

SCIENCE 10 - Worksheet #3

Energy Flow in Ecosystems

Name:

Block:

1. Match the following fill in the blanks

1. Biodegradation	a. ____ refers to the total mass of living plants, animals, fungi, and bacteria in a given area.
2. Biomass	b. The flow of energy from an ecosystem to an organism and from one organism to another is called ____
3. Consumer	c. Plants are called producers because they produce food in the form of carbohydrates during ____
4. Decomposers	d. An insect such as a bee, that feeds on a plant is called a ____
5. Decomposition	e. ____ is the breaking down of organic wastes and dead organisms.
6. Energy Flow	f. ____ are models that show that flow of energy from plant to animal and from animal to animal. Each step is called a ____ level.
7. Food Chains	g. Plants and phytoplankton, such as algae, are at the first trophic level and are referred to as ____
8. Food Pyramids	h. ____ obtain their energy from the primary producers. ____ obtain their energy from eating primary producers.
9. Food Webs	i. In the fourth trophic level are ____ that feed on secondary consumers to obtain energy.
10. Photosynthesis	j. ____ are models of the feeding relationships within an ecosystem. ____ show the loss of energy from one trophic level to the next.
11. Primary Consumers	
12. Primary Producers	
13. Secondary Consumers	
14. Tertiary Consumers	
15. Trophic	

2. What does the term energy flow describe in an ecosystem?

3. Describe each of the following as a producer, consumer, or decomposer (more than one may apply).

- (a) breaks down fallen leaves _____
- (b) does not need to consume other organisms to live _____
- (c) assists with biodegradation _____
- (d) is the first step in energy flow through an ecosystem _____
- (e) may consume another consumer _____

4. Draw a food chain that contains the following five organisms: grass, black bear, earthworm, cougar, rabbit. Label the grass as producer, and label each of the other organisms according to the kind of consumer that they are.

5. Are Herbivores primary consumers? Why or why not?

6. Are carnivores primary consumers? Why or why not?

7. How much energy is lost from producers to secondary consumers?

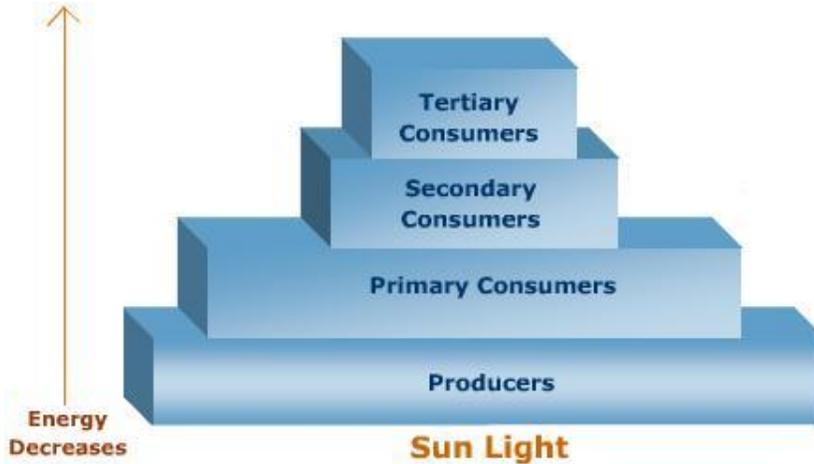
8. What is decomposition?

9. A fox's diet can contain beetles, eggs, berries, fish, and mice. What kind of consumer is a fox?

10. Which is most likely to occupy the second trophic level in a food chain: a potato, a worm that eats the potato, a bird that eats the worm, or a fox that eats the bird?

11. Explain why there cannot be an unlimited number of trophic levels.

12.



- a. What level of the food pyramid stores the least energy? _____
- b. What level of the food pyramid stores the most energy? _____
- c. Where does all of the energy come from? _____

13.

Which of the following statements about biomass is true?

- A. Food webs are used to show the available biomass in an ecosystem.
- B. Biomass is usually expressed in units of metres per gram or kilogram.
- C. Biomass is the total mass of living plants, animals, fungi, and bacteria in a particular area.
- D. The biomass of animals on Earth is over 100 times greater than the biomass of plants.

15.

What is the best reason for why an ecosystem supports fewer organisms at higher trophic levels than at lower trophic levels?

- A. Competition among organisms is more intense at higher trophic levels.
- B. Most of the food energy consumed is used for growth and to increase biomass.
- C. Animals are part of more than one food chain and eat more than one kind of food.
- D. There is a huge decrease in energy from lower trophic levels to higher trophic levels.

14.

A field of wheat is an example of which member of a food chain?

- A. decomposer
- B. biodegrader
- C. consumer
- D. producer

16.

What is the best example of a detritivore from the list below?

- A. earthworm
- B. green algae
- C. grasshopper
- D. spotted frog

17.

Your teacher asks you to design a diagram to show the models of feeding relationships within an ecosystem. Which type of model should you choose?

- A. food web
- B. food chain
- C. food pyramid
- D. ecological pyramid

18.

Which is the best description for the role of the wolf in this food web?

- A. herbivore
- B. omnivore
- C. carnivore
- D. top carnivore

