It defines core and other key science terms and suggests resources you can use to teach vocabulary before, during, or after the reading.

These terms are found in the glossary. Certain terms are only found in certain book levels, as noted.

<b>carnivore</b>	<b>carbohydrates</b>	<b>carbon dioxide</b>	<b>chlorophyll</b> ::::
<b>digestion</b>	<b>energy</b>	<b>enzymes</b>	<b>fiber</b>
<b>glucose</b> ::	<b>herbivore</b>	<b>lipids</b>	<b>minerals</b>
<b>nutrients</b>	<b>omnivore</b>	<b>oxygen</b>	<b>photosynthesis</b>
<b>protein</b>	<b>respiration</b>	<b>vitamins</b>	

**Reading Strategy**

*Retell*

Explain to students that good readers often retell, or tell the story in their own words, as they read. Doing this helps them remember and understand what they read.

- :: Read the section How Do Plants Get Food? (pages 5–7) with students.

Model how to retell this section in your own words. This section, like others in the book, describes a process. As you read, number the steps of the process and underline important things that take place during each step. Use this information to model retelling the process. You may want to use the following sample.

**Think-aloud:** *Listen to my retelling of this section of the book:*

An animal eats food, but a plant makes its own food through photosynthesis. During photosynthesis, a plant absorbs water through its roots. Carbon dioxide in the air enters the plant through tiny holes in its leaves. The plant’s cells collect energy from sunlight. The light energy helps combine the water and carbon dioxide to form a kind of sugar, which is the plant’s food source. Some of the sugar is used up, and some is stored. Oxygen, which is left over, passes out of the plant and into the air. *Notice that I used some of my own words and some words from the book in my retelling.*

As students read, encourage them to retell other processes in the book, numbering the steps (if appropriate) and underlining important details before they begin retelling.



Download and print the *Sequence Events Chart Graphic Organizer*. Instruct students to use as many rows on the chart as necessary to add details about each step in the process of photosynthesis, plant respiration, or digestion.

**TIP** The *Graphic Organizer* can also be used with each of the *Quick Reads* or other unit resources.

As students read, they should use other reading strategies in addition to retelling.



The book begins by explaining that all living things need food and must use that food for energy. After students read this section, you may want to check for understanding by asking them to list examples of the foods that various living things eat and then asking them to think about how these foods might be turned into energy within each organism.

Review the key science terms in each section before students read. Encourage students to read one section at a time and then discuss in pairs, in groups, or as a class what they read. (See *Discussion Questions*.)

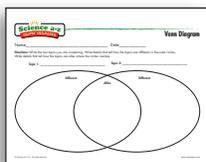
Students can read the special features of the book to build on the concepts within each section. Some vocabulary terms can be reinforced in these features.

## Comprehension Skill Focus

### *Compare and Contrast*

Explain to students that one way to understand what they read is to think about how topics are alike and different. Draw a T-chart on the board or on paper. Label the left column *Alike* and the right column *Different*. Model how to fill in a T-chart to compare familiar things such as modes of transportation or articles of clothing.

Then have individuals, pairs, or small groups create a similar T-chart on paper or on a computer, and challenge them to compare the processes of photosynthesis and digestion.



Download and print the *Venn Diagram Graphic Organizer*. Ask students to choose two related processes, ideas, or details from the book that they would like to compare and contrast. Have students list the two topics at the top of the chart. Information that only relates to the first topic belongs in the left oval. Information that only relates to the second topic belongs in the right oval. Information that relates to both topics belongs in the overlapping section in the middle.

 The *Graphic Organizer* can also be used with each of the *Quick Reads* or other unit resources.

As students read, they should use other comprehension skills in addition to comparing and contrasting.

### Discussion Questions



Use the *Discussion Cards* during or after reading. The cards are structured so they can be used for whole-group discussion or assigned to individuals, pairs, or groups. Choose the activity that best serves your purposes. It may be helpful to allow students to use their book and completed *Graphic Organizer(s)* as they try to answer the questions. Here are some suggested activities:

- Divide the class into groups and have each group discuss the questions from a section of the book. Then have groups report their responses to the class.
- Have all groups discuss all the questions and then discuss the similarities and differences among the groups' answers.
- Place discussion cards at centers and have groups talk about or write their responses as they rotate through them.
- Have each student choose a card and write an answer on the back. Collect the cards and review them with the whole class.
- Assign certain questions to groups or individuals for homework.

Each question can be answered with certain book levels, as noted with dots in the upper left corner. You may want all students to think about all the questions, even if their book level is not noted on certain cards. The book section or topic most closely related to the question appears on each card. Question types are noted in parentheses.

*All questions can be answered with all three book levels except where noted.*

#### ***What Needs Food?***

- How are food and energy related? (understanding)
- What is another word for a living thing? (remembering)

#### ***How Do Plants Get Food?***

- What makes plants different from animals when it comes to food? (understanding)

- What is the name of the process by which plants make food? (remembering)
- What type of gas does a willow tree need to make its own food? (applying)
- What type of gas does a sunflower release as it makes its own food? (applying)
- What green material in plants is necessary for photosynthesis? (remembering)

- ■ How are cells like the bricks of a wall? (analyzing)
- How is the Photosynthesis Formula similar to a math equation? (analyzing)
- Besides food, what else do plants provide that animals require or use? (applying)
- What would be some pros and cons of being able to make your own food instead of eating food? (evaluating)
- How would plants have to change if they couldn't make their own food? (creating)
- Since *-vore* is a suffix related to eating, what do each of the prefixes *carni-*, *herbi-*, and *omni-* mean? (analyzing)
- In what order should a secondary consumer, producer, decomposer, and primary consumer be placed on a food chain? (understanding)
- What types of organisms might be producers in an ocean food chain? (applying)
- What might happen if the plants in a food chain became diseased? (creating)
- What might happen if the population of carnivores in a food chain *increased*? (creating)
- How has agriculture changed over time? (understanding)

#### *How Do Plants Use Food for Energy?*

- What process allows plants to use food for energy? (remembering)
- What is needed for respiration, and what is produced during respiration? (remembering)
- How does photosynthesis differ from plant respiration? (analyzing)

#### *How Do Animals Get Food?*

- How would you compare the way plants get food with the way animals get food? (analyzing)
- What might it be like if animals could make food through photosynthesis? (creating)
- How would you categorize your favorite animal as a carnivore, herbivore, or omnivore? (applying)

#### *How Do Animals Use Food for Energy?*

- Why do animals need energy? (understanding)
- ■ How is the digestive system like an assembly line, but in reverse? (understanding)
- How do animals prepare the food they eat so it can be used for energy? (remembering)
- Which process(es) do both plants and animals use: *photosynthesis*, *respiration*, and/or *digestion*? (remembering)

- Do animals release carbon dioxide and water vapor in the same way that plants do? Explain. (analyzing)

### *Food's Journey Through the Human Body*

- What role does saliva play in the process of digestion? (understanding)
- After you chew on cereal or strawberries, how does the food reach your stomach? (applying)
- What happens to food in your stomach? (understanding)
- How do food molecules leave the small intestine? (understanding)
- How do molecules of food reach the body's cells? (understanding)
- What happens to food that does not get completely digested? (understanding)
- How are the stomachs of animals such as cows, camels, kangaroos, and giraffes different from ours? (analyzing)

### *Food, Nutrition, and Health*

- What is the difference between *organic* and *inorganic* nutrients? (understanding)
- What are four types of *organic nutrients*? (remembering)
- What type of food contains carbohydrates and includes potatoes, rice, and corn? (remembering)

- Why might a doctor suggest that you get carbohydrates from whole-wheat bread instead of a doughnut? (applying)
- What category of nutrients do fats and oils belong to? (remembering)
- Which fats can be helpful to your body, and which fats can be harmful? (analyzing)
- How does protein help the body? (understanding)
- How can people who don't eat meat get protein? (remembering)
- Why is fiber important to eat, even though you can't digest it? (analyzing)
- How can eating foods that contain vitamins maintain or improve your health? (understanding)
- What are two types of *inorganic nutrients*? (remembering)
- Why is it important to get minerals in the foods you eat? (understanding)
- Why is water so important to health? (analyzing)
- When is it most important to drink lots of water? (understanding)

### *Conclusion*

- How would you compare and contrast the way plants and animals get food and use it for energy? (creating)

- Why do you think people often like foods that may not be very healthy for them? (evaluating)
- If you were to plan a healthy meal, what would you leave out? (creating)
- What do you think a healthy diet should include? (evaluating)

### AFTER READING



Encourage students to reread the book.

### Reflect on the Reading Strategy: *Retelling*

Review the strategy of retelling. Invite students to share how this strategy helped them understand what they read.

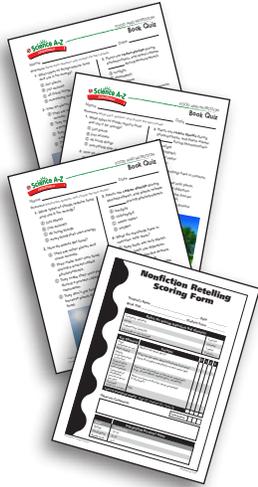
### Enduring Understanding

In this book, students have read about how plants and animals get the energy they need from food. Discuss the following with students:

- *How can learning about the importance of various nutrients help you lead a healthier life?*

### Home Project

Encourage students to work with their family to evaluate their own diet by keeping a log of the foods and drinks they each consumed in one week. Then invite students to compare the foods they ate with widely accepted recommendations (using nutrition labels as reference when available). You might supply students with tools and information they can use to assess the nutritional value of the foods they ate during that period. See *Using the Internet* in the *Unit Guide* for suggested online resources, some of which you may want to share with students. Print resources are also available, including *Finding Your Way to a Healthier You*, a valuable brochure published by the U.S. Department of Health and Human Services. To put the research into action, students might come up with proposed changes to their diet that will provide the nutrients they need without unnecessary calories, harmful fats, or additives.



### Assess

Download and print the appropriate reading level and language of the *Book Quiz* or have the student take the eQuiz on **Kids A-Z**.

Use the *Nonfiction Retelling Rubric* to assess understanding.

Quick Check: For individual or group assessment, have students respond orally or in writing to the following question:

- *How would you compare and contrast the ways plants and animals get food and use it for energy?*