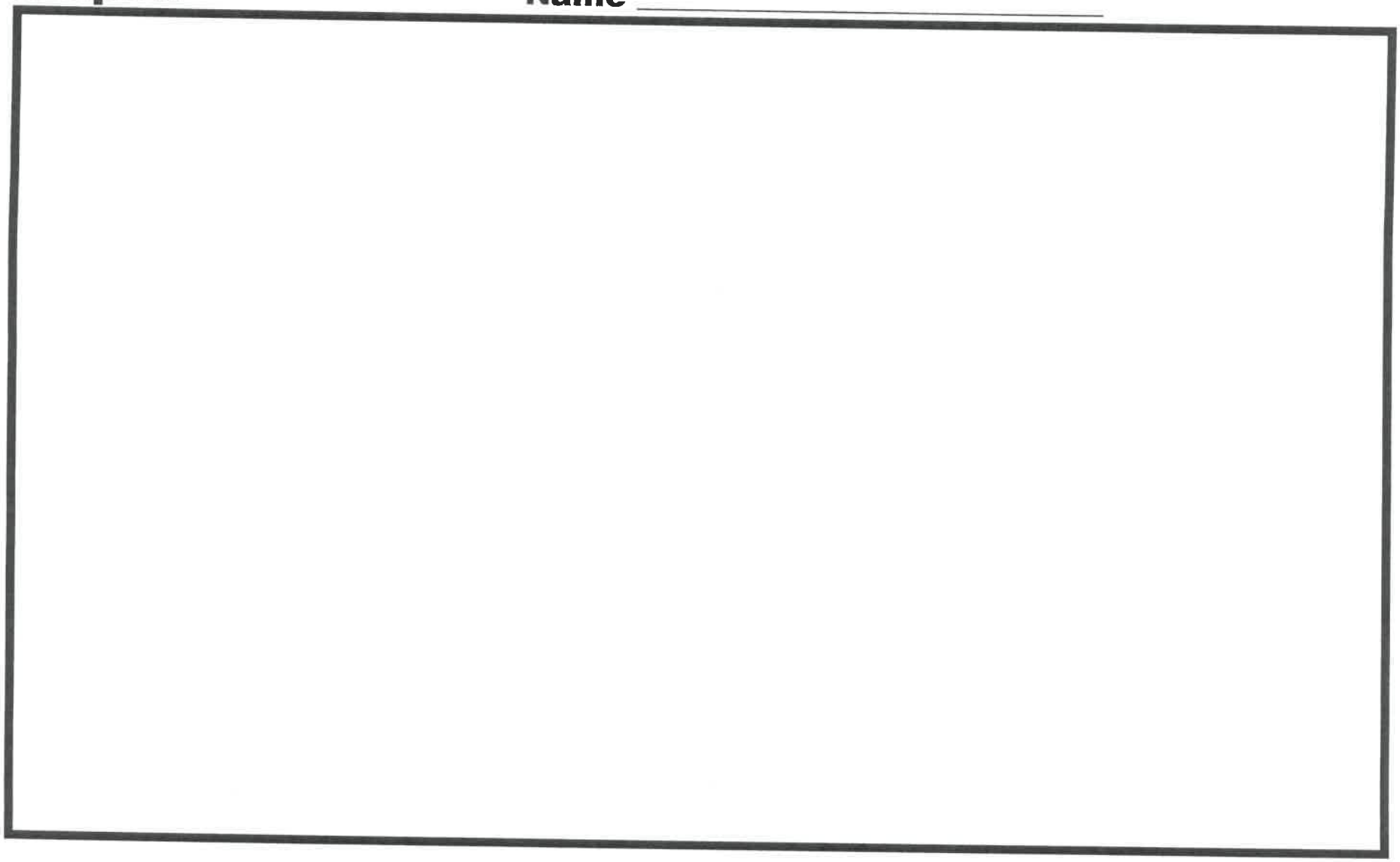
Isopod

Name _____

5th Sci & Social Studies



Ecosystem Lesson 4 Diagram: Common Core State Standard: RST6-8.7 (page 62)

Big **A**ccurate **L**abeled **D**etailed

Name _____

Isopods and Crickets - Lesson 6

1. According to the selection which of the following statements is true?
   - O A. Isopods are scavengers and make their own food.
   - O B. Isopods are scavengers and eat dead and decaying matter.
   - O C. Isopods are scavengers and eat plants and other animals

2. ***Cite the Text.*** Underline the part in the text selection where the answer to Question 1 was located.

3. All plants and animals change the ecosystem where they live. In paragraph 2 on page 70 how can a cricket change the environment? Include information from the text selection in your answer.

   _____
   _____
   _____
   _____
   _____

4. Name two of the isopods enemies and **describe** how the isopod protects itself from them.

   _____
   _____
   _____
   _____

5. ***Cite the Text.*** Underline the part in the text selection where the answer to Question 4 was located.

6. The author states in paragraph 2 on page 70 that crickets are a valuable part of the food chain. Which statement proves this fact?
   - O A. Crickets damage plants.
   - O B. Crickets are considered pests.
   - O C. Crickets are food for snakes and lizards.

7. What is the purpose of the cricket's wings?
   - O A. to fly from predators
   - O B. to chirp
   - O C. to measure the air's humidity

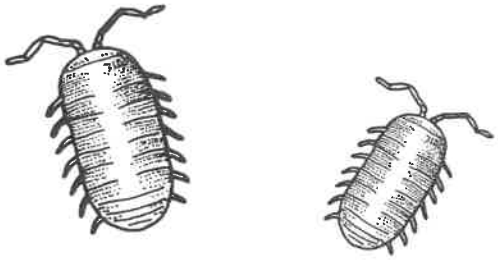
Reading Selection

Isopods: More Like a Lobster!

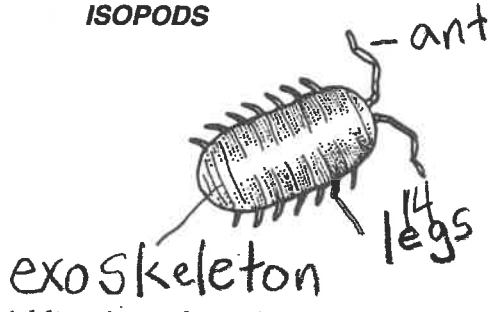
Scientists call them isopods, which means "equal legs." But you probably know them by some other names, like wood louse, pill bug, sow bug, or roly-poly. Isopods are not insects. In fact, they are close relatives of lobsters, crabs, and shrimp. Like those sea creatures, most isopods live in water. There are a few land-living, or **terrestrial,** kinds of isopods, though. Yours belong to this group.

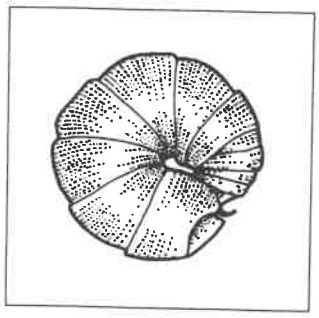
Look at your isopod with a hand lens. You will see a flat oval body covered by smooth, hard plates. It seems to be covered in a suit of armor. That stiff suit of armor is actually a skeleton. But unlike our skeleton, it's worn on the outside and is called an **exoskeleton.** At the head end is a pair of antennae and two tiny eyes.

Now, count the pairs of legs. If your isopod has six pairs of legs, it is very young and has not experienced its first **molt.** What is a molt? The isopod's exoskeleton is good protection, but it cannot grow. So in order to grow, the isopod must shed its old exoskeleton, or "molt." After the molt, it will have seven pairs of legs.



ISOPODS





Pill bugs curl up into a ball to protect themselves.

Half a Molt Is Better than None

It's odd: the isopod sheds only half of its exoskeleton at a time. Usually the front half goes first. Check your isopod's color. Is the color all dark gray or black? Then the isopod has been wearing this exoskeleton for some time. Is the color light gray, or maybe even half light and half dark? Then the isopod has just experienced a molt. Or, it is in mid-molt.

The isopod breathes through specialized organs similar to fish gills. So, like its water-living, or **aquatic,** relatives, the isopod needs moisture at all times. (Keep this in mind whenever you schedule a rain shower for your terrarium. Wet the isopods' corner, too.)

The isopod has many predators, mostly birds, lizards, and spiders. (That is why some isopods, the pill bugs, curl up into a ball to protect themselves.) But isopods are more than just food for other animals. Isopods are **scavengers.** They eat dead and decaying plant matter. What animal in your aquarium also does this job?

Be on the lookout for baby isopods. If you are lucky enough to have a pregnant female, she may be bulging with up to 200 eggs in her brood pouch! How many legs will each baby have? How do you imagine they will look?

Reading Selection

Crickets: A Closer Look

You probably recognize the cheerful chirping of crickets at night. But have you ever looked at a cricket up close? Crickets are insects. An insect's body is divided into three main parts: the head, the midsection (or **thorax**), and the abdomen. Look at your own crickets to identify these parts.

You have a **house cricket** in your terrarium. Attached to the house cricket's head are the eyes, the chewing mouth parts, and the antennae. (Use your hand lens to get a closeup look.) The antennae are almost as long as the cricket's whole body. They tell the insect about the feel, taste, smell, humidity, and temperature of the world outside.

Attached to the cricket's thorax you will find four wings. These will give you clues about your cricket's age. A very young cricket, or **nymph,** has no wings at all. A larger adolescent (teenage) cricket has very short wings. And the largest crickets, the adults, have full-grown wings.

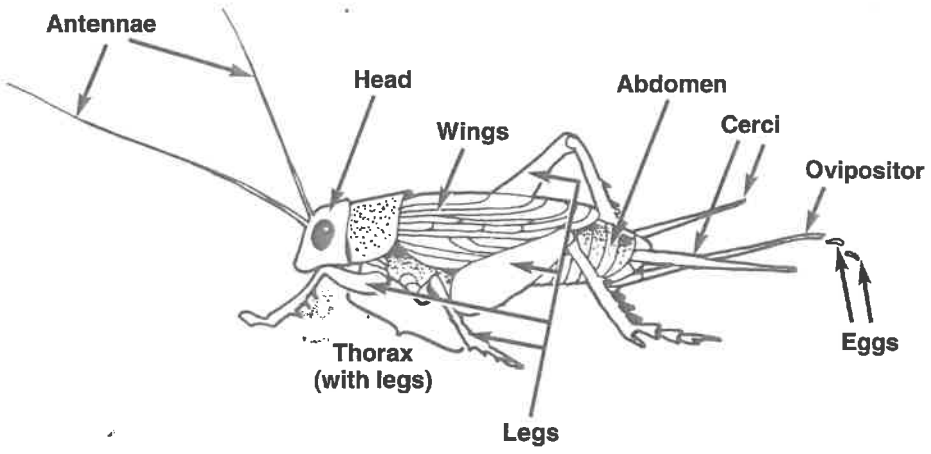
Although the house cricket's wings are weak, they do have a purpose: chirping. But only the adult males can chirp. The sound comes from scraping one wing against another. Why do you think male crickets chirp?

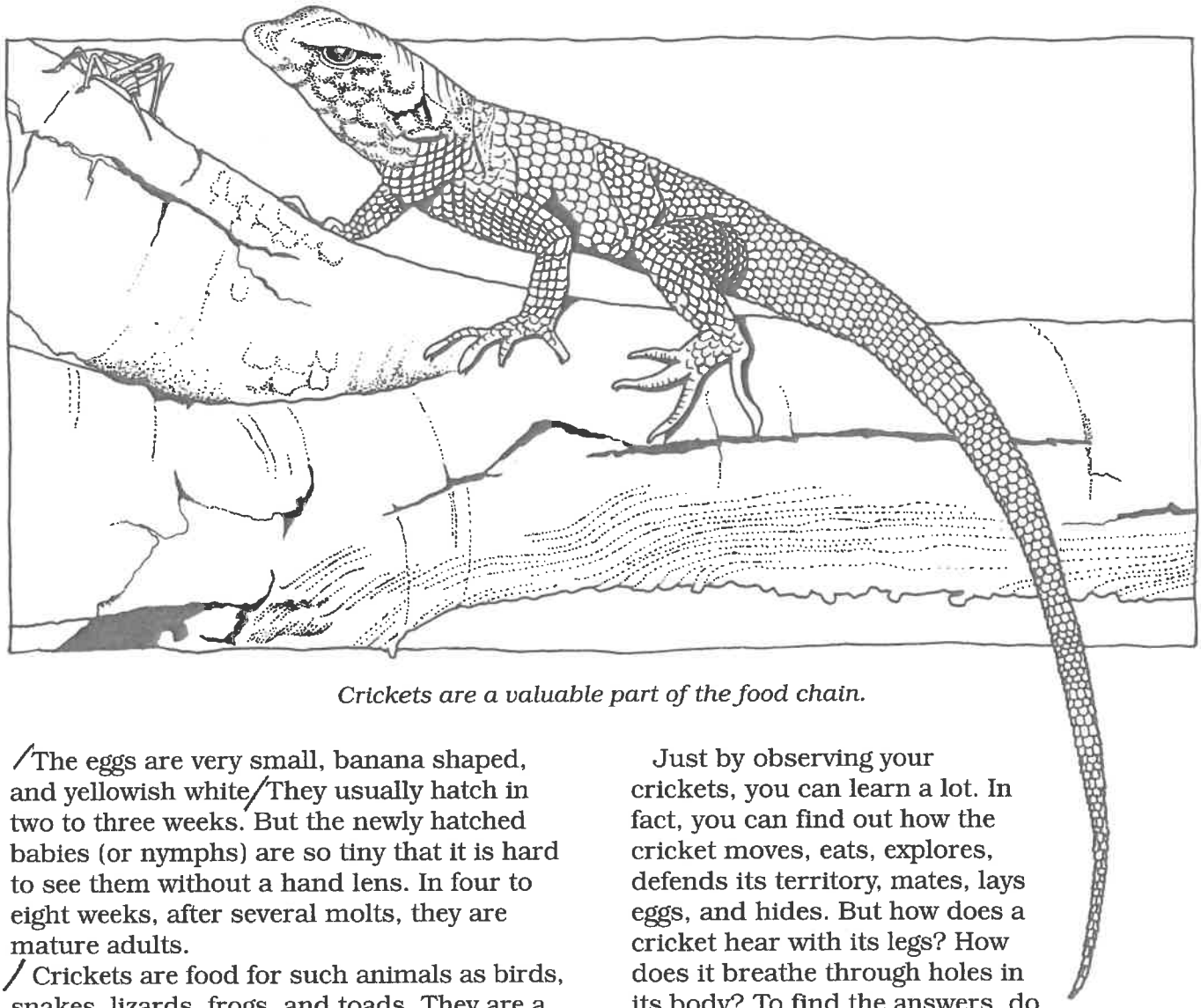
Mighty Jumpers

Also attached to the thorax are the cricket's mighty legs. Count them. Notice that each pair is different. Which are the most powerful? Crickets can jump about 60 cm (2 ft). Let's compare that with how far a person could jump if he or she had the cricket's strength. A 180-cm (6-foot) tall person who had the same ability as a cricket would be able to jump 4,320 cm (144 ft)!

On the back section, or **abdomen,** look for more clues to your cricket's identity. Both males and females have two spines called **cerci** projecting out of the rear of the abdomen. Crickets use these to sense vibrations in the air and ground. But only the adult female has a third projection: a longer, dark, needlelike projection, or **ovipositor.** She uses it to place her eggs in the ground.

FEMALE CRICKET





Crickets are a valuable part of the food chain.

The eggs are very small, banana shaped, and yellowish white. They usually hatch in two to three weeks. But the newly hatched babies (or nymphs) are so tiny that it is hard to see them without a hand lens. In four to eight weeks, after several molts, they are mature adults.

Crickets are food for such animals as birds, snakes, lizards, frogs, and toads. They are a valuable part of the food chain. But they also eat plants and can do a lot of damage to them. In some places, farmers consider them pests.

Just by observing your crickets, you can learn a lot. In fact, you can find out how the cricket moves, eats, explores, defends its territory, mates, lays eggs, and hides. But how does a cricket hear with its legs? How does it breathe through holes in its body? To find the answers, do some research in the library or contact an expert in insects, an **entomologist**.

Fast Facts About Food Chains

1. The **food chain** is the transfer of energy from one species to another.

2. All living things needs energy for living beings to grow.

3. Within a food chain, some living things create the energy **(producers)** and some use the energy **(consumers)**.

4. **Plants are producers of energy**, as they make their own food (using sunlight, water, carbon dioxide and other elements). This process is called photosynthesis.

5. **Animals are consumers**, because they have to eat other animals and plants

6. There are four different types of consumers in the animal kingdom. A **carnivore** is an animal that only eats other animals. An **herbivore** is an animal that only eats plants. An **omnivore** is an animal that eats both plants and animals. A **scavenger** is an animal that eats dead animals.

7. The **food chain** can begin with a plant. The plant is then eaten by an insect. The insect is eaten by a bird. The bird is eaten by a large mammal. The mammal dies after being hit by a car. It decomposes and is broken down and used as food by bacteria and fungi.

8. There are more than 100,000 different types of decomposer organisms. These simpler nutrients are returned to the soil and can be used again by the plants. Then the energy chain begins all over again.

9. If one level is removed from the food chain, it can have disastrous results.

10. Humans are at the end of the food chain. They eat both plants and animals that have consumed other forms of energy.

Using the Fast Facts from the previous page answer the following questions about Food Chains.

1. What is a food chain? _____

   _____

2. What do all living things need to grow? _____
3. What type of organism begins all food chains and creates energy for other organisms._____
4. Why is the process of photosynthesis necessary? _____

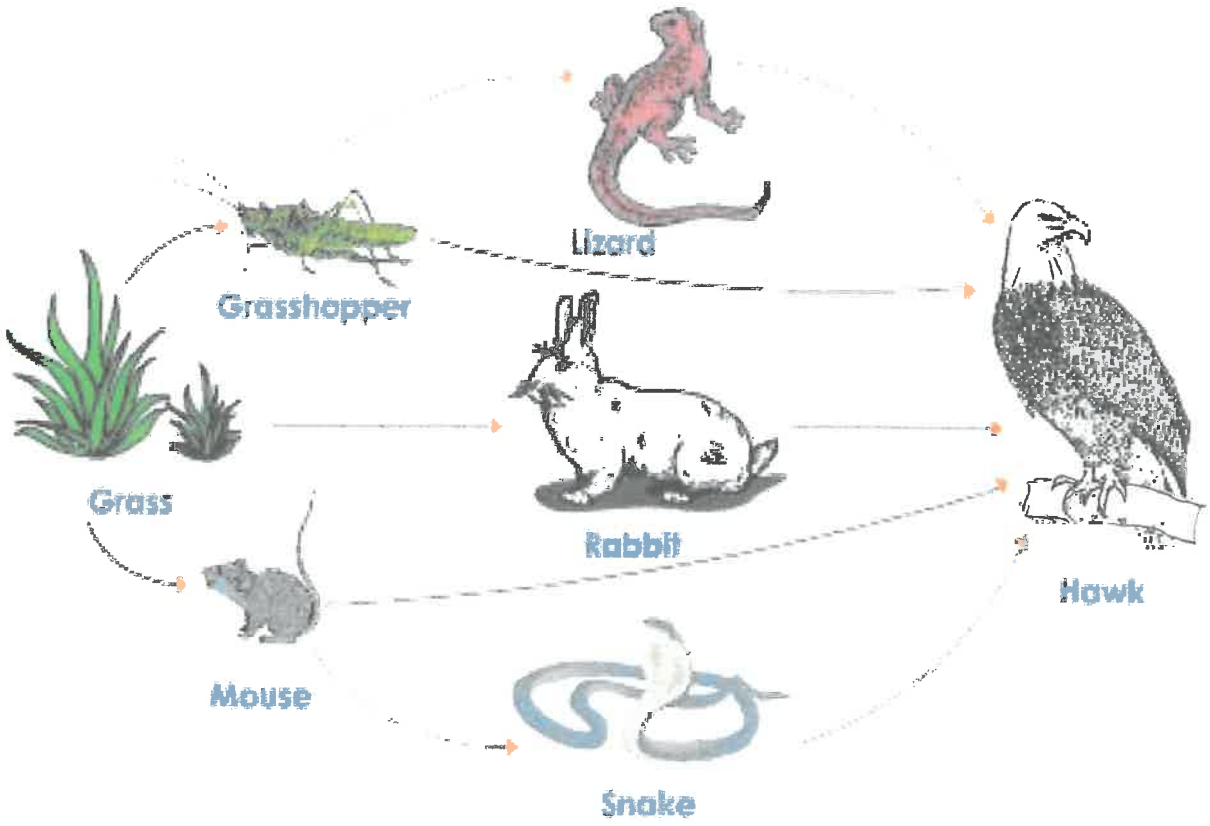
   _____

5. List the four types of consumers and what they eat.

Type	What they eat
_____	_____
_____	_____
_____	_____
_____	_____

6. In the box below <u>draw</u> and <u>label</u> a four part food chain. <u>Use arrows</u> to show where each organisms energy is created.

Name _____



A Food Web in a Grassland Ecosystem With Five Possible Food Chains

Label the five Food Chains shown above in the Grassland Ecosystem. One has been done for you. Remember all food webs begin with a producer.

1. Grass → Mouse → Snake → Hawk

2. _____

3. _____

4. _____

5. _____

Name _____

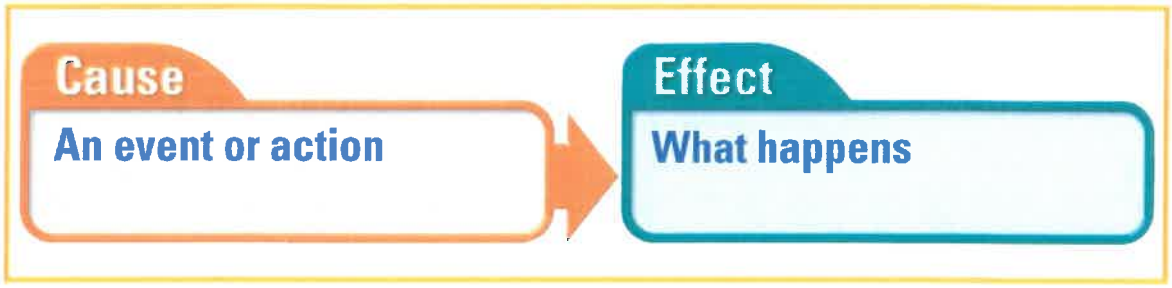
HMH KIDS DISCOVER
Skills

Cause and Effect

DIRECTIONS **Study the information. Think about how identifying cause-and-effect relationships helps you understand what you read. Then apply what you learn.**

Why It Matters

Cause and effect explains the relationship between events and tells what happened (effect) and why it happened (cause). A **cause** is why something happens. To find the cause of something ask yourself, "Why did this happen?" An **effect** is what happens because of something else. To find the effect, ask yourself "What happened?" Recognizing cause and effect can help you understand the relationship between events and actions in the texts you read.



✔ Clue words and phrases such as *because, since, so,* and *as a result* help you identify cause-and-effect relationships. Sometimes, however, there aren't any clue words.
✔ Sometimes an effect may be stated before its cause. Also, a cause may have many effects, and an effect may have many causes.
✔ Sometimes, an effect can become a cause of another effect.

Practice the Skill

Read the following paragraph and find causes and their effects. Draw a circle around each effect and underline its cause.

The land in the Massachusetts Colony was difficult to farm because of the rocky soil and mountainous terrain. The colony also had long, cold winters. Even though the colonists grew some crops, their main exports were fish, livestock, and lumber. They imported the agricultural products they needed from the other colonies.

Name _____

Cause and Effect (continued)

Apply What You Learned

Read the passage and answer the questions.

From Strangers to Neighbors

In 1765, John Rutledge traveled from his home in South Carolina to New York. He called it his first trip to a foreign country. That says a lot about how the colonists viewed one another. The colonies had been founded at different times and for different reasons. Each had its own mix of people, its own economy, and its own form of government. As a result, the colonies really seemed like different countries.

Things were about to change, though, and John Rutledge would play a part in the changes. He was going to New York to meet with representatives from 10 colonies to discuss a new English tax. The colonists thought that the tax was unfair, and they wanted to figure out how to respond to it.

While in New York, Rutledge met with Sir William Johnson. Johnson was a wealthy English merchant who had a strong relationship with the Iroquois Indians. Johnson told Rutledge about how the Iroquois League worked together to solve problems.

Rutledge was impressed with what Johnson told him. He told other colonists about the Iroquois League. Like the Iroquois, the colonists soon began to cooperate and started seeing each other not as foreigners but as neighbors.

Cause and Effect

1. **What caused the colonists to view other colonies as foreign countries?**
2. **What caused John Rutledge to travel to New York?**
3. **What was the effect of John Rutledge telling other colonists about the Iroquois League?**

Name _____

Word Search

DIRECTIONS Circle each word in the letter grid below. The words can appear up and down, across, backwards, and diagonally.

apprentice	debtor	free market	proprietor
backcountry	dissent	naval stores	town meeting
charter	diversity	planter	trial by jury
common			

R Z E C I T N E R P P A V G R
P N A R L Y C H A R T E R T S
X U S O J T L S T Z O Z N O S
X P Q T W I K S R Y W J K L V
L T Q E Z S Z E I C N R F L R
N E G I K R J R A P M T S R X
O K F R N E L O L Z E N P N J
M R R P R V I T B S E E L P U
M A G O L I R S Y T T S A T X
O M H R E D Z L J R I S N L P
C E S P Q I K A U Q N I T J W
R E Y C T I X V R A G D E Y N
M R S X N J C A Y Y W N R Z N
N F W B Y R T N U O C K C A B
R O T B E D L V T H V L K K G

Name _____

Get Set to Read

DIRECTIONS **What do you know about the first English colonies in America? Write (T) for true if you think the statement is true. Write (F) for false if you think the statement is not true. Then read *13 Colonies*. Check back to find out if you were correct. Write the correct answer and the page number where you found it.**

T/F?		After Reading	Page
	1. The first towns and cities in the colonies were near the coast.		
	2. People in the colonies were given fewer democratic freedoms than they had in Europe.		
	3. Ann Hutchinson was the first governor of the Massachusetts Bay Colony.		
	4. The Duke of York gave New Jersey to Peter Stuyvesant.		
	5. William Penn wrote the *Frame of Government* to describe how Pennsylvania would be governed.		
	6. The New England Colonies were known as the Breadbasket Colonies.		
	7. Religious groups were not the only ones looking for a new start in America.		
	8. The first permanent settlement in America was in Jamestown, Virginia.		
	9. North Carolina was the largest English colony in North America.		
	10. Only a small group of Southerners ran large plantations, but small farmers might hold a few enslaved people.		

Challenge: Rewrite each false sentence in a way that makes it true.

Name _____

Draw a Scene

DIRECTIONS **Follow the steps to draw a picture of daily life in a Southern colony.**

Step 1 Gather information to plan your scene.

- Review magazine pages 14–17 to identify aspects of daily life in the Southern Colonies.
- Research information about life in the Southern Colonies in the library media center.

Step 2 Choose an aspect of daily life to show in your drawing. Select the group of people to illustrate. Small farmers? Enslaved people? Wealthy planters? A combination of groups?

Step 3 Draw a scene that shows details about how these people lived.

Step 4 Review your drawing to make sure it is accurate.

Step 5 Write a caption that accurately describes your drawing.

Rubric

Score 4	Score 3	Score 2	Score 1
• The drawing shows a good understanding of daily life. • The drawing contains many accurate details. • The caption represents the drawing clearly.	• The drawing shows some understanding of daily life. • The drawing shows several accurate details. • The caption gives some idea of what is happening in the drawing.	• The drawing shows little understanding of daily life. • The drawing includes few details and lacks accuracy. • The caption is too general and lacks clarity.	• The drawing does not show understanding of daily life. • The drawing is inaccurate, too general, and shows no details. • The caption lacks accuracy and clarity.