



Lesson Plan: Interactions Among Living Things

Grade Level: 5

Subject: Life Science

Duration: 45–60

NGSS 5-LS2-1: Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Learning Objectives

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

- **Define** the three main types of interactions among living things: competition, predation, and mutualism.
- **Identify** examples of competition, predation, and mutualism in specific ecosystems.



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from dead plants, animals, and waste materials.

- **Competition:** The struggle between organisms for the same limited resources such as food, water, or living space in an ecosystem.
- **Predation:** The interaction in which one organism (the predator) hunts, kills, and eats another organism (the prey) for food.
- **Symbiosis:** A long-term relationship between two or more different organisms living closely together, which may benefit one or both members or harm one while the other benefits.



Materials Needed: (all links are included in this PDF)

- Printed copies of the Study Guide (<https://newpathworksheets.com/api/guide/study-guide-science-grade-5-interactions-among-living-things.pdf>)
- Vocabulary matching worksheet (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-interactions-among-living-things-1.pdf>)
- Interactions among living things worksheets (multiple sets) (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-5-interactions-among-living-things-0.pdf>)
- Chart paper or whiteboard
- Markers or colored pencils

Lesson Procedure



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- Introduce the three main types of interactions: competition (organisms competing for limited resources), predation (one organism eating another), and symbiosis (including mutualism, commensalism, and parasitism).

Step 3: Guided Practice (15 minutes)

- Distribute the vocabulary matching worksheet and work through it as a class, reinforcing key terms such as food chain, consumer, decomposer, and energy.

(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-interactions-among-living-things-1.pdf>)



- Use the Study Guide to show food chain and food web diagrams, discussing how arrows represent energy flow from one organism to another.
(<https://newpathworksheets.com/api/guide/study-guide-science-grade-5-interactions-among-living-things.pdf>)
- Have students identify producers, consumers, and decomposers in sample food chains and explain what would happen if one organism were removed from the chain.

Step 4: Independent Practice (15 minutes)

- Provide students with the interactions among living things worksheets to complete individually, identifying food chains, energy flow, and types of interactions.
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-5-interactions-among-living-things-1.pdf>)
- Instruct students to draw their own food web for a specific ecosystem (forest, ocean, or grassland) and label all producers, consumers, and decomposers.
- Encourage students to use colored pencils to trace energy flow through their food webs with arrows.



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- Challenge advanced learners to research and present on a specific symbiotic relationship (such as clownfish and sea anemones) and explain how both organisms benefit.
- Have students create a more complex food web that includes multiple food chains and shows how the removal of one species could impact the entire ecosystem.

For learners needing support:

- Provide pre-labeled food chain diagrams with missing components for students to fill in, offering visual support for understanding energy flow.
- Offer one-on-one or small-group assistance during independent practice, using concrete examples such as a simple grass-rabbit-fox food chain to reinforce concepts.



Extension Activities

- Research Project: Assign students to research a specific ecosystem (rainforest, coral reef, desert) and create a poster showing at least three food chains and one food web from that ecosystem.
- Ecosystem Simulation: Have students role-play as different organisms in a food web, acting out predator-prey relationships and competition for resources to see how changes in one population affect others.
- Creative Writing: Ask students to write a short story from the perspective of an organism in a food chain, describing its daily struggle for food, water, and survival.

Complete List of Available Resources:



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[among-living-things-1.pdf](#))

- Vocabulary: Interactions Among Living Things (Set 2)
(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-interactions-among-living-things-2.pdf>)
- Vocabulary: Interactions Among Living Things (Set 3)
(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-interactions-among-living-things-3.pdf>)

INTERACTIONS AMONG LIVING THINGS

The Flow of Energy

An important and essential interaction among living things involves the flow of energy within an environment. ALL living organisms need energy to survive! **Energy** moves (or flows) through an environment through food chains and food webs.

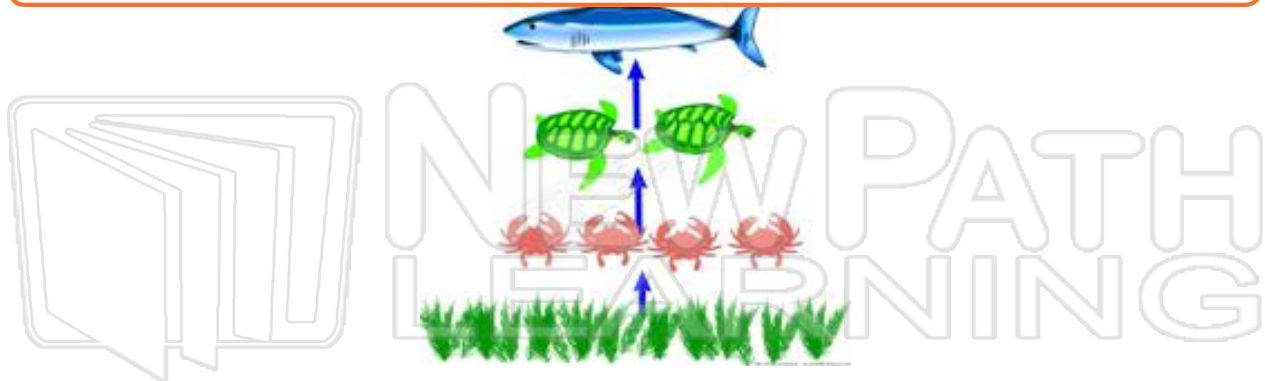
Food Chains

The following is an example of a **food chain**:



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Food Webs

A **food web** consists of many food chains that overlap each other in an environment. This is because not all animals eat the same, exact thing all the time. If animals did eat the same food, relying on a single food chain, their survival could be threatened if something happened to that one food source.

Food webs and food chains include several key players:

Producers – which are plants - they are organisms that make their own food and get their energy from the Sun.

Consumers – those organisms who can't make their own food and obtain energy by eating other organisms (all animals happen to be consumers).

Consumers include several specific groups of organisms:

- **Herbivores** – organisms that only eat plants
- **Carnivores** – organisms that only eat other animals
- **Omnivores** – organisms that eat both plants and other animals,



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organisms that may benefit each member, may benefit only one member, or may harm one organism while the other benefits.

Different forms of symbiosis:

Commensalism is the relationships between members of two different species, in which one organism is benefited while the other organism is neither harmed nor benefited in any way. An example of commensalism is a bird nest in a tree (the bird gets a place to live and the tree doesn't get hurt and doesn't benefit from the bird).



Parasitism is the relationship between two different organisms in which one organism lives in or on another organism and benefits greatly while causing harm to the organism it is living on or in. A **parasite** is an organism that feeds off another organism. The organism that a parasite feeds off of is called a **host**. An example of parasitism is a tapeworm living inside a dog.

Mutualism is the relationship between two organisms in which BOTH organisms benefit. An example of mutualism is a bee and flower. A bee



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Name _____ Class _____ Date _____

1 The following picture represents a(n) _____.

A metamorphosis
B food chain
C energy pyramid
D life cycle

2 Which organism in this food chain is **not a consumer**?

A the owl
B the grasshopper
C the grass
D the mouse

3 Food chains and food webs show the **flow** of _____ within an ecosystem.

A energy
B oxygen

4 Which organism in this food chain is taking in the **least amount of energy**?

A the caterpillar
B the snake
C the grass



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C consumers
D producers

C lack of food
D surplus of food

9 What does an **herbivore** eat?

A plants and other animals
B only dead animals
C only plants
D only other live animals

10 **Carnivores** do **not** eat _____ directly.

A plants
B other animals
C insects
D animal meat



Name _____ Class _____ Date _____

1 The following picture represents a(n) _____.

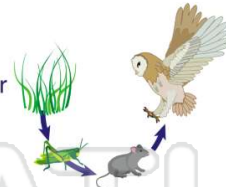
- A metamorphosis
- B food chain
- C energy pyramid
- D life cycle



(B)

2 Which organism in this food chain is **not a consumer**?

- A the owl
- B the grasshopper
- C the grass
- D the mouse



(C)

3 Food chains and food webs show the **flow** of _____ within an ecosystem.

- A energy
- B oxygen



(A)

4 Which organism in this food chain is taking in the **least amount of energy**?

- A the caterpillar
- B the snake
- C the grass



(B)

5



(A)

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(C)

- C consumers
- D producers



- C lack of food
- D surplus of food



9

What does an **herbivore** eat?

- A plants and other animals
- B only dead animals
- C only plants
- D only other live animals



(C)

10

Carnivores do **not** eat _____ directly.

- A plants
- B other animals
- C insects
- D animal meat



(A)



Name _____ Class _____ Date _____

1 Bears eat **plants and other animals**, which makes bears _____.

- A decomposers
- B carnivores
- C herbivores
- D omnivores



2 Which organisms **break down dead animals and waste** allowing nutrients to be returned to the soil?

- A carnivores
- B omnivores
- C decomposers
- D herbivores



3 For **land animals**, all food chains usually **begin** with _____.

- A decomposers
- B plants
- C carnivores
- D omnivores



4 For **ocean animals**, food chains usually **begin** with microorganisms called _____.

- A plankton
- B moss
- C anemones
- D seaweed



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- C carnivores→herbivores→Sun→plants
- D Sun→plants→carnivores→herbivores

D soil

9 When **resources are limited**, competition between animals _____.

- A stays the same
- B decreases
- C does not occur
- D increases



10 Lions often compete for **territory**, which is _____.

- A their personal choice of a mate
- B their personal water supply
- C their personal living space
- D their personal food supply






Name _____ Class _____ Date _____

1 Bears eat **plants and other animals**, which makes bears _____.

A decomposers
B carnivores
C herbivores
D omnivores



(D)

2 Which organisms **break down dead animals and waste** allowing nutrients to be returned to the soil?

A carnivores
B omnivores
C decomposers
D herbivores



(C)

3 For **land animals**, all food chains usually **begin** with _____.

A decomposers
B plants
C carnivores
D omnivores



(B)

4 For **ocean animals**, food chains usually **begin** with microorganisms called _____.

A plankton
B moss
C anemones



(A)

5



(A)

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C carnivores→herbivores→Sun→plants
D Sun→plants→carnivores→herbivores

D soil

9 When **resources are limited**, competition between animals _____.

A stays the same
B decreases
C does not occur
D increases



(D)

10 Lions often compete for **territory**, which is _____.

A their personal choice of a mate
B their personal water supply
C their personal living space
D their personal food supply



(C)



Name _____ Class _____ Date _____

1 Various relationships between organisms may **benefit each member**, may **benefit only one member**, or may **harm one organism** while the other benefits. **Symbiosis** is any of these long-term **relationships** between two or more different organisms.

- A true
- B false



2 In which **symbiotic relationship** between two organisms of different species, is **one organism benefited** while the other organism is **neither harmed nor benefited** in any way?

- A mutualism
- B parasitism
- C commensalism
- D competition



3 Which is an example of **commensalism**?

- A a bird building a nest in a tree
- B a tapeworm in a dog



4 The relationship between two different organisms in which **one organism lives in or on another organism** and **benefits greatly** while **causing harm** to the organism it is living in or on is called _____.

- A mutualism



5



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- C Commensalism
- D Competition



9 The relationship between a **clownfish** and **sea anemone** is an example of _____.

- A a parasite in host
- B parasitism
- C commensalism
- D mutualism



10 Symbiosis between a bee and a flower is an example of **mutualism**. A bee benefits from the flower by getting food in the form of nectar. **How does the flower benefit?**

- A a bee helps the flower with photosynthesis
- B a bee brings water to the flower
- C a bee aids in pollination of the flower
- D a bee brings the flower oxygen

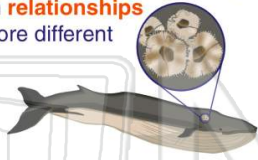




Name _____ Class _____ Date _____

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- A true
- B false



A

2 In which **symbiotic relationship** between two organisms of different species, is **one organism benefited** while the other organism is **neither harmed nor benefited** in any way?

- A mutualism
- B parasitism
- C commensalism
- D competition



C

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- A a bird building a nest in a tree
- B a tapeworm in a dog



A

4 The relationship between two different organisms in which **one organism lives in or on another organism and benefits greatly** while **causing harm** to the organism it is living in or on is called _____.

- A mutualism



B

5



A

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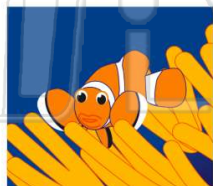
A

- C Commensalism
- D Competition



9 The relationship between a **clownfish** and **sea anemone** is an example of _____.

- A a parasite in host
- B parasitism
- C commensalism
- D mutualism



D

10 Symbiosis between a bee and a flower is an example of **mutualism**. A bee benefits from the flower by getting food in the form of nectar. **How does the flower benefit?**

- A a bee helps the flower with photosynthesis
- B a bee brings water to the flower
- C a bee aids in pollination of the flower
- D a bee brings the flower oxygen



C



Name _____ Class _____ Date _____

Match each of the following terms to its definition:

- | | | | |
|--------------|----------|------------|----------------|
| Carnivore | Energy | Food chain | Ecosystem |
| Commensalism | Consumer | Decomposer | Photosynthesis |

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

3. _____
move

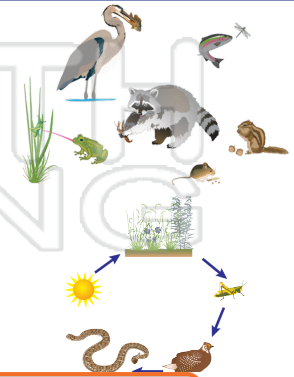
4. _____
bacter
simple

5. _____
anima

6. _____
specie
harmd in any way

7. _____ - an organism that obtains energy by eating or absorbing nutrients found in animal waste and decaying organisms

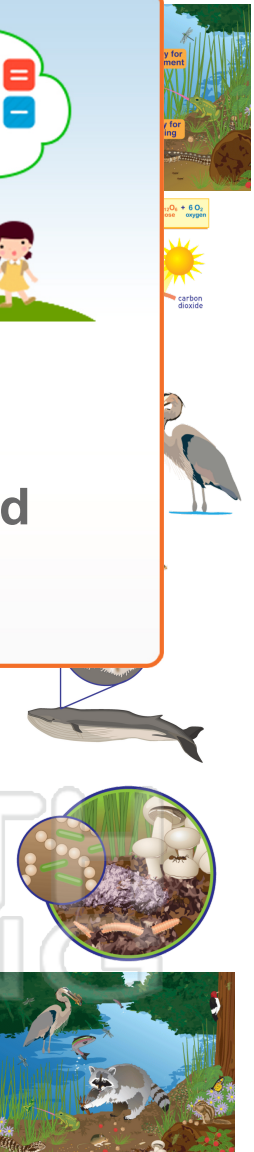
8. _____ - the living and nonliving components of an environment and the way they interact with each other and their environment





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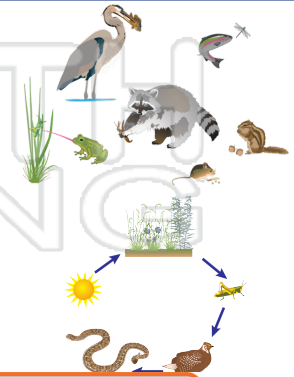
Name _____ Class _____ Date _____

Match each of the following terms to its definition:

- | | | | |
|--------------|----------|------------|----------------|
| Carnivore | Energy | Food chain | Ecosystem |
| Commensalism | Consumer | Decomposer | Photosynthesis |

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



3. ene

4. pho
bacter
simple

5. car

6. con
specie
harmd in any way

7. **decomposer** - an organism that obtains energy by eating or absorbing nutrients found in animal waste and decaying organisms

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

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