🦁 Lesson Plan: Food Webs and Food Chains

Grade Level: 4
Subject: Science
Duration: 45–60 min
NGSS 4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

🎯 Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** the Sun as the primary source of energy for all living things in an ecosystem.
- **Classify** organisms as producers, consumers (herbivores, carnivores, omnivores), or decomposers.

- Food Webs and Food Chains Study Guide (https://newpathworksheets.com/api/guide/study-guide-science-grade-4-food-webs-food-chains.pdf)
- Food Chains & Food Webs Activity Lesson (https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-4-food-webs-food-chains-food-chains-food-webs-4.pdf)
- Food Webs/Food Chains Worksheet 0 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-food-webs-food-chains-0.pdf)

- Food Webs/Food Chains Worksheet 1 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-food-webs-food-chains-1.pdf)
- Vocabulary Matching Worksheet 1 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-food-webs-food-chains-1.pdf)

Lesson Procedure

Step 1: Introduction (10 minutes)

- Hook students by asking: 'What did you eat for breakfast? Where did that energy come from originally?' Trace the energy back to the Sun.
- Introduce the concept that all living things need energy to live and that the Sun is the main source.

- Review answers as a class to ensure understanding of the definitions before moving to the activity.

Step 4: Independent Practice (15 minutes)

- Students complete the 'Food Chains & Food Webs' activity where they color, cut, and organize organisms into chains. (https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-4-food-webs-food-chains-food-chains-food-webs-4.pdf)
- Have students categorize the animals as herbivores, carnivores, or omnivores using the matching section of the activity.

Step 5: Assessment (10 minutes)

- Administer the multiple-choice worksheet to assess understanding of energy flow and organism roles. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-food-webs-food-chains-0.pdf)
- Use the additional worksheet for homework or extra practice if time allows. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-food-webs-food-chains-1.pdf)

Differentiation Strategies

For advanced learners:

- Challenge students to create a complex food web using the cut-out organisms and predict what would happen if one specific consumer was removed.

- NewPathWorksheets: Food Webs and Food Chains Topic (https://newpathworksheets.com/science/grade-4/food-webs-food-chains)
- Study Guide (https://newpathworksheets.com/api/guide/study-guide-science-grade-4-food-webs-food-chains.pdf)
- Activity Lesson (https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-4-food-webs-food-chains-food-chains-food-webs-4.pdf)
- Worksheet 0 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-food-webs-food-chains-0.pdf)

- Worksheet 1 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-food-webs-food-chains-1.pdf)
- Worksheet 2 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-food-webs-food-chains-2.pdf)
- Worksheet 3 (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-food-webs-food-chains-food-chains-food-webs-3.pdf)
- Vocabulary 1 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-food-webs-food-chains-1.pdf)
- Vocabulary 2 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-food-webs-food-chains-2.pdf)
- Vocabulary 3 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-food-webs-food-chains-3.pdf)

FOOD WEBS AND FOOD CHAINS

We All Need ENERGY…

Every living organism on Earth needs **energy** to live, including plants, animals, and us! The **main energy source** for all living things on Earth is the Sun. The process of energy being **captured** by plants from the sun and then transferred from one organism to the next in the food chain is referred to as **energy flow** within an ecosystem. Sunlight and plants are the two most important things our ecosystem needs in order to always have a **supply of energy**.

Lesson Checkpoint:
What is the main source of energy for all living things?

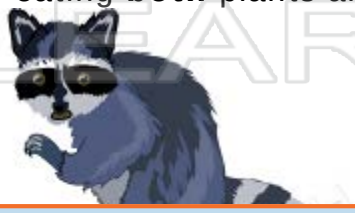
Producers

decomposers. What are those?

Herbivores get energy by eating **only plants**.

Carnivores get energy by eating **only other animals**.

Omnivores get energy by eating **both** plants and other animals.



Food Chains

Energy found in plants can be passed along from animal to animal through a **food chain**. In a food chain, energy is passed by an animal eating and being eaten.

All food chains begin with energy received from the Sun. After the Sun, the next link in every food chain is plants. Plants are the only organisms that get energy from Sun.

In a food chain diagram, the arrows show the **transfer or flow of energy** from one organism to the next.

If one animal species in a food chain **dies**, that will affect all the animals in the food chain.

Lesson Checkpoint: What is a food chain?

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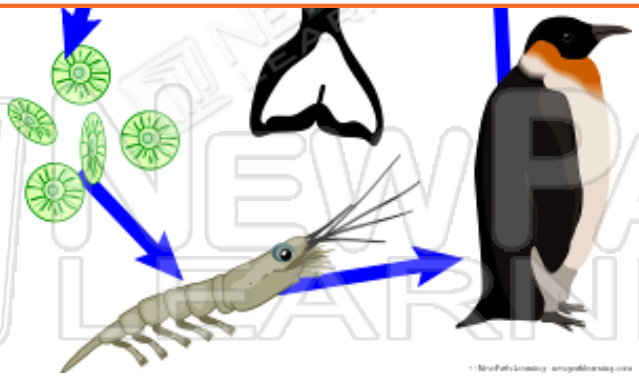

Food Webs

There are also food webs in an ecosystem. A **food web** is a system of overlapping food chains. An ecosystem has many **food chains.** An animal can be the eaten by many different types of animals and therefore be a part of many different food chains.

The following diagram is an example of a food web. Can you see the food chains within this web?

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Survival

All living organisms depend on other organisms in an ecosystem in order to survive in an ecosystem! This is called interdependence. Being **interdependent** means to depend and rely on one another. Interdependence of populations within a food chain helps to maintain the balance of plant and animal populations within a community.

Lesson Checkpoint:
What does it mean to be interdependent?

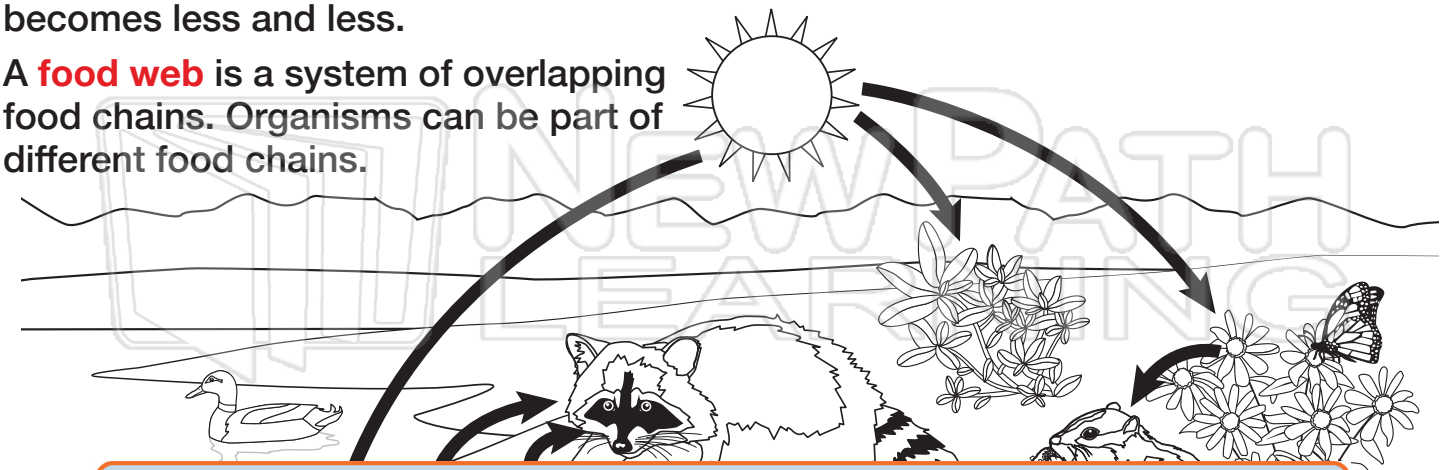
Food Chains & Food Webs

Sci D

Name _____ Class _____ Date _____

Energy is captured by **plants** from the **Sun**, and then transferred from one organism to the next in a **food chain**. This is referred to as **energy flow**. As the energy is passed on from organism to organism along a food chain, the amount of energy becomes less and less.

A **food web** is a system of overlapping food chains. Organisms can be part of different food chains.



Produ
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Consumers eat other living things in order to get energy.

Food Chains & Food Webs

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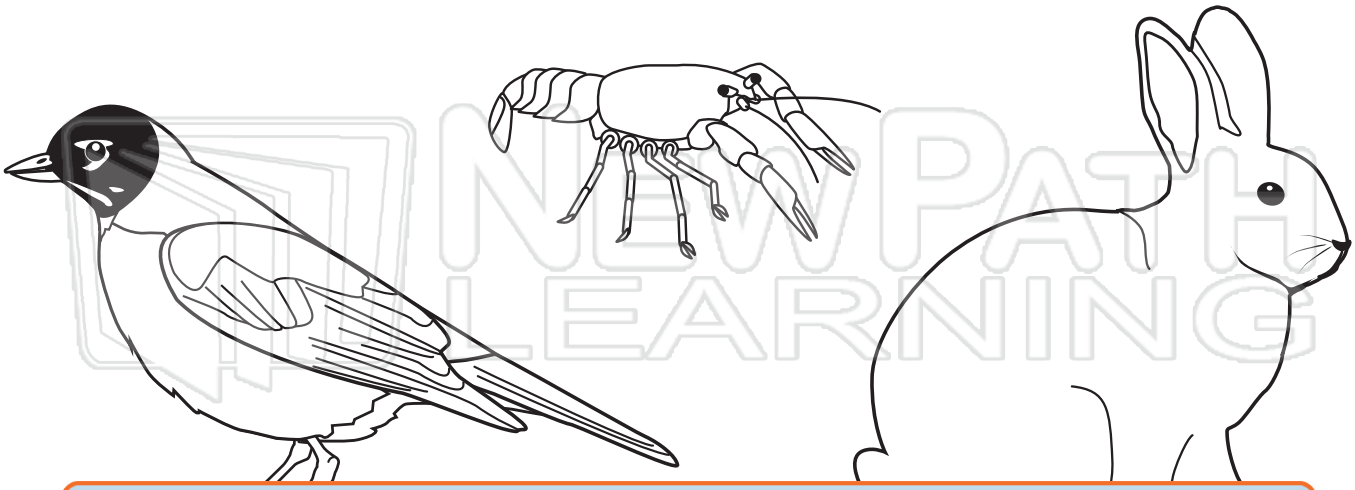
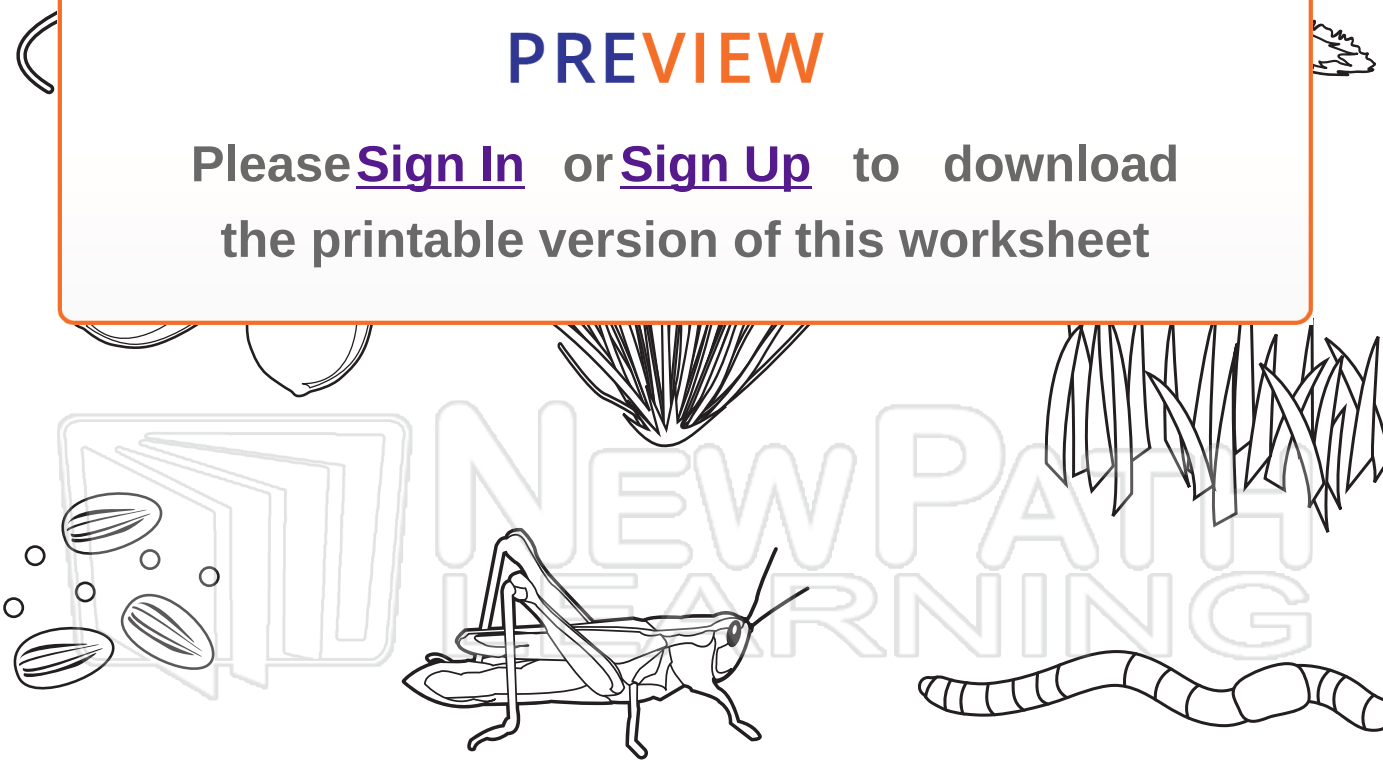
Name _____ Class _____ Date _____

Color the organisms and cut them out. Use them to make different food chains and food webs. Draw arrows to show the direction of energy.





Food Chains & Food Webs

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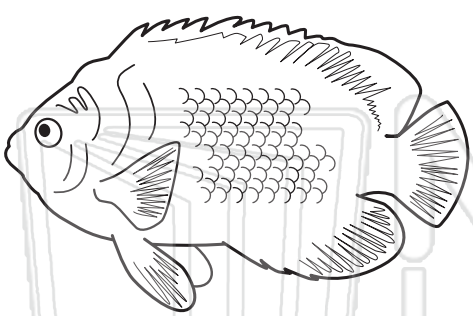

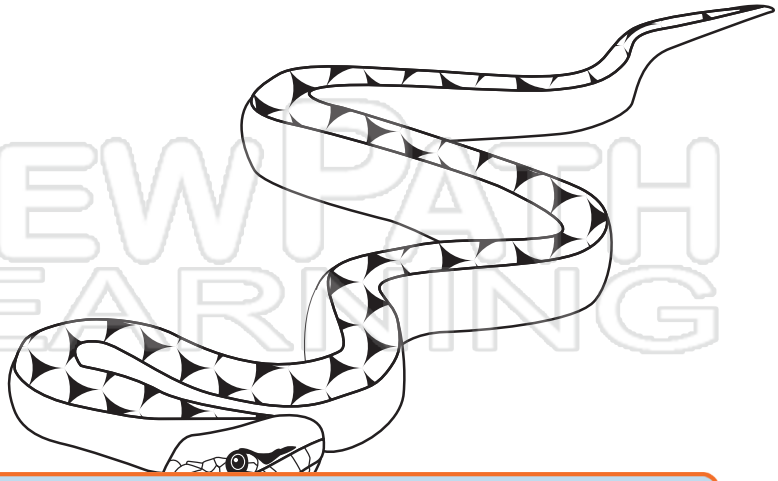

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Food Chains & Food Webs

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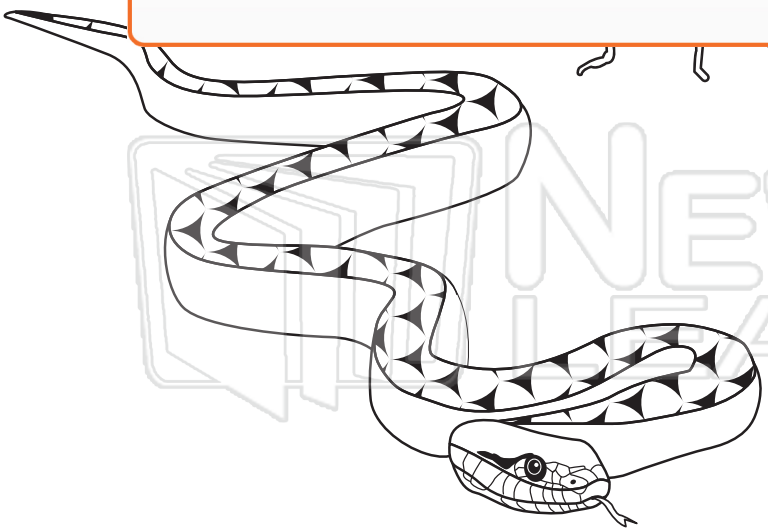
Name _____ Class _____ Date _____

Herbivores are animals that eat plants. **Carnivores** eat other animals. **Omnivores** eat both plants and other animals. Draw a line to match each animal to a category.

herbivore



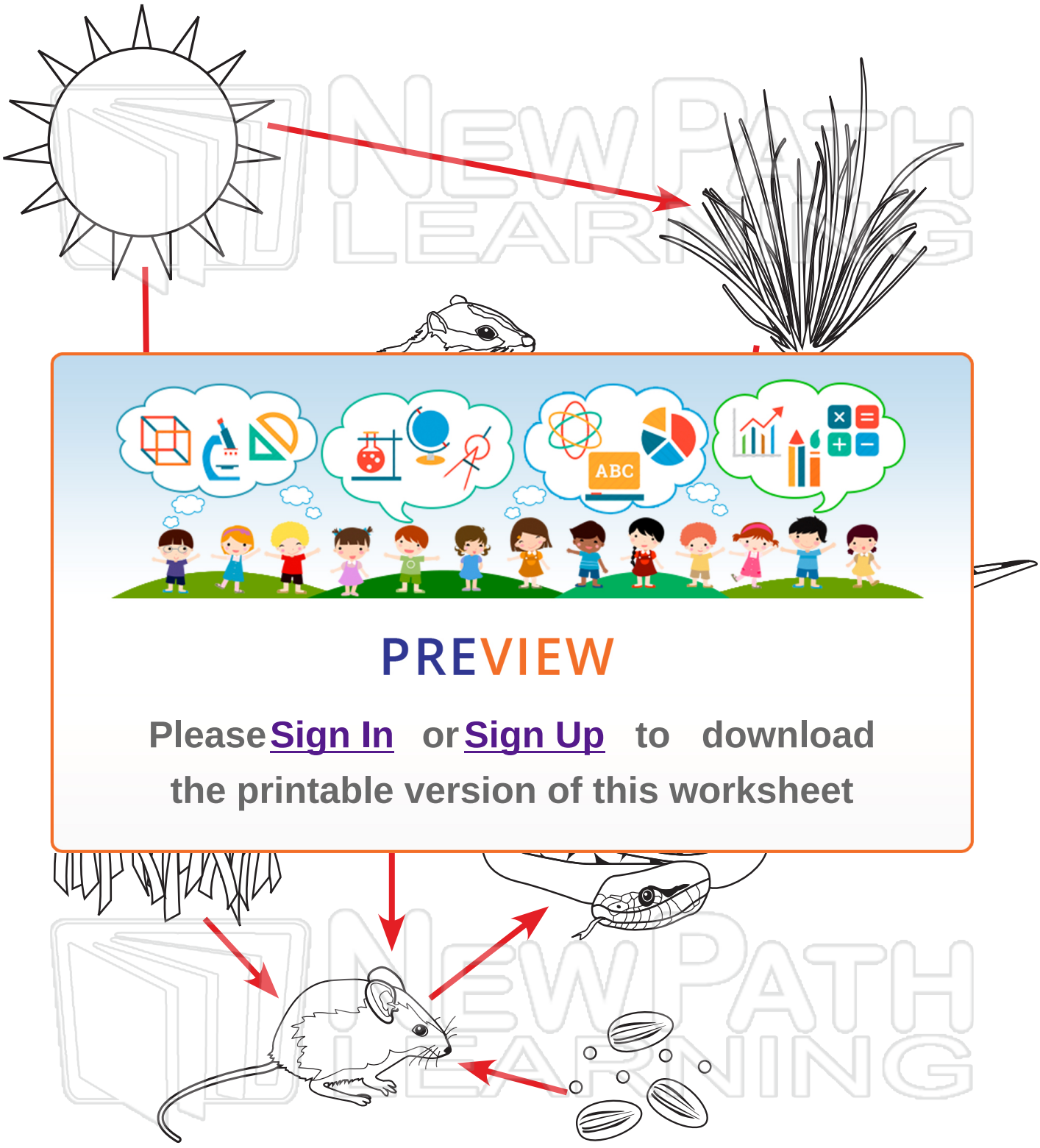
omnivore

Food Chains & Food Webs

Sci D

Answer Key - Example

Color the organisms and cut them out. Use them to make different food chains and food webs. Draw arrows to show the direction of energy.



Food Chains & Food Webs

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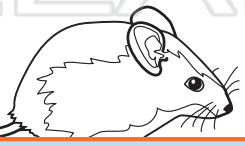

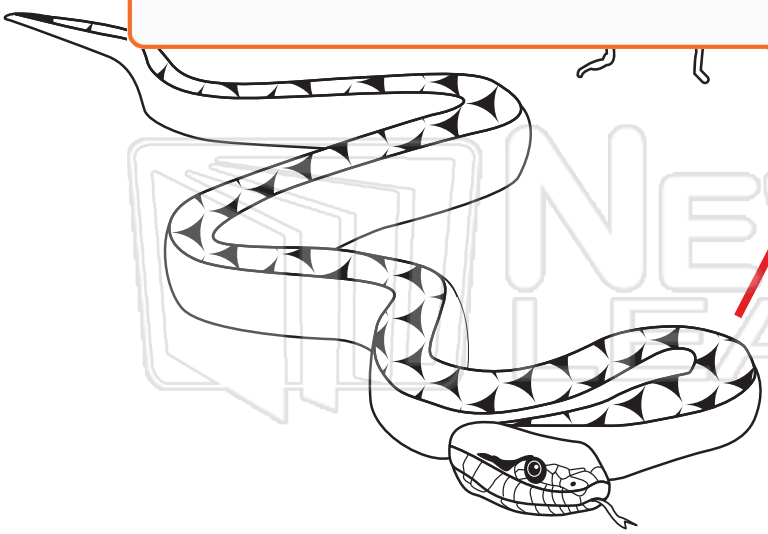

omnivore

Food webs/food chains

Sci D

Name_____ Class_____ Date_____

1 **All** living organisms on earth need _____ to live.

A energy
B grass
C soil
D sleep

2 What is the **main energy source** for all living things on earth?

A animals
B plants
C the sun
D rain

3 The process of energy being **captured** by plants from the sun and then transferred from one organism to the next in the food chain is called _____.

A food flow

4 What are the two most important things our ecosystem needs in order to always have a **supply of energy**?

A sunlight and plants

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5

7

C consumers
D processors

D Producers

9 Organisms that get energy by eating **only other animals** are called _____.

A omnivores
B herbivores
C carnivores
D producer

10 An animal that eats **both** plants and other animals is a (an) _____.

A producer
B herbivore
C carnivore
D omnivore

Food webs/food chains

Sci D

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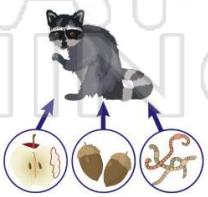


D

Food webs/food chains

Sci D

Name_____ Class_____ Date_____

1 _____ get energy by eating **dead matter**, like dead plants and animals.

A Omnivores
B Carnivores
C Decomposers
D Herbivores

2 Decomposers break down dead plants and animals into nutrients that are added back into the soil. What organisms then **use those important nutrients** to grow healthy and strong?

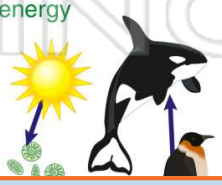
A plants **C** humans
B hawks **D** bears

3 _____ found in plants can be passed along from animal to animal through a **food chain**.

A Water
B Energy

4 In a **food chain**, energy is passed by an animal eating and _____.

A being eaten



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A energy **C** eggs
B water **D** air

A uncontrollable **C** greater
B more noticeable **D** less and less

9 Which consumer is getting the **most** amount of energy in its meal?

A grass
B frog
C insect
D snake

10 The **more** links on the food chain, the **more energy** each animal gets along the way.

True or false?

A true
B false

Food webs/food chains

Sci D

Name_____ Class_____ Date_____

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B Carnivores
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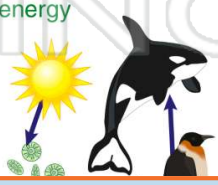

A

5

D

7

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D

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B frog
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D snake

C

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True or false?

A true
B false

B

Food webs/food chains

Sci D

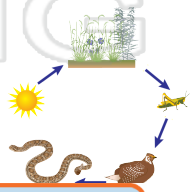
Name_____ Class_____ Date_____

Match each of the following terms to its definition:

Photosynthesis	Consumer	Carnivore	Ecosystem
Energy pyramid	Food chain	Decomposer	Energy

1. - an organism that is not able to make its own food and obtains energy from eating other organisms

2. - a chain of plants and animals in which a plant or animal is eaten by the next animal on the chain to obtain energy



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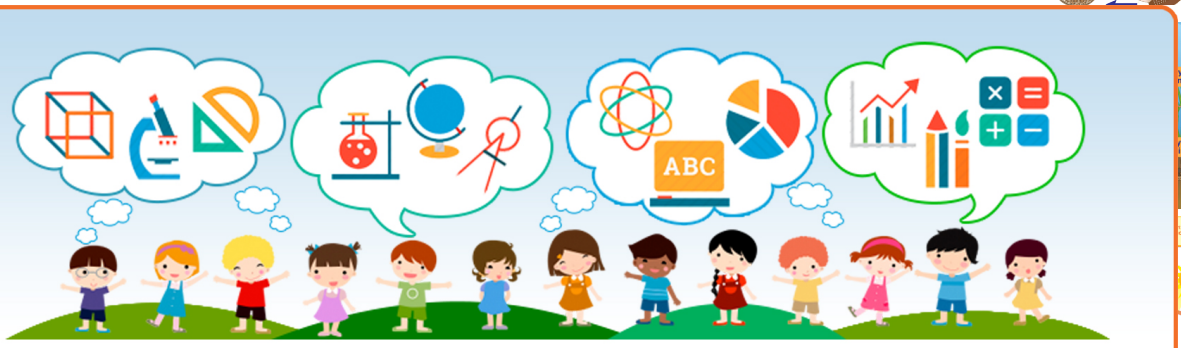

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5. anima

6. absorb

7. - the living and nonliving components of an environment and the way they interact with each other and their environment

8. - a diagram that shows the amount of energy that moves through feeding levels of a food web

Food webs/food chains

Sci D

Name_____ Class_____ Date_____

Match each of the following terms to its definition:

Photosynthesis	Consumer	Carnivore	Ecosystem
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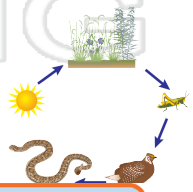
1. consumer - an organism that is not able to make its own food and obtains energy from eating other organisms

2. food chain - a chain of plants and animals in which a plant or animal is eaten by the next animal on the chain to obtain energy



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6. dec
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7. ecosystem - the living and nonliving components of an environment and the way they interact with each other and their environment

8. energy pyramid - a diagram that shows the amount of energy that moves through feeding levels of a food web