

Energy Flows

Real World Ecosystems
Learner Worksheet Answer Key
Grade Level: 5-8



To understand their understanding of the concepts presented, the learners should produce answers as follows:

- 1. The major source of energy for living organisms on Earth is:**
The sun/solar energy/radiant energy/sunlight
- 2. Plants are able to convert carbon dioxide from the atmosphere into organic carbon by the process of:** Photosynthesis
- 3. Organisms such as plants, are known as _____ or _____**
Producers or autotrophs
- 4. An animal that relies solely on plant life as a food source is referred to as a:**
Herbivore
- 5. A coyote is considered to be a _____ consumer when it eats a rabbit.**
Secondary
- 6. Organisms such as bacteria and fungi that feed off decaying organisms may be referred to as:**
Decomposers
- 7. For any trophic level, about _____ % of the available energy is transferred, on average to the next trophic level,**
10
- 8. An organism that eats from more than one trophic level is referred to as a/an:**
Omnivore

9. Organisms that belong to level C on the diagram are referred to as:

Carnivores, or secondary consumers

10. Why are there fewer organisms at level A than at level D?

There are fewer organisms at level A than at level D because with each transfer of energy between trophic levels there is a loss of energy. There is less available energy at each level for producing organic tissue

11. Identify all organisms in the food web that could be considered secondary consumers:

Vole, coyote, garter snake, great horned owl, killdeer, hawk.

12. Identify all organisms in the food web that could be considered tertiary consumers:

Mosquito, great horned owl, hawk.

13. From the food web given, identify and sketch a food chain that consist of six steps (trophic levels)

Chain 1: Shrubs, rabbit, coyote, mosquito, killdeer, great horned owl

Chain 2: Shrubs, rabbit, coyote, mosquito, killdeer, hawk

Chain 3: Grass and seeds, rabbit, coyote, mosquito, killdeer, great horned owl

Chain 4: Grass and seeds, rabbit, coyote, mosquito, killdeer, hawk

14. A pesticide is sprayed to get rid of an infestation of grasshoppers within the ecosystem represented by the given food web. Which organisms are affected by this loss of a food source? What might be the result of this?

Individuals affected by the loss of grasshoppers as a food source would be voles, garter snakes, killdeer and any of the organisms that eat them, such as the coyote, great horned owl and hawk. The likely result is a decrease in numbers of coyotes, great horned owls and hawks, as they would have less food and energy available.