

Name: \_\_\_\_\_

Unit 5: ECOSYSTEMS

CLASSWORK: 6.03

**FOCUS:** Energy Roles and Energy Flow in an Ecosystem

**ESSENTIAL QUESTION:** Can you identify and explain the various energy roles that exist within an ecosystem? Can you explain what a food web is and describe how a food web illustrates energy flow within an ecosystem?

Energy Roles

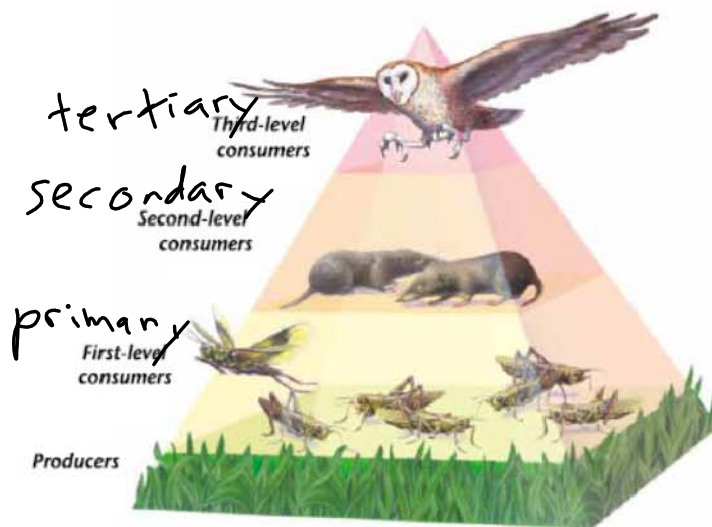
- All organisms within an ecosystem can be classified as either producers or consumers of energy.
- Consumers can be further divided:
  - Herbivores : consume producers (plants)
    - Also called primary consumers
      - e.g.: grasshoppers eating grass
  - Carnivores : consume other consumers (animals)
    - Carnivores that consume herbivores are called secondary consumers.
      - e.g.: mouse eating a grasshopper
    - Carnivores that consume other carnivores are called tertiary consumers.
      - e.g.: snake eating a mouse
    - Carnivores that consume tertiary consumers are called quaternary consumers.
      - e.g.: hawk eating a snake
  - Omnivores : consume both producers (plants) and consumers (animals)
    - e.g.: bear (eat acorns, berries, roots, bulbs, grass, tree buds, insects, fish, rodents, birds' eggs)

Name: \_\_\_\_\_

Unit 5: ECOSYSTEMS

CLASSWORK: 6.03

**An Energy Pyramid**



Energy Flow

- Energy flow within an ecosystem can be represented with an energy pyramid
- Energy flows from the base, where it is produced, toward the peak, where it is being used.
- The ultimate source of energy for the system is the sun, which supplies the energy to fuel nearly all life on Earth.

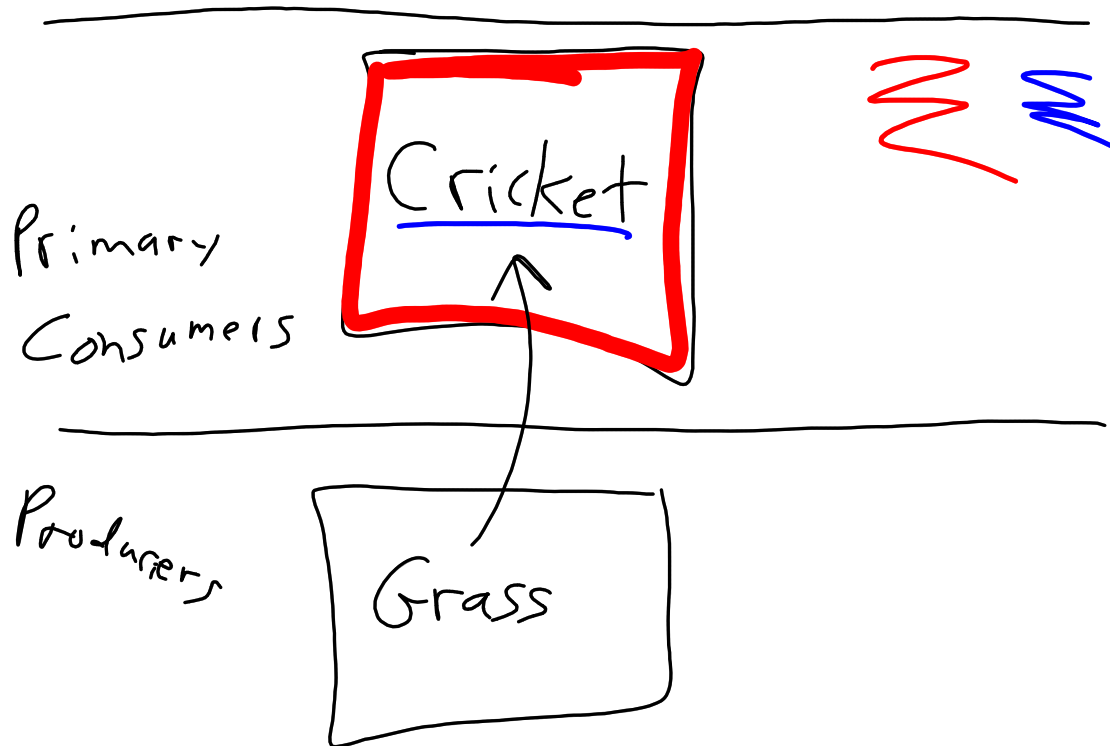
Name: \_\_\_\_\_

Unit 5: ECOSYSTEMS

CLASSWORK: 6.03

**Procedure:**

1. Cut out your food web cards.
2. Work as a team to research the feeding habits of each organism. You may use any textbook resources in the classroom, as well as reliable internet resources.
3. Take notes on the back of each card: *Producer or Consumer? Herbivore, carnivore, or omnivore? What does the organism eat?*
4. Color-code your cards as follows:
  - a. Producers = green outline
  - b. Consumers = orange outline
    - i. Herbivores = blue underline
    - ii. Carnivores = red underline
    - iii. Omnivores = purple underline
5. Create a food web on a separate sheet of large paper with producers on the bottom and consumers moving up by level toward the top.
6. Draw arrows to represent the flow of energy through the ecosystem. Therefore, the arrows should point from the food source to whatever is consuming it, to show the energy flowing from its source to its end point.
7. Glue the cards down once you are 100% pleased with your arrangement.
8. Title your food web with the type of food web it is. (\*Hint: Look at the top of each card)  
Write your names on your work.
9. Draw dividing lines and label your energy levels off to one side:
  - a. *Producers*
  - b. *Primary consumers*
  - c. *Secondary consumers*
  - d. *Tertiary consumers*
  - e. *Quaternary consumers*



Name: \_\_\_\_\_

Unit 5: ECOSYSTEMS

CLASSWORK: 6.03

Terrestrial Food Web <b>Robin</b>	Terrestrial Food Web <b>Earthworm</b>	Terrestrial Food Web <b>Cricket</b>	Terrestrial Food Web <b>Centipede</b>
Terrestrial Food Web <b>Cat</b>	Terrestrial Food Web <b>Hawk</b>	Terrestrial Food Web <b>Frog</b>	Terrestrial Food Web <b>Grasshopper</b>
Terrestrial Food Web <b>Ground Beetle</b>	Terrestrial Food Web <b>Screech Owl</b>	Terrestrial Food Web <b>Box Turtle</b>	Terrestrial Food Web <b>Berries</b>
Terrestrial Food Web <b>Ladybug</b>	Terrestrial Food Web <b>Rabbit</b>	Terrestrial Food Web <b>Mouse</b>	Terrestrial Food Web <b>Raccoon</b>
Terrestrial Food Web <b>Snail</b>	Terrestrial Food Web <b>Squirrel</b>	Terrestrial Food Web <b>Grass</b>	Terrestrial Food Web <b>Oak Tree</b>
Terrestrial Food Web <b>Seeds</b>	Terrestrial Food Web <b>Ant</b>	Terrestrial Food Web <b>Fox</b>	Terrestrial Food Web <b>Toad</b>
Terrestrial Food Web <b>Spider</b>	Terrestrial Food Web <b>Garter Snake</b>	Terrestrial Food Web <b>Praying Mantis</b>	Terrestrial Food Web <b>Black Bear</b>

Name: \_\_\_\_\_

Unit 5: ECOSYSTEMS

CLASSWORK: 6.03

Freshwater Aquatic Food Web <b>Green Algae</b>	Freshwater Aquatic Food Web <b>Phyto-Plankton</b>	Freshwater Aquatic Food Web <b>Mayfly Nymph</b>	Freshwater Aquatic Food Web <b>Freshwater Clams</b>
Freshwater Aquatic Food Web <b>Tadpole</b>	Freshwater Aquatic Food Web <b>Crayfish</b>	Freshwater Aquatic Food Web <b>Snail</b>	Freshwater Aquatic Food Web <b>Duck</b>
Freshwater Aquatic Food Web <b>Mosquito Larvae</b>	Freshwater Aquatic Food Web <b>Zooplankton</b>	Freshwater Aquatic Food Web <b>Lake Trout</b>	Freshwater Aquatic Food Web <b>Snapping Turtle</b>
Freshwater Aquatic Food Web <b>Smelt</b>	Freshwater Aquatic Food Web <b>Eagle</b>	Freshwater Aquatic Food Web <b>Alewife</b>	Freshwater Aquatic Food Web <b>Sculpin</b>
Freshwater Aquatic Food Web <b>Pike</b>	Freshwater Aquatic Food Web <b>Sunfish</b>	Freshwater Aquatic Food Web <b>Bluegill</b>	Freshwater Aquatic Food Web <b>Cyanobacteria</b>
Freshwater Aquatic Food Web <b>River otter</b>	Freshwater Aquatic Food Web <b>American mink</b>	Freshwater Aquatic Food Web <b>Herring Gull</b>	Freshwater Aquatic Food Web <b>Water Penny Larvae</b>
Freshwater Aquatic Food Web <b>Diatom</b>	Freshwater Aquatic Food Web <b>Midge</b>	Freshwater Aquatic Food Web <b>Loon</b>	Freshwater Aquatic Food Web <b>Killifish</b>

Name: \_\_\_\_\_

Unit 5: ECOSYSTEMS

CLASSWORK: 6.03

Marine Aquatic Food Web <b>Phytoplankton</b>	Marine Aquatic Food Web <b>Cyanobacteria</b>	Marine Aquatic Food Web <b>Krill</b>	Marine Aquatic Food Web <b>Copepods</b>
Marine Aquatic Food Web <b>Lantern Fish</b>	Marine Aquatic Food Web <b>Ocean Sunfish</b>	Marine Aquatic Food Web <b>Mackerel</b>	Marine Aquatic Food Web <b>Killer shark</b>
Marine Aquatic Food Web <b>Tuna</b>	Marine Aquatic Food Web <b>Lancet fish</b>	Marine Aquatic Food Web <b>Marlin</b>	Marine Aquatic Food Web <b>Squid</b>
Marine Aquatic Food Web <b>Crab</b>	Marine Aquatic Food Web <b>Coral</b>	Marine Aquatic Food Web <b>Sponge</b>	Marine Aquatic Food Web <b>Sea bass</b>
Marine Aquatic Food Web <b>Humpback Whale</b>	Marine Aquatic Food Web <b>Atlantic Salmon</b>	Marine Aquatic Food Web <b>Herring</b>	Marine Aquatic Food Web <b>Shrimp</b>
Marine Aquatic Food Web <b>Jellyfish</b>	Marine Aquatic Food Web <b>Sea star</b>	Marine Aquatic Food Web <b>Anemone</b>	Marine Aquatic Food Web <b>Mussel</b>
Marine Aquatic Food Web <b>Giant Kelp</b>	Marine Aquatic Food Web <b>Sea Urchin</b>	Marine Aquatic Food Web <b>Sea Otter</b>	Marine Aquatic Food Web <b>Sea turtle</b>