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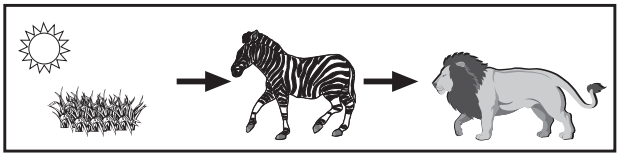
26. Food Chains and Food Webs

A [1]Every organism needs food. [2]Food provides energy, and an organism will die if it does not get enough energy. [3]Plants get energy from sunlight and use it to make their food. [4]Animals get their energy by eating plants or by eating animals that eat plants.

B [5]Because plants make their own food, they are called food **producers**. [6]Animals cannot produce food—they must *consume* plants or other animals to get food. [7]Animals are called **consumers**.

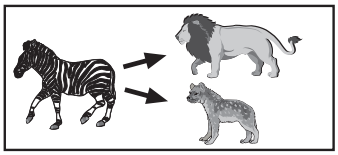
C [8]Without producers, consumers would not live long. [9]That's because animals eat plants or other animals that eat plants. [10]If plants disappeared, animals would run out of food and die.

D [11]A special type of diagram is used to show what-eats-what in an ecosystem. [12]This diagram is called a **food chain**. [13]A food chain is a kind of flow chart.

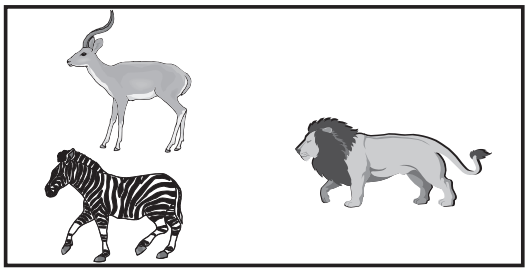


E [14]In a food chain, each organism is called a link. [15]Arrows show the direction energy flows between links. [16]Each arrow means "is eaten by." [17]For example,  means "grass is eaten by a zebra."

F [18]Different animals may eat the same kind of consumer.



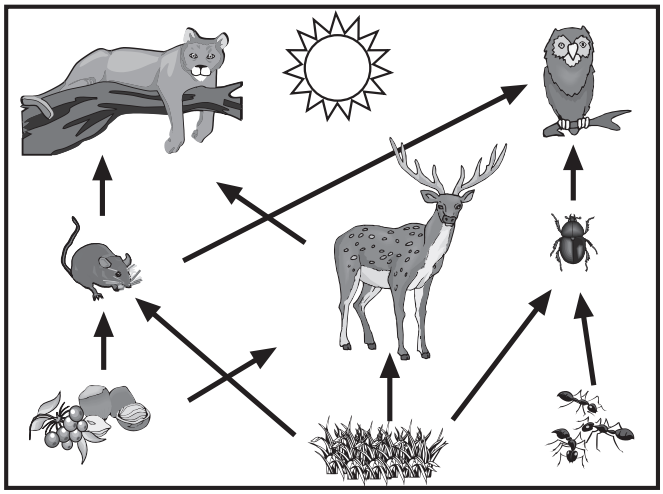
G [19]On the other hand, one kind of animal may eat more than one kind of consumer. [20]A lion eats both zebra and antelope. [21]Where would you draw two arrows to show the flow of energy in the flow chart below?



H [22]It is easier to use names instead of drawing pictures in a flow chart. [23]How would you read this flow chart?

Grass | Zebra | Lion

I [24]A single food chain does not tell how all the organisms in an ecosystem relate to one another. [25]We can learn a lot about an ecosystem by putting several food chains in one diagram. [26]A diagram that combines more than one food chain is called a **food web**. [27]Think about the food web below.



1. For each statement, circle T or F for true or false. In the blanks, write the number(s) of the SENTENCE(s) that gives the best evidence for the answer.

   a. An animal can be a producer. T F ___

   b. A mouse is a consumer. T F ___

   c. Producers get energy from the sun. T F ___, ___

   d. Consumers can survive without producers. T F ___

2. What is the most likely meaning of *consume* as it is used in sentence 6?

   a. change into c. feed

   b. take in d. become

3. Why is the sun part of a food chain? Use complete sentences to explain the answer.

   _____

   _____

   _____

   Write the number of the sentence that gives the best evidence for the answer. ___

4. If plants disappeared, could animals continue to survive? ___

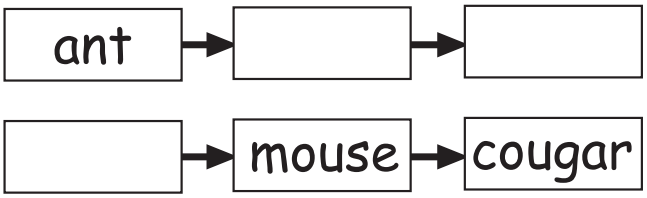
   Use complete sentences to explain why or why not.

   _____

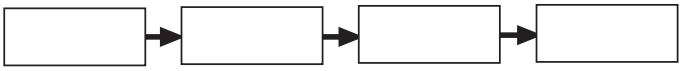
   _____

   _____

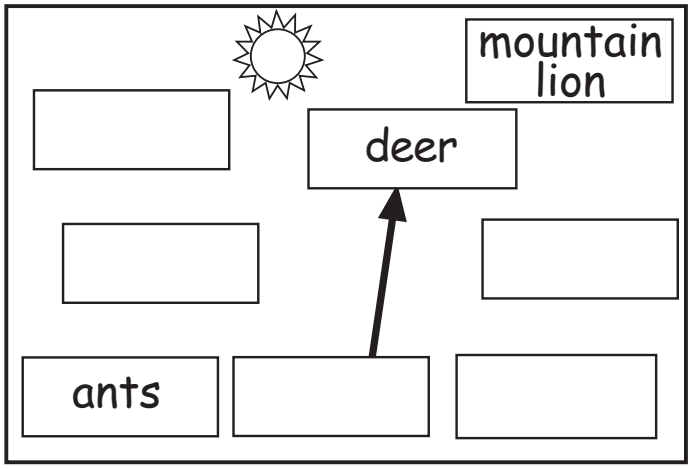
5. Using the food web in the lesson, complete the following food chains of the owl and the cougar.



6. Write the names of the following organisms in the correct order in the flow chart below:
   fish, sea grass, shark, and shrimp.



7. Look again at the food web in the lesson. Then complete the diagram below by adding names and connecting them with arrows.

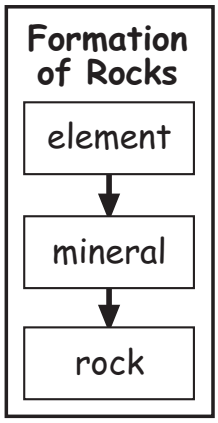


30. Earth Materials and Their Uses

A [1]The earth is made up of a variety of materials, such as rocks, minerals, and metals. [2]People can use these resources in many ways—but first, they have to get them.

B [3]We get many earth materials by digging into the earth's crust. [4]The **earth's crust** is a thin layer of solid rock that makes up the earth's outer layer. [5]It is about 20 miles (32 km) thick.

C [6]**Rock** is made of one or more minerals stuck together. [7]**Minerals** are solid, nonliving substances found in the earth's crust. [8]A mineral is made of elements and compounds. [9]For example, limestone is a mineral made up of calcium, carbon, and oxygen. [10]An **element** is a basic substance made of only one kind of matter.



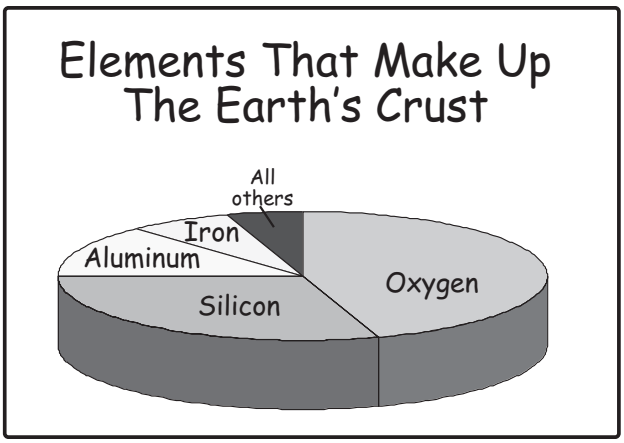
D [11]People use rocks to build things, such as stone walls. [12]Rocks are also used to make other building materials, such as concrete.

E [13]Minerals have many uses. [14]For example, table salt is used to make food taste better. [15]Minerals such as diamonds and gemstones are used to make jewelry. [16]Because they are so hard, diamonds are also used in drills or cutting machines. [17]Coins used to be made from *pure* materials such as gold and silver. [18]Each of these metals is made of a single element. [19]Can you give two examples of metals used to build things like bridges and automobiles?

F [20]People also use the earth as a source of energy. [21]For example, the inside of the earth is so hot that its heat can be used to boil water. [22]Boiling water makes steam. [23]Steam is a force that can be used to produce electricity. [24]The energy in hot water can also be used to heat homes. [25]Some of the earth's minerals are also used as a source of energy. [26]For example, radioactive elements like uranium are used to produce nuclear energy. [27]Fossil fuels like fuel oil and coal also come from the earth.

G [28]The water that covers most of the surface of the earth is another natural resource. [29]We use the oceans in transporting goods and people by boat. [30]If necessary, we can remove the salt to make drinking water. [31]We can even use the motion of ocean waves to produce electricity.

H [32]The circle graph below shows the major elements that make up the earth's crust. [33]About how much of the earth's crust is made up of oxygen?



1. For each statement, circle T or F for true or false. In each blank, write the number of the SENTENCE that gives the best evidence for the answer.
   a. Diamonds are used in drills to make them more attractive. T F ___
   b. An element can be broken down into compounds. T F ___
   c. The motion of ocean waves produces a force. T F ___

2. What is the most likely meaning of *pure* as it is used in sentence 17?
   a. unmixed
   b. mixed
   c. dirty
   d. valuable

3. Sodium chloride is a mineral made up of two elements, sodium and chlorine. Therefore, sodium chloride is
   a. an element.
   b. an atom.
   c. a compound.
   d. a rock.

4. The metal copper is made up of only one kind of matter. Therefore, copper is
   a. an element.
   b. an atom.
   c. a compound.
   d. a rock.

5. Use the *Elements that Make Up the Earth's Crust* pie chart in the lesson to answer the following questions.
   a. Which element is there most of in the earth's crust?
      _____
      How can you tell from the pie chart?
      _____
   b. Which element is there less of, iron or aluminum?
      _____
      Why is this difficult to answer?
      _____
      _____
   c. The earth's crust has over 90 elements. Why do you think the pie chart in the lesson shows only a few of these? Use a complete sentence to explain the answer.
      _____
      _____
      _____

6. Complete the flow chart below to show what makes up a rock, starting with its most complex part to its simplest. Use these terms:
   mineral
   compound
   rock
   element