



Let's Do SCIENCE

Primary 5

Activity Book

A



Let's Do Science

Let's Do Science is based on the United States Next Generation Science Standards (NGSS). The series consists of full-color textbooks and full-color activity books for Grades K to 6.

Let's Do Science engages students with a highly visual presentation of the disciplinary core ideas in the textbooks and places an emphasis on applying scientific knowledge using NGSS practices through numerous scientific investigations. Let's Do Science sees engineering as an essential element of science education and as such is tightly integrated into both the textbooks and activity books.

The Let's Do Science activity books include the following features:

AB Activity

Activities and investigations related to concepts and topics covered in the Let's Do Science Textbook.

Engineer It!

Goes beyond inquiry by encouraging students to design, model and build to engineer solutions to defined problems.

Review

Topical questions at the end of each chapter for formative assessment.





Contents

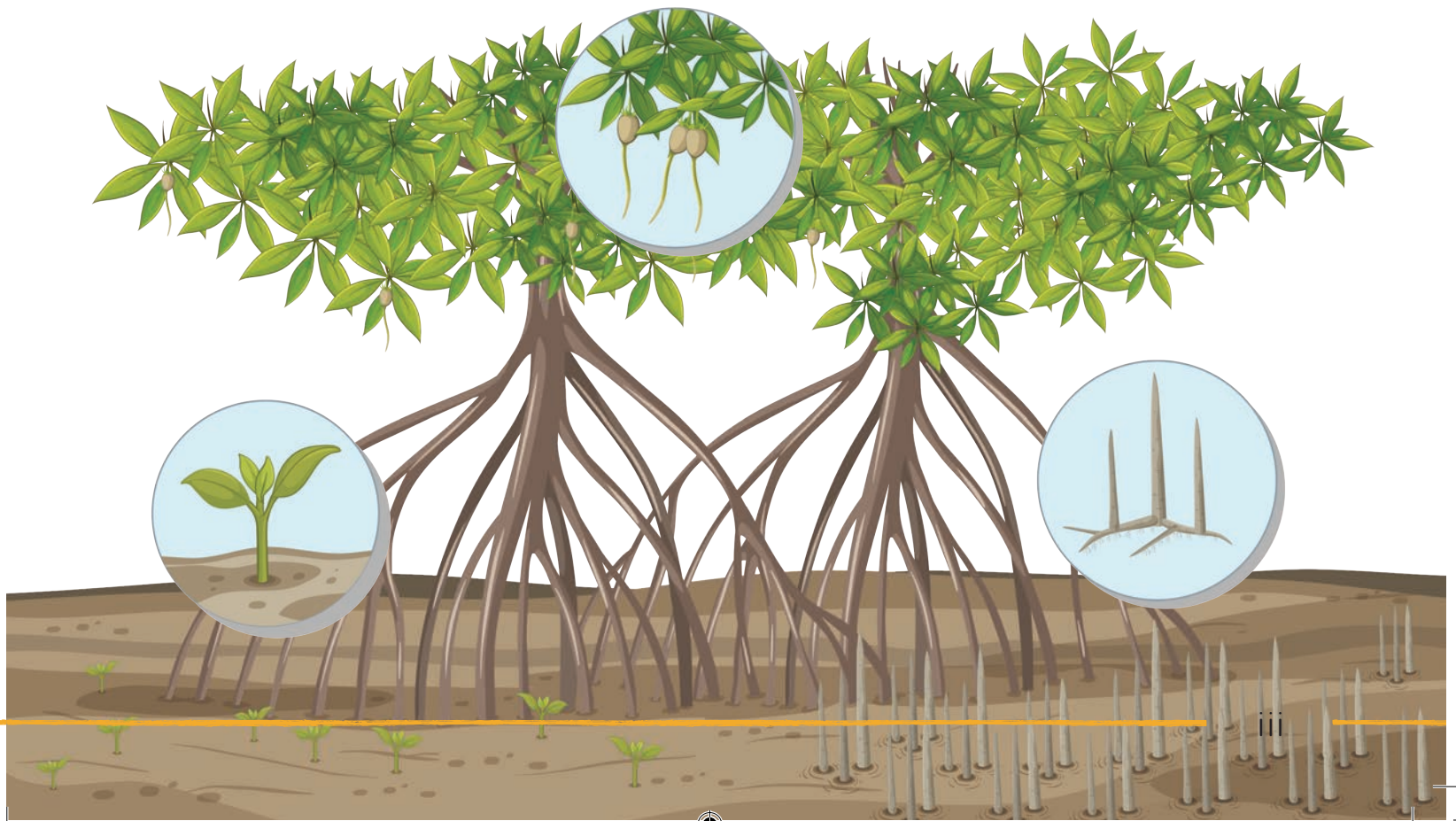
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Activity 1.1



What Are Organisms?

1. Explain how you know each thing is an organism.

Spider

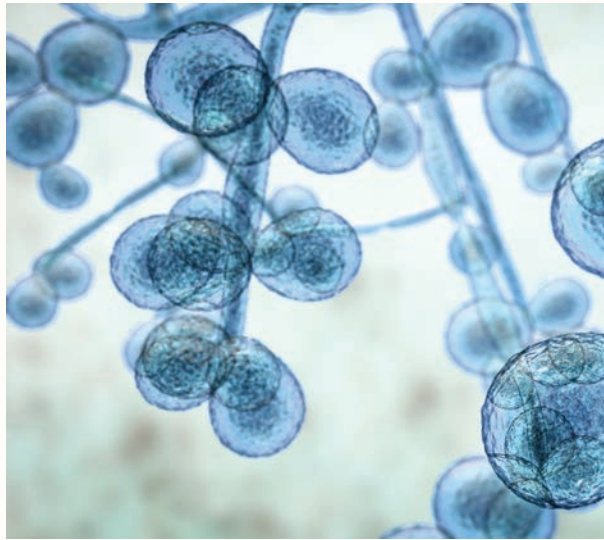


Spotted Owls

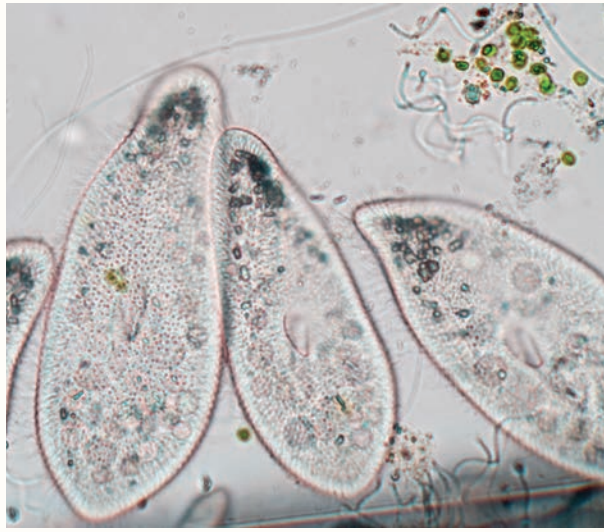




Candida Fungus



Parameciums



2. A car uses energy to move from place to place.
Why is a car not a living organism?

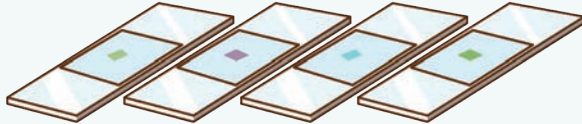
Activity 1.2



A Closer Look at Cells

Materials

· prepared plant and animal cell slides



· microscope

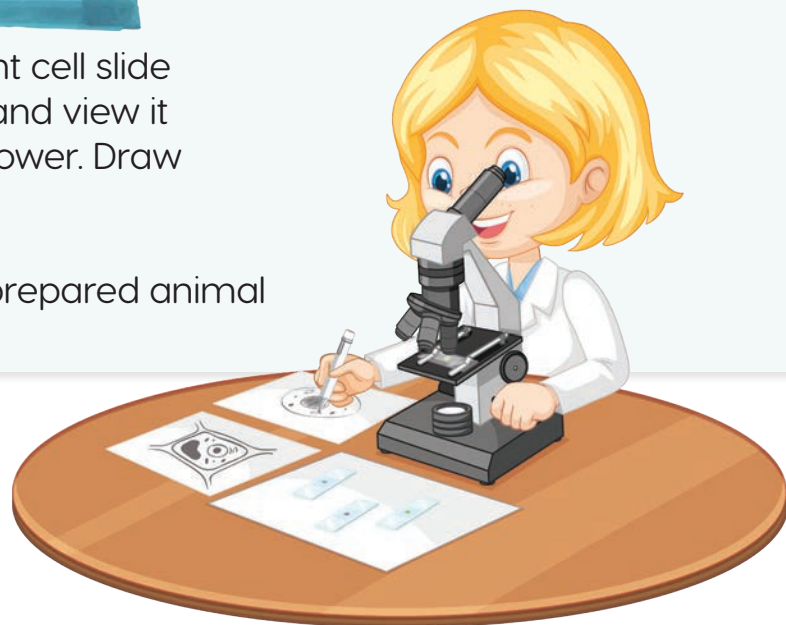


Make a Prediction

In what ways do you think plant and animals cells will be different?

Procedure

1. Place a prepared plant cell slide under a microscope and view it under low and high power. Draw what you observe.
2. Repeat Step 1 with a prepared animal cell slide.





Observations

Record your observations in the spaces below.

Plant Cells (Low Power)

Plant Cells (High Power)

Animal Cells (Low Power)

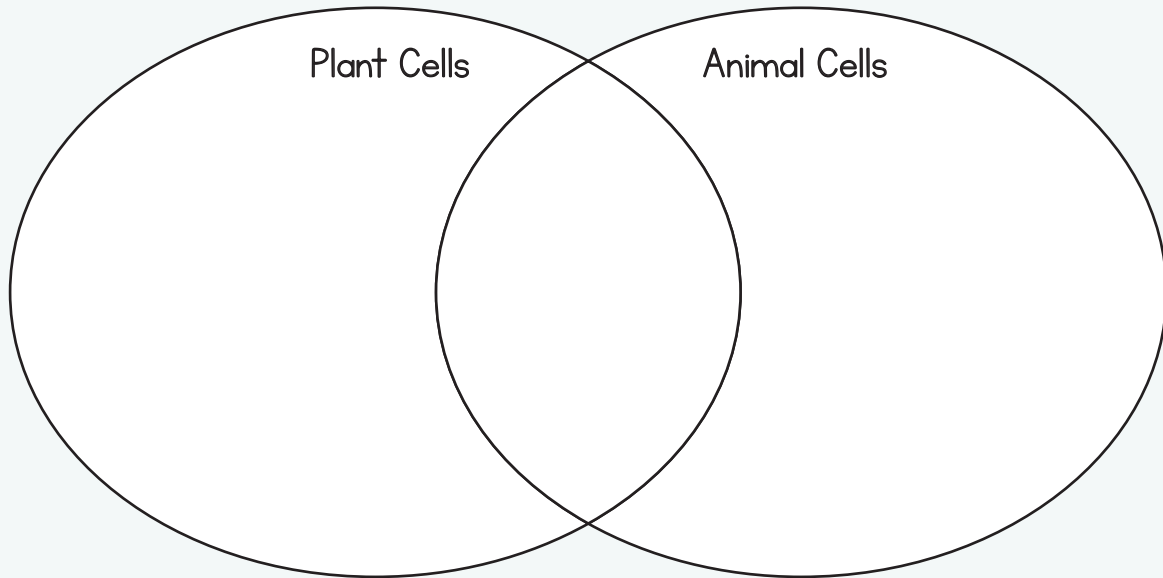
Animal Cells (High Power)

Analyze and Interpret

1. What kind of plant cells did you observe?

2. What kind of animal cells did you observe?

3. Was your prediction correct? Use the Venn diagram to compare and contrast the plant and animal cells you observed.





Activity 1.3



Cells – Comprehension

1. Use your textbook to help you fill in the blanks.
 - (a) From microscopic amoebas to giant blue whales, all organisms are made of _____.
 - (b) Cells are the smallest units within an organism that can carry out _____.
 - (c) Cells are often referred to as the 'building blocks of _____'.
 - (d) Organisms that are made of only one cell are called _____ organisms.
 - (e) Organisms that are made of more than one cell are called _____ organisms.
2. List three organisms that are made of many cells.

3. List two organisms that are made of one cell.



Class – Mammalia

Description:

Organisms in this group:

Order – Carnivora

Description:

Organisms in this group:



Family – Felidae

Description:

Organisms in this group:

Genus – *Panthera*

Description:

Organisms in this group:



Species – *Panthera Tigris*

Description:

Organisms in this group:

2. Why are there no plants in the phylum Chordata?

3. Why are there no insects in the order Carnivora?

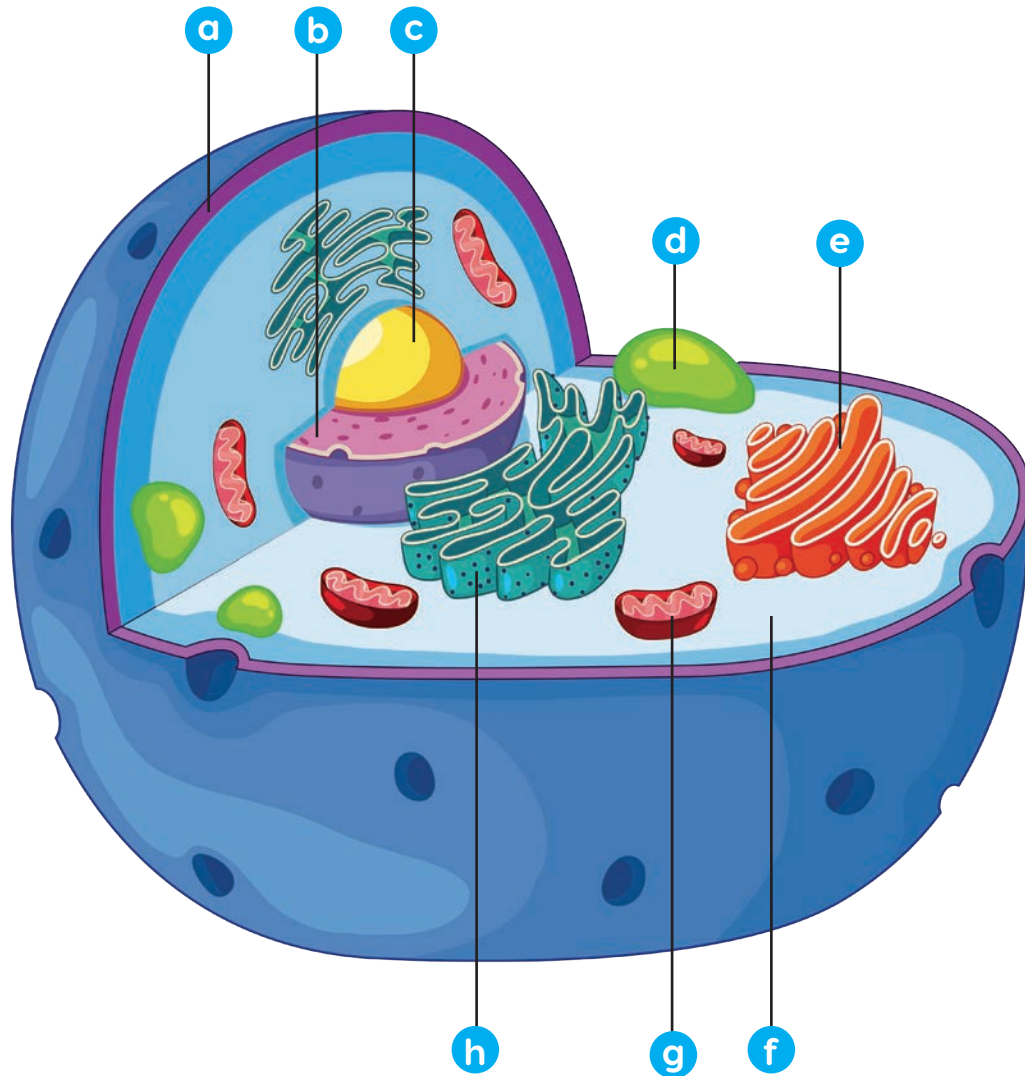
4. Would a kitten belong to the genus *Panthera*? Explain your answer.

Activity 1.12



Animal and Plant Cells

1. Use your textbook to help you label the different parts of an animal cell.



a

b

c

d

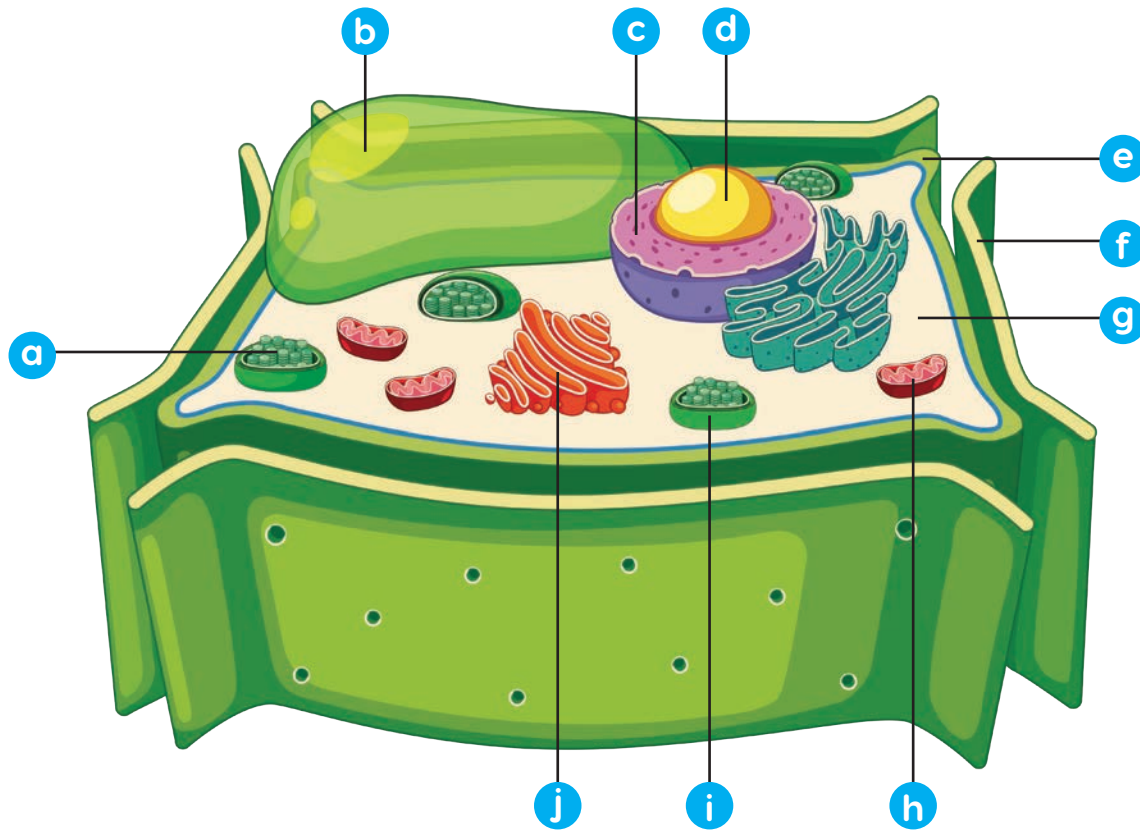
e

f

g

h

2. Use your textbook to help you label the different parts of a plant cell.



a		b	
c		d	
e		f	
g		h	
i		j	

3. Why are chloroplasts not found in animal cells?

Activity 1.13



Animal and Plant Cells – Comprehension

1. Use your textbook to help you fill in the blanks.
 - (a) Most plant and animal cells have the same internal parts, called _____.
 - (b) The outermost part of an animal cell is the _____.
It controls the _____ that go in and out of the cell.
 - (c) The _____ is a watery substance that holds the cell organelles except for the nucleus.
 - (d) The _____ controls all of the internal cell activities and processes such as growth and _____.
 - (e) At the center of the nucleus is the _____ which is where ribosomes are made.
 - (f) _____ are often referred to as the powerhouses of the cell. They release the _____ from food.
 - (g) The _____ is the organelle that packages and transports proteins.



(h) The _____ produces proteins for the rest of the cell.

The protein is made in _____, which are organelles on the surface of the ER.

(i) _____ are storage spaces for water, wastes and other cellular material.

2. List two cell organelles that are found in plant cells, but not animal cells. Describe their function.

3. List two cell organelles that are found in animal cells, but not plant cells. Describe their function.

Activity 1.14



Cell Organization

1. Complete the table.

Picture/Drawing	Term	Description
	Cell	
	Tissue	
	Organ	
	Organ System	
	Organism	



2. Use your textbook to help you fill in the blanks.

(a) The cells that make up _____ organisms are _____ in a way that allows them to work together to perform specific _____ .

(b) A group of similar _____ that work together to perform the same function form _____ .

(c) A group of tissues that work together to perform a specific function form an _____ .

(d) Organs working together to perform a specific function form an _____ .

(e) All of the organ systems working together make up an _____ .

3. List three organ systems that work together to help a cat move about and carry out life processes.

Review



Diversity of Life

1. List five characteristics of an organism.

2. Why are cells called the 'building blocks of life'?

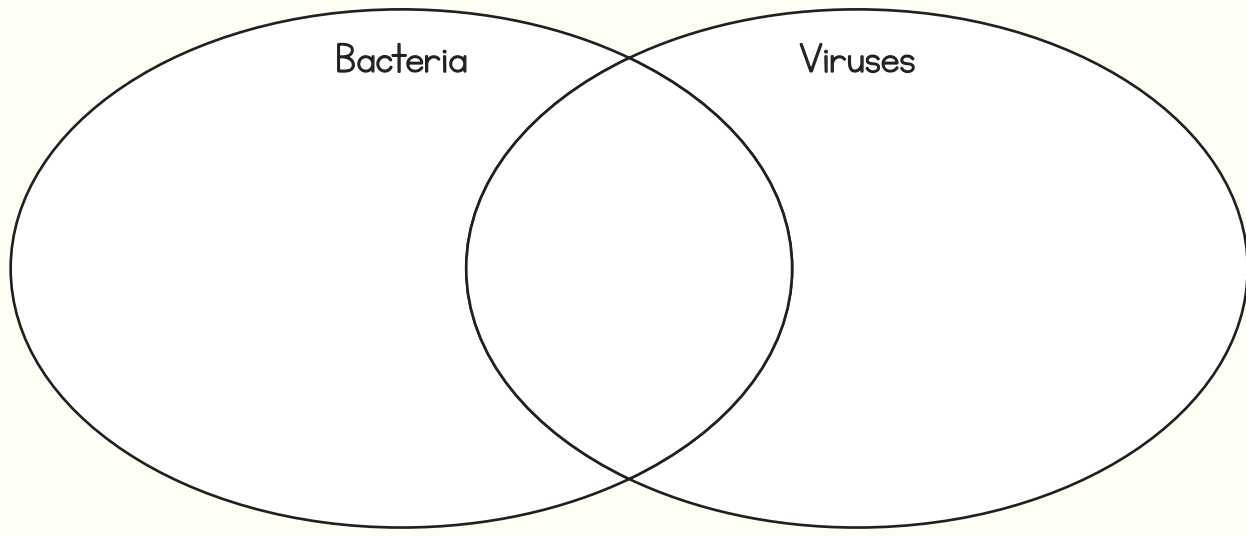
3. Provide an example of a stimulus and response for a plant and an animal.

Organism	Stimulus	Response
Plant		
Animal		

4. List the six kingdoms of life.



5. Use the Venn diagram to compare and contrast bacteria and viruses.



6. A chimpanzee belongs to the class Mammalia. List three other animals in the class Mammalia.

7. What is the function of the nucleus in a cell?

8. What is the function of the chloroplasts in a plant cell?

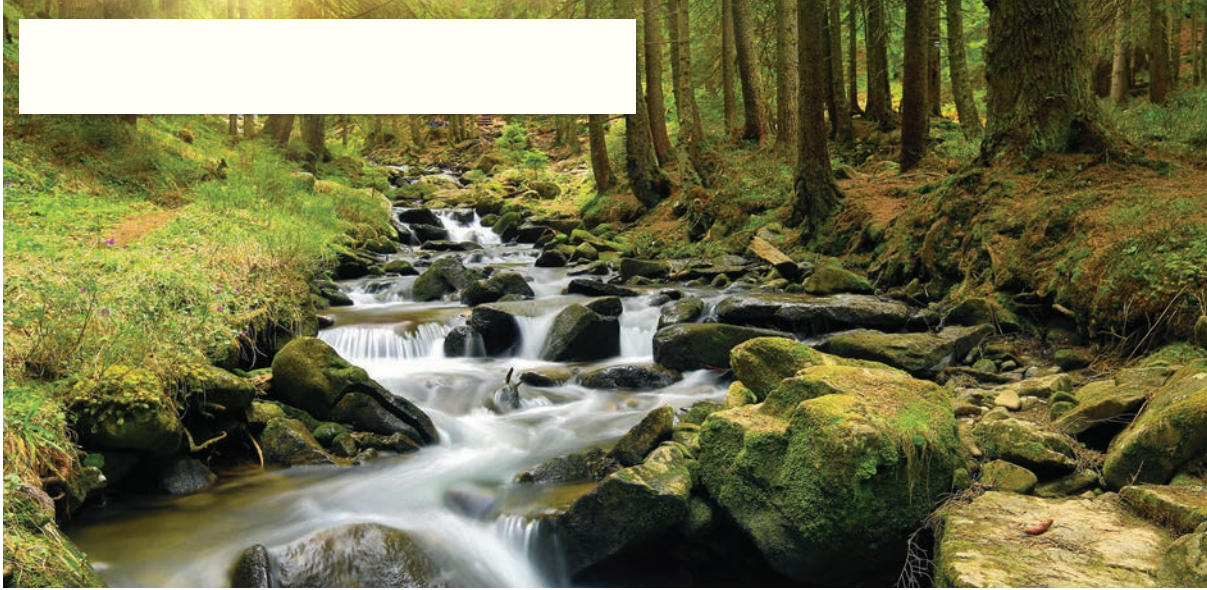
9. Describe how cells are organized in multicellular organisms.

Activity 4.1



Identifying Biotic and Abiotic Factors

1. Name the ecosystem shown in the photograph.



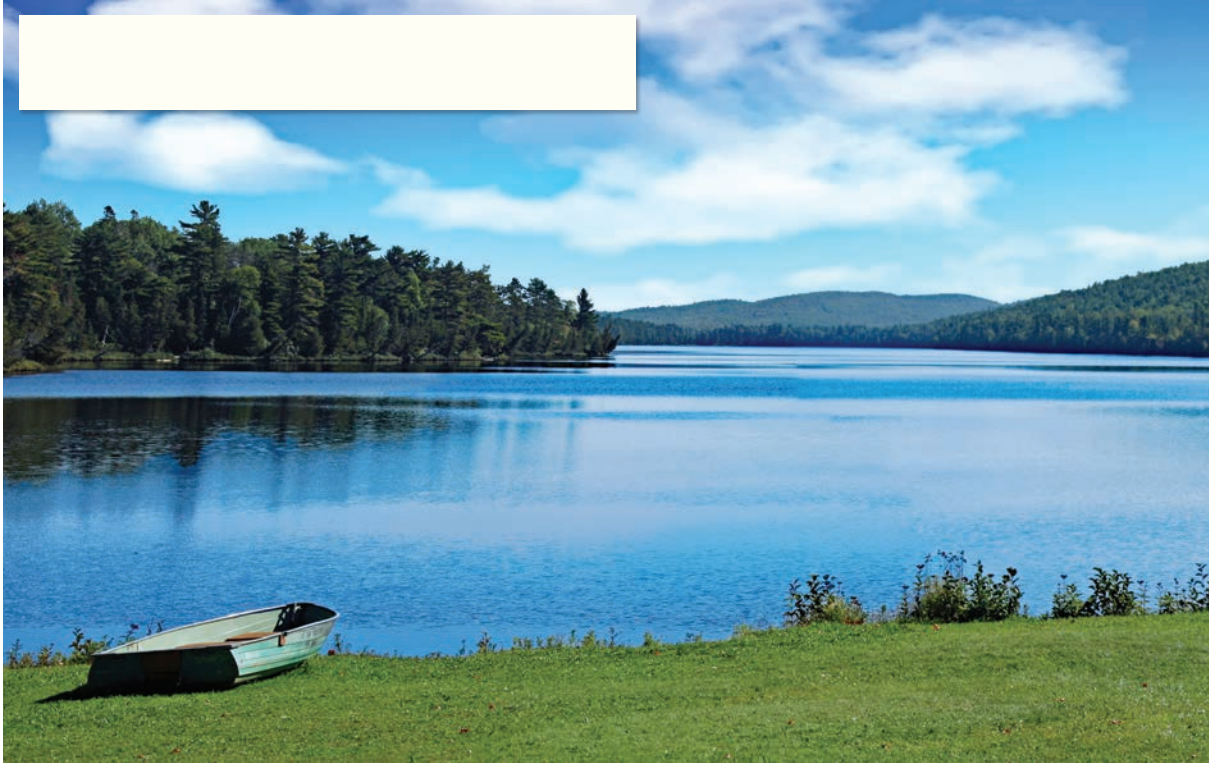
- (a) List some of the biotic factors you would expect to find in the ecosystem.

- (b) List some of the abiotic factors you would expect to find in the ecosystem.

- (c) Part of the ecosystem was cleared of trees to make way for farmland. Describe the effects on the biotic and abiotic factors in the ecosystem.



2. Name the ecosystem shown in the photograph.



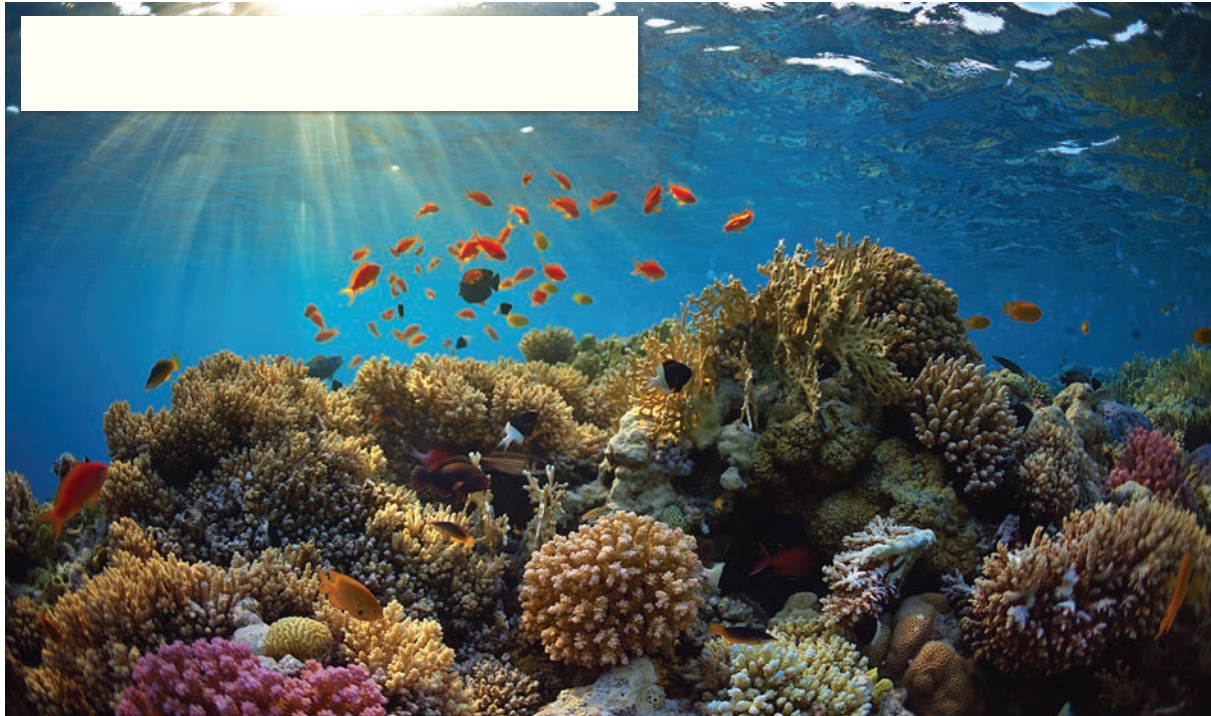
(a) List some of the biotic factors you would expect to find in the ecosystem.

(b) List some of the abiotic factors you would expect to find in the ecosystem.

(c) A nearby factory is releasing pollutants into the water. Describe the effects on the biotic and abiotic factors in the ecosystem.



3. Name the ecosystem shown in the photograph.



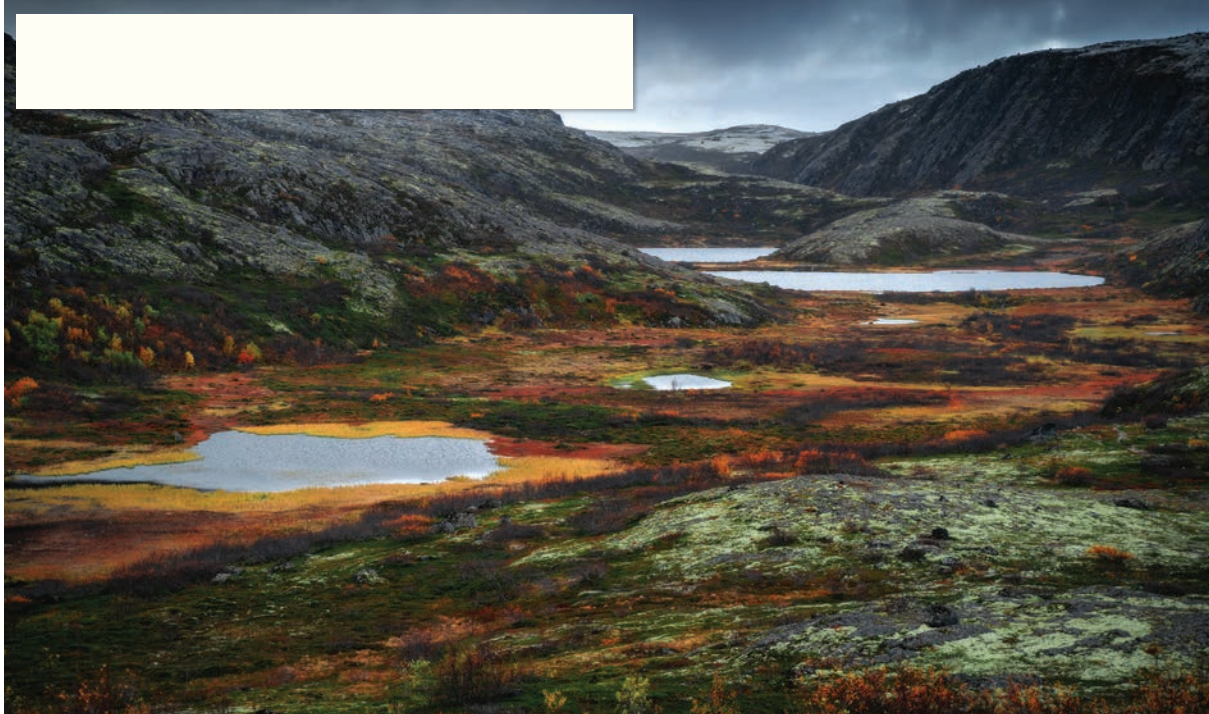
(a) List some of the biotic factors you would expect to find in the ecosystem.

(b) List some of the abiotic factors you would expect to find in the ecosystem.

(c) Rising ocean temperatures is causing some of the corals to die. Describe the effects on the biotic and abiotic factors in the ecosystem.



4. Name the ecosystem shown in the photograph.



(a) List some of the biotic factors you would expect to find in the ecosystem.

(b) List some of the abiotic factors you would expect to find in the ecosystem.

(c) During winter, the air temperature drops by 30°C. Describe the effects on the biotic and abiotic factors in the ecosystem.

Activity 4.2



Ecosystem Organization – Comprehension

1. Use your textbook to help you fill in the blanks.
 - (a) To better understand the interactions between _____ and _____ factors, scientists organize ecosystems into different levels.
 - (b) A single organism is called an _____.
 - (c) All of the organisms of the same kind that interact and _____ within an ecosystem make up a _____.
 - (d) The interacting populations within an ecosystem form a _____.
 - (e) An _____ is the interacting _____ along with the _____ factors that affect it.
2. An eagle and an owl are both birds in a forest ecosystem. Why are they not part of the same population?



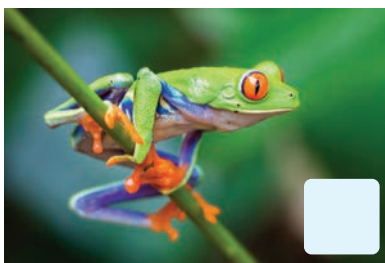
3. Write 'I' for individual, 'P' for population and 'C' for community.

























4. List three things that can affect the size of a population in an ecosystem.



Activity 4.3



Producers to Decomposers

1. Write 'P' for producers, 'H' for herbivores, 'C' for carnivores and 'D' for the decomposers. Write 'S' for the energy source for the producers.



2. What role do decomposers play in an ecosystem?

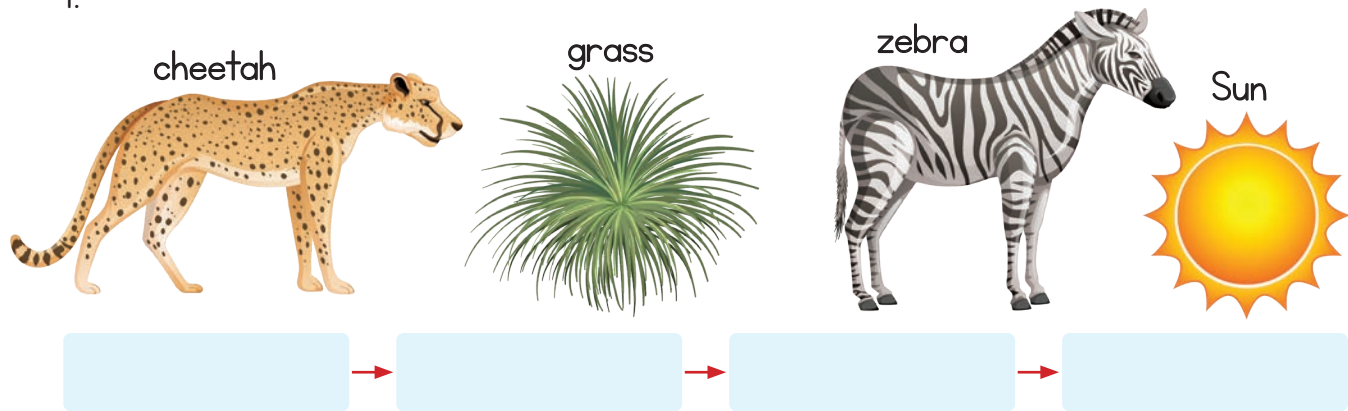
Activity 4.4



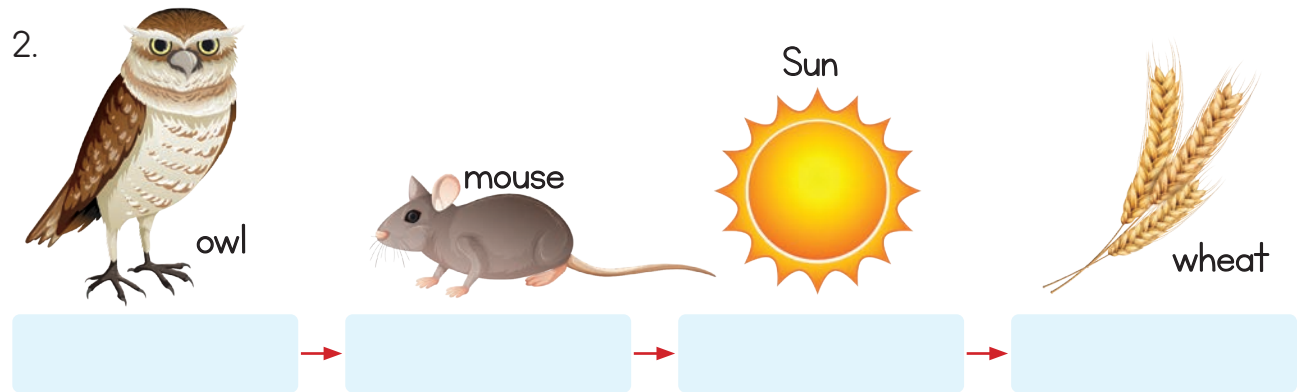
Food Chains

Order the organisms to show the energy pathway in their ecosystem.

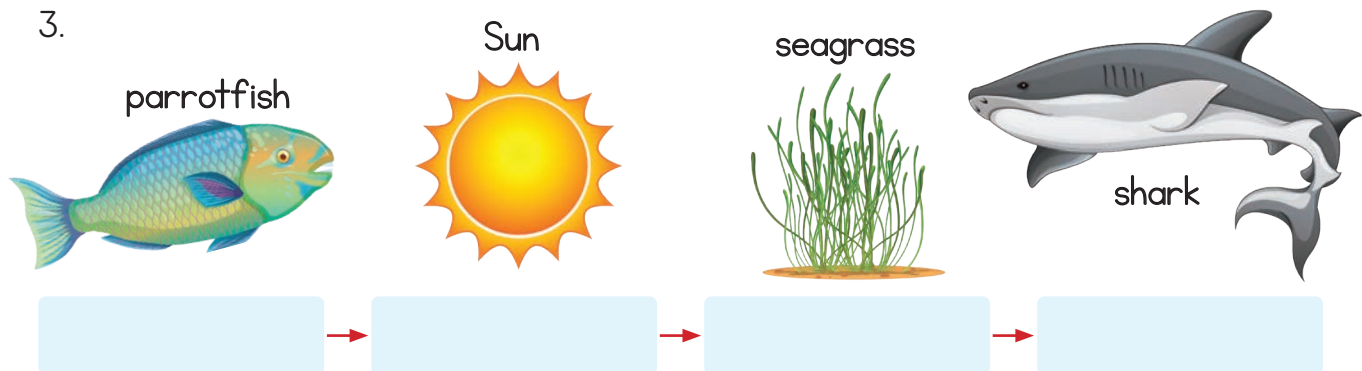
1.



2.



3.





4. Draw arrows to create a grassland food chain.
Use the words in the box to label the organisms.

producer
secondary consumer
top predator

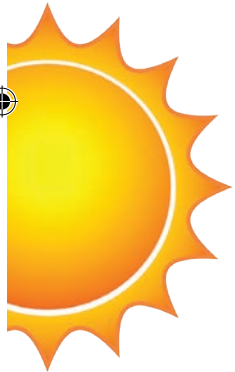
primary consumer
tertiary consumer
decomposer



owl



snake



frog



caterpillar



grass

mushrooms



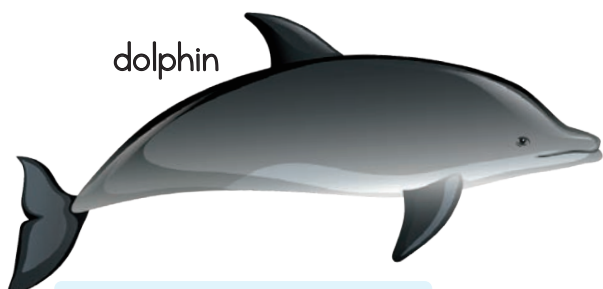




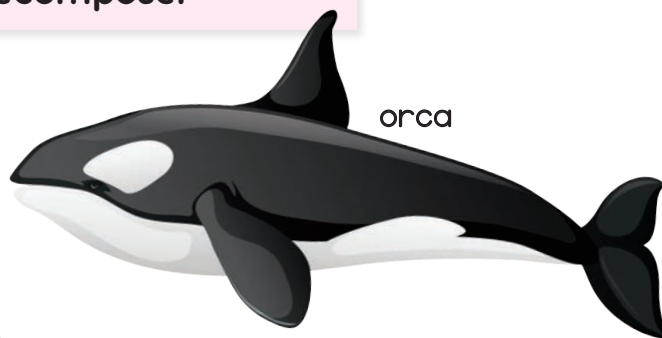
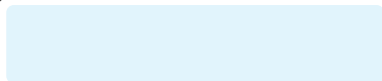
5. Draw arrows to create an Arctic Ocean food chain. Use the words in the box to label the organisms.

producer
secondary consumer
top predator

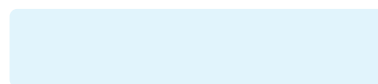
primary consumer
tertiary consumer
decomposer



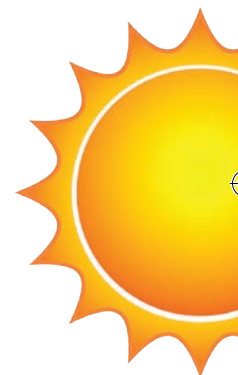
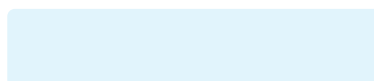
dolphin



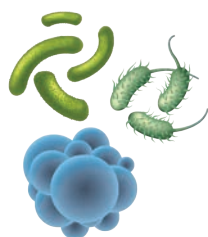
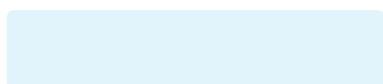
orca



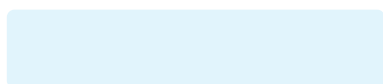
cod



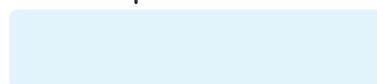
krill



bacteria



plankton



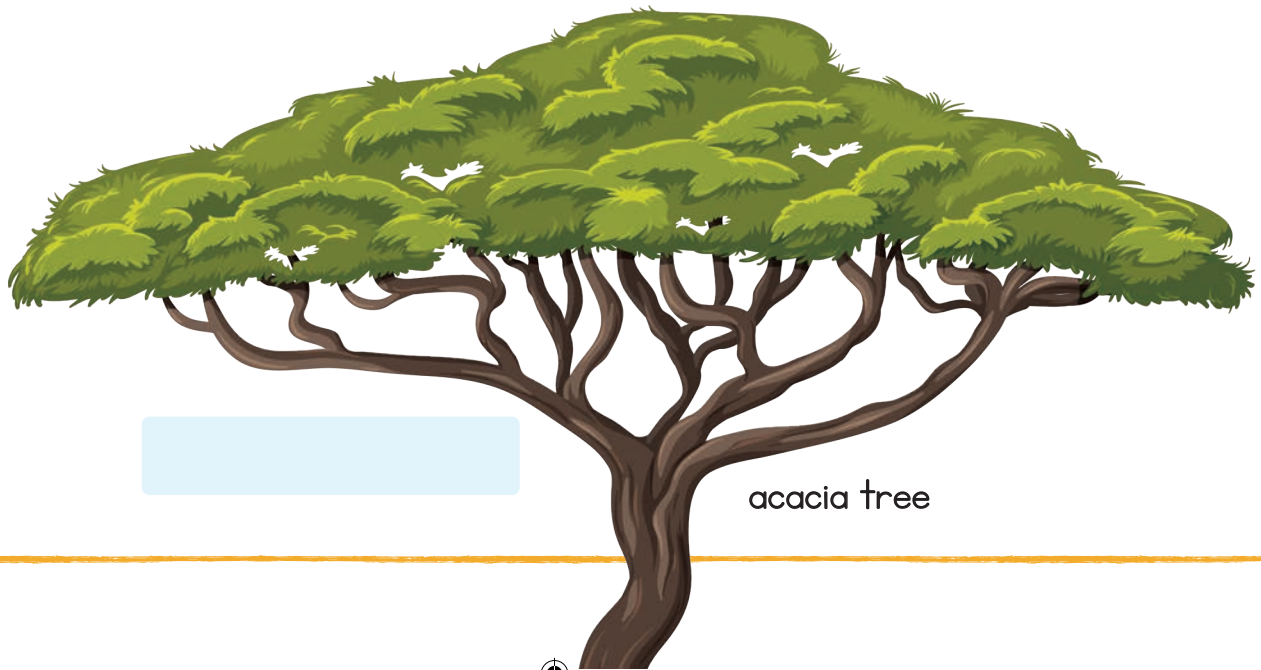
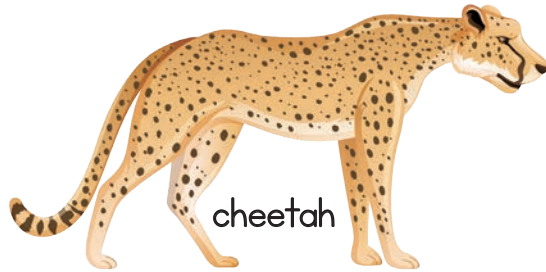
Activity 4.5

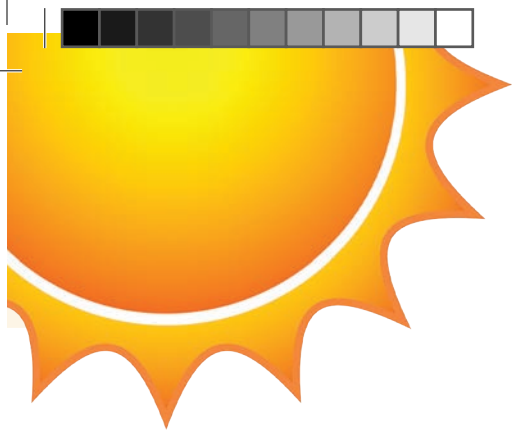


Food Webs

1. Draw arrows to create an African Savanna food web. Use the words in the box to label the organisms.

producer herbivore carnivore

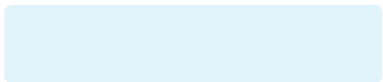




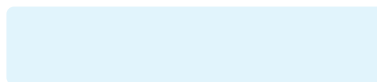
lion



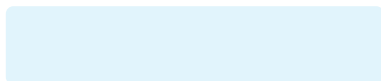
giraffe



gazelle



star grass



Review



Energy in Ecosystems

1. Provide an example where a change in an abiotic factor in an ecosystem can affect the biotic factors in an ecosystem.

2. Provide an example of a population in a coral reef ecosystem.

3. Complete the table.

Role	Description	Example
Producer		
Primary Consumer		
Secondary Consumer		
Tertiary Consumer		
Top Predator		



4. In the space below, draw a simple model to show that all of the energy in an ecosystem can be traced back to the light energy from the Sun.

5. What is the difference between a food chain and a food web?

6. Why are there more primary consumers in an ecosystem than there are top predators?
