

Intermediate Science 7

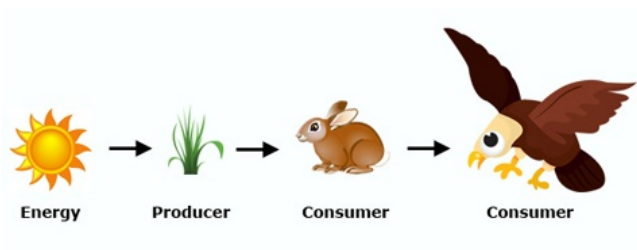
Unit 1: Interactions In An Ecosystem

Topic 5: Food Chain and Food Web



Student Name _____

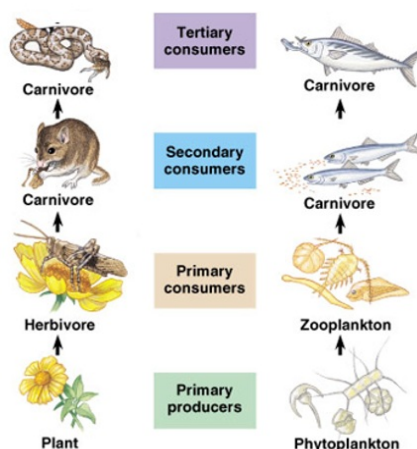
The source of energy for Earth is the sun



It is a one-way flow. Energy enters an ecosystem through the process of photosynthesis carried out by primary producers.

Every organism needs to obtain energy in order to live. For example, plants get energy from the sun, some animals eat plants, and some animals eat other animals.

Food Chain: the movement of food energy and nutrients through an ecosystem from producers to different level of consumers. It begins with the producer that obtains/captures the energy from the sun



Arrows are used to indicate the direction the energy flows in the food chain

Levels In A Food Chain:

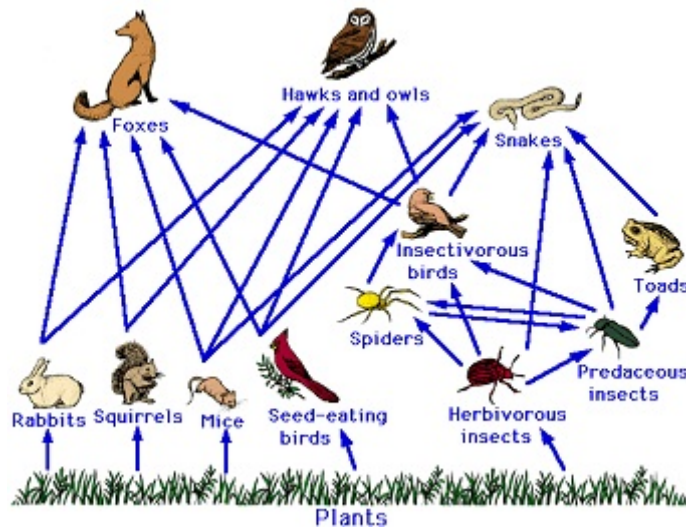
Producers: An organism that can produce its own food from materials in the abiotic environment. They use photosynthesis to produce their own food. Always Starts a food chain

Primary Consumer : An organism that eats only producers. It is a Herbivore

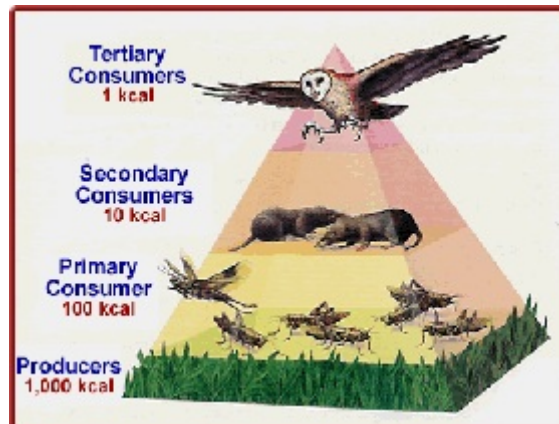
Secondary Consumer : An organism that eats primary consumers or other animals to obtain energy. It is a carnivore

Tertiary Consumers: An organism that eats the secondary consumers. It is a carnivore

Food Web: a series of interconnected food chains, showing many feeding relationships among organisms.



Energy pyramid: shows the amount of energy that moves from one level to another in a food chain.



-The most energy is available at the producer level of the pyramid.

-The availability of energy decreases as it moves up the energy pyramid.

Only about 10 percent of energy is passed on to the next level in the food chain. As a result, food chains have only 5 different levels

PART A: MULTIPLE CHOICE

Instructions: Shade the letter of the correct answer on the computer scorable answer sheet provided

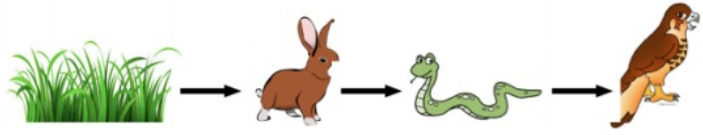
1. Which of these is a correct depiction of a food chain?
 - (A) Mice → cat → rabbit
 - (B) Human → fish → chips
 - (C) Grain → mice → cat
 - (D) Cougar → cat → mice

2. What do arrows in a food chain show?
 - (A) The route of food through the digestive system
 - (B) The route of food to the shops
 - (C) The movement of energy between organisms
 - (D) Heat energy being lost

3. Energy flow in an ecosystem begins with

- (A) Carnivores
- (B) Herbivores
- (C) Omnivores
- (D) Producers

4. What is shown in the diagram below?



- (A) Food
- (B) Food chain
- (C) Food web
- (D) Niche

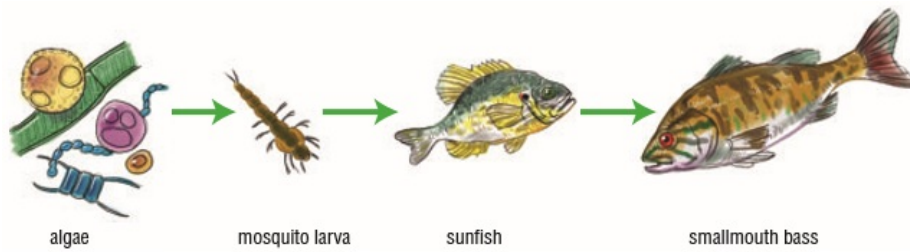
5. Which model correctly shows energy flow in a food chain?

<p>(A)</p> <pre>graph BT; A[plants] --> B[insects]; B --> C[salmon]; C --> D[bears];</pre>	<p>(B)</p> <pre>graph BT; A[insects] --> B[plants]; B --> C[bears]; C --> D[salmon];</pre>
<p>(C)</p> <pre>graph BT; A[bears] --> B[salmon]; B --> C[insects]; C --> D[plants];</pre>	<p>(D)</p> <pre>graph BT; A[salmon] --> B[bears]; B --> C[plants]; C --> D[insects];</pre>

6. Which of the following populations begins the flow of energy through the food web?

- (A) Coyotes
- (B) Insects
- (C) Lizards
- (D) Shrubs

Use the diagram below to answer questions 7 to 10 :



7. Which of the following refers to the algae in the food chain?
 - (A) Primary consumer
 - (B) Producer
 - (C) Secondary consumer
 - (D) Tertiary consumer

8. Which of the following refers to the mosquito larva in the food chain?
 - (A) Primary consumer
 - (B) Producer
 - (C) Secondary consumer
 - (D) Tertiary consumer

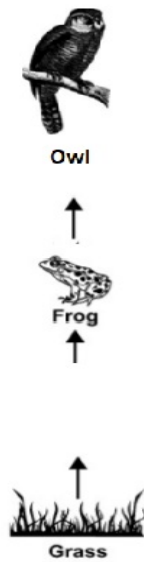
9. Which of the following refers to the smallmouth bass in the food chain?
 - (A) Primary consumer
 - (B) Producer
 - (C) Secondary consumer
 - (D) Tertiary consumer

10. Which of the following refers to the sunfish in the food chain?
 - (A) Primary consumer
 - (B) Producer
 - (C) Secondary consumer
 - (D) Tertiary consumer

11. Primary consumers can also be called
 - (A) Carnivores
 - (B) Herbivores
 - (C) Omnivores
 - (D) Producer

12. Which may be a secondary or tertiary consumer?
 - (A) Carnivores
 - (B) Herbivores
 - (C) Omnivores
 - (D) Producer

13. Which of the following would complete the food chain shown below?



<p>(A)</p> <p>Grasshopper</p>	<p>(B)</p> <p>Deer</p>
<p>(C)</p> <p>Grey Jay</p>	<p>(D)</p> <p>Rabbit</p>

14. Which organism is paired with its role?

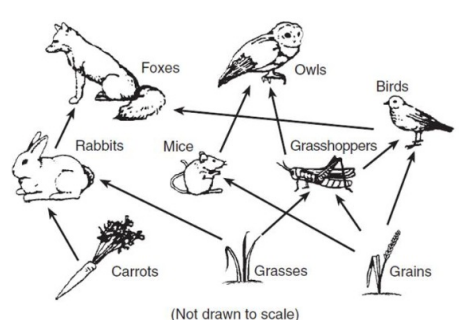
- (A) Black bear - omnivore
- (B) Coyote - herbivore
- (C) Earthworm - tertiary consumer
- (D) Moose - producer

15. If you made a chart showing all of the organisms living in the local lake, with arrows drawn between the various organisms showing who ate what, what kind of chart would you have made?

- (A) Ecosystem chart
- (B) Energy pyramid
- (C) Food chain
- (D) Food web

16. What is represented in the diagram below?

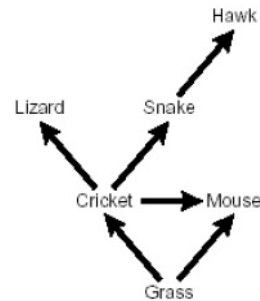
- (A) Food chain
- (B) Food web
- (C) Feeding diagram
- (D) Pyramid of energy



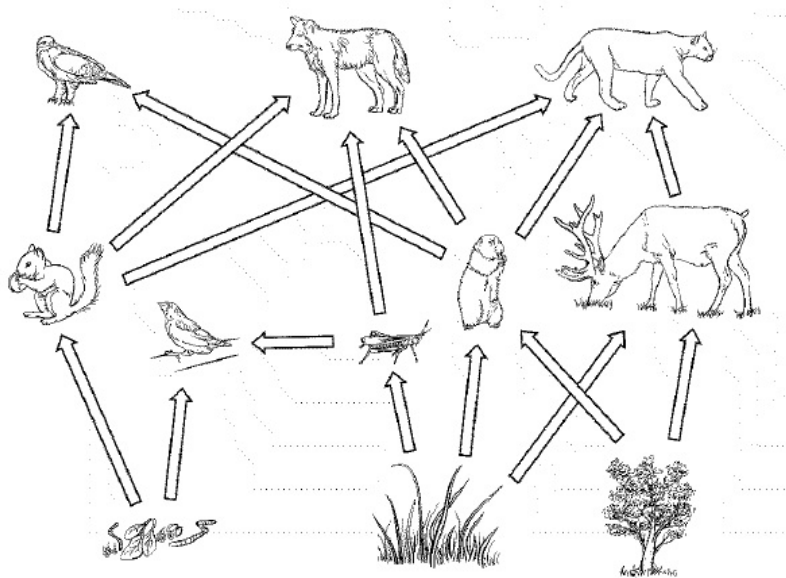
17. Which of the following is true for a food web?
- (A) Is made by a food spider
 - (B) Shows how feeding relationships are interlinked
 - (C) Shows the number of organisms in a habitat
 - (D) Only shows important animals

18. In the figure to the right, which organism in the food chain is a secondary consumer?

- (A) Grass
- (B) Cricket
- (C) Snake
- (D) Hawk



Use the chart below to answer questions 19-21

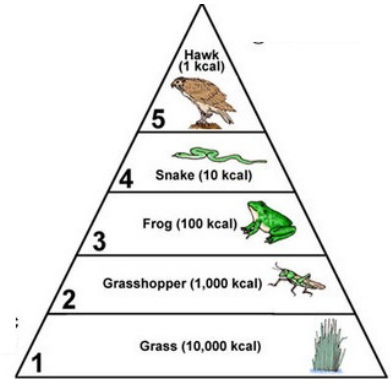


19. Three organisms on the food web have arrows pointing away from them and no arrows pointing toward them. They are
- (A) Herbivores
 - (B) Decomposers
 - (C) Omnivores
 - (D) Producers
20. Four organisms on the food web have arrows pointing toward them but no arrows pointing away from them. This is because
- (A) They make their own food
 - (B) They give energy to others
 - (C) Nothing shown eats them
 - (D) They need no energy
21. The arrows on the food web show that
- (A) Prairie dogs eat grass
 - (B) Deer eat prairie dogs
 - (C) Squirrels eat grass
 - (D) Squirrels eat coyotes

22. What does the arrow between the grasshopper and the coyote represent?
- (A) Energy flowing from producers to consumers
 - (B) Energy flowing from consumers to producers
 - (C) Energy flowing from the coyote to the grasshopper
 - (D) Energy flowing from the grasshopper to the coyote

23. What is represented in the diagram below?

- (A) Food chain
- (B) Food Web
- (C) Feeding diagram
- (D) Pyramid of energy

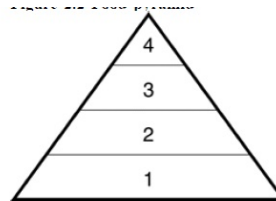


24. Approximately what percentage of the energy in one level is passed on to the next level?

- (A) 1%
- (B) 10%
- (C) 30%
- (D) 60%

25. In the figure below, at which trophic level would tertiary consumers be found?

- (A) 1
- (B) 2
- (C) 3
- (D) 4



26. In a pyramid of energy which would you find at the bottom level?

- (A) Primary consumer
- (B) Producer
- (C) Secondary consumer
- (D) Tertiary consumer

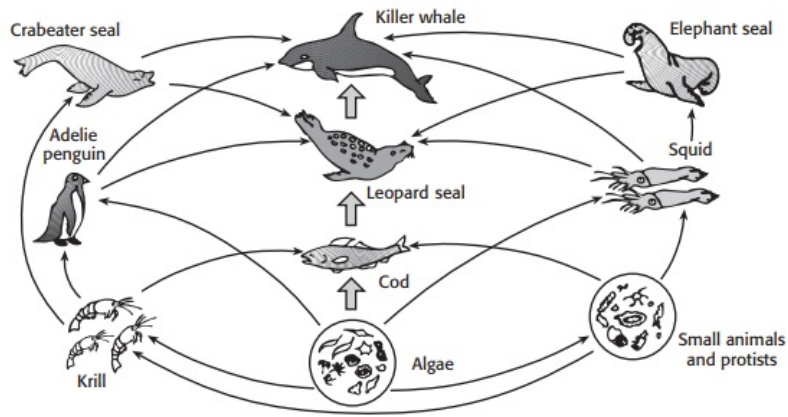
PART B: MATCHING

Fill in the blanks on the left with the terms on the right. Please, place your answers on the scantron

27. ____ Producer	A. The network of feeding relationships among organisms.
28. ____ Food Chain	B. Plants that use energy from the sun to make nutrients they need to survive.
29. ____ Consumer	C. A sequence of feeding relationships among living organisms, as they pass on food energy.
30. ____ Food Web	D. Organisms that eat food made by producers. (Primary Consumer eats plants, Secondary Consumer eats meat)

PART C: WRITTEN RESPONSE

1. Use the figure below, which shows the food web of an aquatic ecosystem, to complete items 1–7



In the food web above, there are eight food chains that include krill. In the space provided, identify all of the organisms in the order in which they occur in four of these eight food chains.

1. Chain 1

2. Chain 2

3. Chain 3

4. Chain 4

5. What organisms do cod eat?

6. List all the organisms that eat squid.

7. How many producers are in the food web? Name them
