

Section 2 – Energy Flow

Student Name _____

Class _____

2.1 Consumers/producers – photosynthesis – cellular respiration – scavengers/decomposers

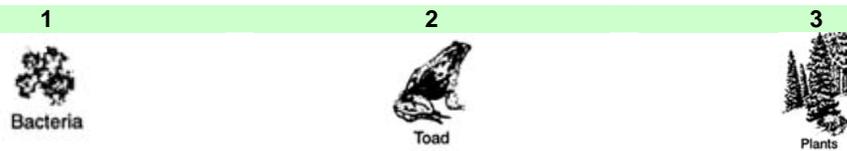
1. What effect would there be on the ecosystem we live in, if **All** biting insects were eliminated?
 - A. Very little effect
 - B. No effect at all
 - C. Catastrophic effect
 - D. A minor inconvenience
2. Organisms in an ecosystem can be classified as **producers** or **consumers**. The producers provide food for the consumers. An organism that consumes both producers and other consumers is called a ...
 - A. herbivore
 - B. omnivore
 - C. carnivore
 - D. prey
3. Organisms that consume only producers are known as ...
 - A. herbivores
 - B. omnivores
 - C. carnivores
 - D. predators
4. Organisms that consume other consumers are known as ...
 - A. herbivores
 - B. omnivores
 - C. carnivores
 - D. producers
5. **Photosynthesis** is the food production process that takes place in this part of the plant ...
 - A. roots
 - B. stem
 - C. flower
 - D. leaves
6. The two things that plants need - as **raw materials** to make food - are ...
 - A. nitrogen and water
 - B. oxygen and carbon dioxide
 - C. water and carbon dioxide
 - D. nitrogen and oxygen
7. Which of the following word equations describes **cellular respiration** ?
 - A. Light energy + carbon dioxide + water → food + oxygen
 - B. Food + oxygen → carbon dioxide + water + energy
 - C. Light energy + oxygen + carbon dioxide → water + food
 - D. Food + carbon dioxide + energy → water + oxygen
8. **Decomposers** – known as the clean-up crew - are the decomposers. Scavengers also get rid of the waste in an ecosystem. **Scavengers** differ from decomposers because they ...
 - A. do not kill organisms for food
 - B. do not eat dead organisms
 - C. break down larger organisms
 - D. only feed on living plants and animals
9. Which of the following decomposers are helpful?
 - A. Baker's yeast and E coli
 - B. Candida albicans and nitrogen-fixing nodules
 - C. E coli and E coli 0157:H7
 - D. Candida albicans and Baker's yeast

2.2 Food chains – energy flow

1. A food chain is a convenient way to show how **this** moves among living things in an ecosystem ...
- A. food
 - B. sugar
 - C. energy
 - D. interaction

2. A **food chain** starts with ...
- A. a small animal
 - B. the consumer
 - C. a primary consumer
 - D. the original food source

3. Identify the **correct order** – showing how energy flows, from beginning to end, in a food chain that includes these organisms:



- A. 1 - 2 - 3
- B. 1 - 3 - 2
- C. 2 - 1 - 3
- D. 3 - 2 - 1

4. Rank the following members of an ecosystem
Carnivores – Herbivores - Producers
in term of their numbers. Highest to lowest

- A. Herbivores - Producers - Carnivores
- B. Herbivores - Carnivores - Producers
- C. Producers - Carnivores - Herbivores
- D. Producers - Herbivores - Carnivores

5. All the organisms included in this - indicate how many of each type of organism is included in the total energy transfer. It is referred to as a

- A. food web
- B. food chain
- C. pyramid of biomass
- D. pyramid of numbers

6. A plant uses most of the energy it gets from the Sun to support it's life functions. The following percentage represents the amount of energy that a plant provides to a consumer, such as a herbivore.

- A. 5 %
- B. 10 %
- C. 15 %
- D. 20 %

7. Who do herbivores depend on to get the energy they need to sustain life?

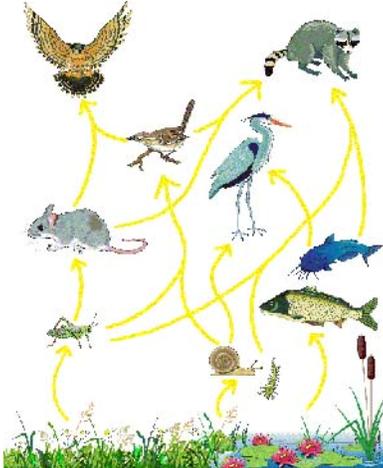
- A. producers
- B. omnivores
- C. carnivores
- D. all of the above

8. What happens to '**waste**' energy in an ecosystem?

- A. It is absorbed by plants
- B. It is absorbed by animals
- C. It is used as recycled energy
- D. It is given off into the atmosphere

2.3 Food webs

- The members of different food webs are interdependent. When changes in these occur in an ecosystem food web, which of the following would affect the members of that food web?
 - Biotic factors only
 - Abiotic factors only
 - Both abiotic and biotic factors**
 - Neither biotic nor abiotic factors
- A food web pyramid visually shows the relationships among the members of a particular food web. Which of the following would you likely see at the very top of the pyramid?
 - herbivores
 - omnivores
 - carnivores**
 - producers
- Food chains and food webs** are models in science, which visually show us the different relationships within an ecosystem. The primary difference between the food chain and the food web is ...
 - a food chain shows how energy is stored
 - a food web shows how energy is used
 - a food web is a complex system of food chains**
 - a food chain is a combination of different food webs
- In a meadow food web, like the one illustrated here:



Which of the following would represent just one of the many food chains?

- Snail → Blue heron → Hawk
 - Plants → Grasshopper → Raccoon**
 - Water plants → Catfish → Mouse
 - Plants → Snail → Raccoon
- In the meadow food web, what would happen to the owl, if a pesticide killed all of the grasshoppers?
 - Nothing, because owls don't eat grasshoppers
 - They would get sick and die
 - All the organisms in the food web will die
 - Their population would likely increase (Their food supply would increase)**
 - The light colored arrows in a food web show how energy and nutrients are passed on to ...
 - decomposers**
 - carnivores
 - herbivores
 - producers

2.4 Cycles (water and carbon)

1. Carbon is an integral part of an ecosystem. It is cycled throughout the ecosystem as it is used and then reused. It is necessary for all life to exist. Carbon is released by plants in the process of ...
 - A. **respiration**
 - B. **photosynthesis**
 - C. **transpiration**
 - D. **deterioration**

2. Petroleum products, which contain carbon, are burned, and the carbon escapes into the atmosphere, as carbon dioxide, BUT, how does it get into the petroleum in the first place?
 - A. **refineries**
 - B. **dead plants**
 - C. **decomposing plankton**
 - D. **photosynthesis in plants**

3. All living things need water to live. The water cycle has four main processes. The two processes that return water to the earth are ...
 - A. **evaporation and condensation**
 - B. **condensation and precipitation**
 - C. **transpiration and condensation**
 - D. **evaporation and transpiration**

4. The two processes that release water back into the atmosphere are ...
 - A. **evaporation and condensation**
 - B. **condensation and precipitation**
 - C. **transpiration and condensation**
 - D. **evaporation and transpiration**

5. The process in which water, goes through a change of state, from a gas to a liquid, is called ...
 - A. **evaporation**
 - B. **transpiration**
 - C. **condensation**
 - D. **precipitation**

6. A Naturalist learns how to preserve and protect the natural environment. They are often referred to as our environmental ...
 - A. **birdwatchers**
 - B. **watchdogs**
 - C. **eager beavers**
 - D. **eyes and ears**

7.  This illustration represents the desalination of water. Salt is removed from the water in this process.

Which cycle on the Earth does this illustration represent?

 - A. **The water cycle**
 - B. **The carbon cycle**
 - C. **The nitrogen cycle**
 - D. **The life cycle of aquatic organisms**

8. Scientific discoveries are endless. One recent discovery was one that determine the shape of a raindrop. A raindrop is shaped like a ...
 - A. **teardrop**
 - B. **diamond**
 - C. **broken heart**
 - D. **hamburger bun**