Essential Question

How does energy move from one organism to the next in a community?

Producers, Consumers, and Food Webs

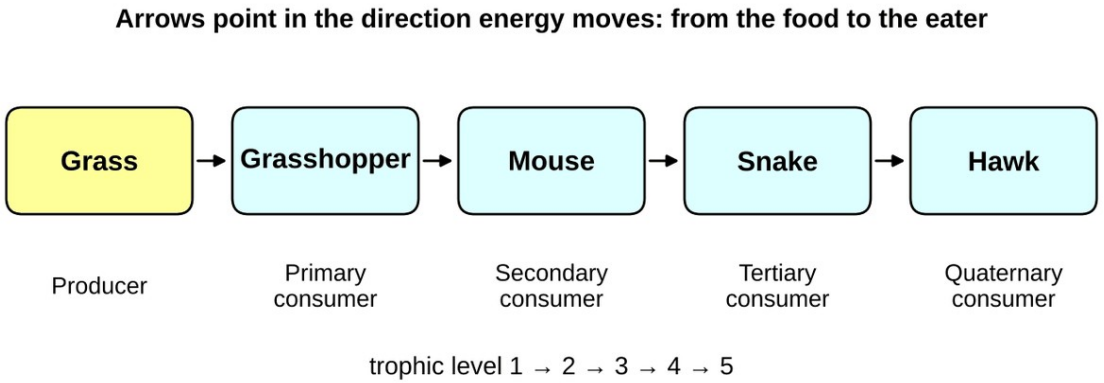
Producers and Consumers

- Producers (autotrophs) make their own food
- Consumers (heterotrophs) eat other organisms
- Decomposers break down dead matter

Group	How it gets energy	Examples
Producer	Makes its own food, usually by photosynthesis	Grass, algae, oak trees
Herbivore	Eats only producers	Rabbits, grasshoppers, deer
Carnivore	Eats only other consumers	Snakes, hawks, sharks
Omnivore	Eats producers and consumers	Bears, raccoons, humans
Decomposer	Breaks down dead matter and wastes	Bacteria, fungi

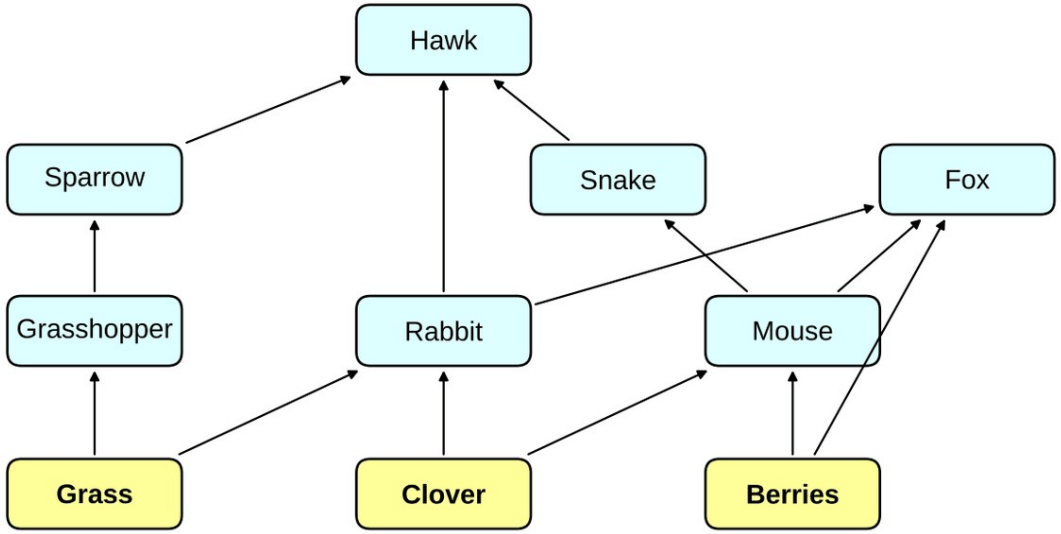
Food Chains and Trophic Levels

- A food chain shows one path of energy
- Arrows point from food to eater
- Each feeding step is a trophic level



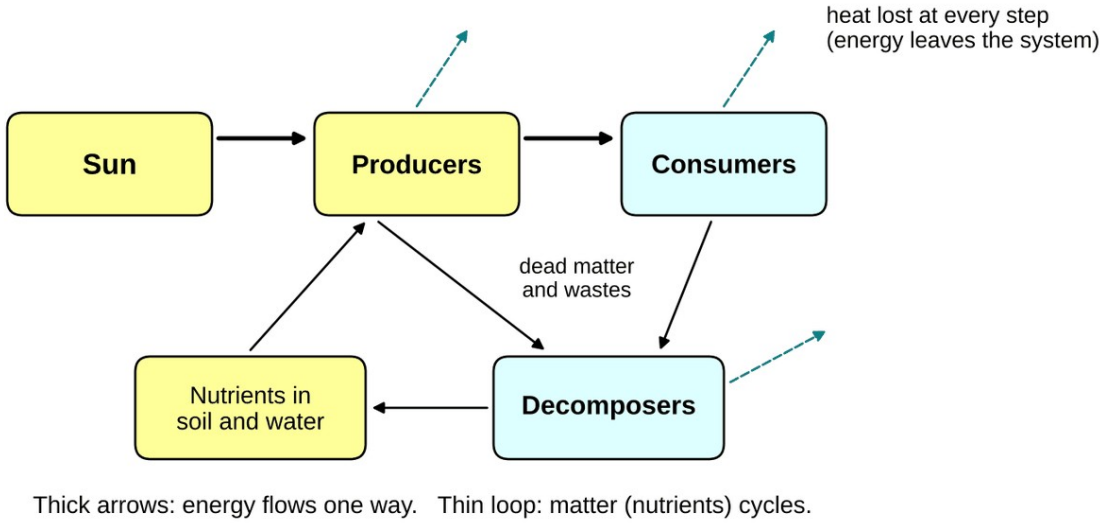
Food Webs

- A food web links many food chains
- Most consumers eat more than one food
- An organism can feed at more than one level



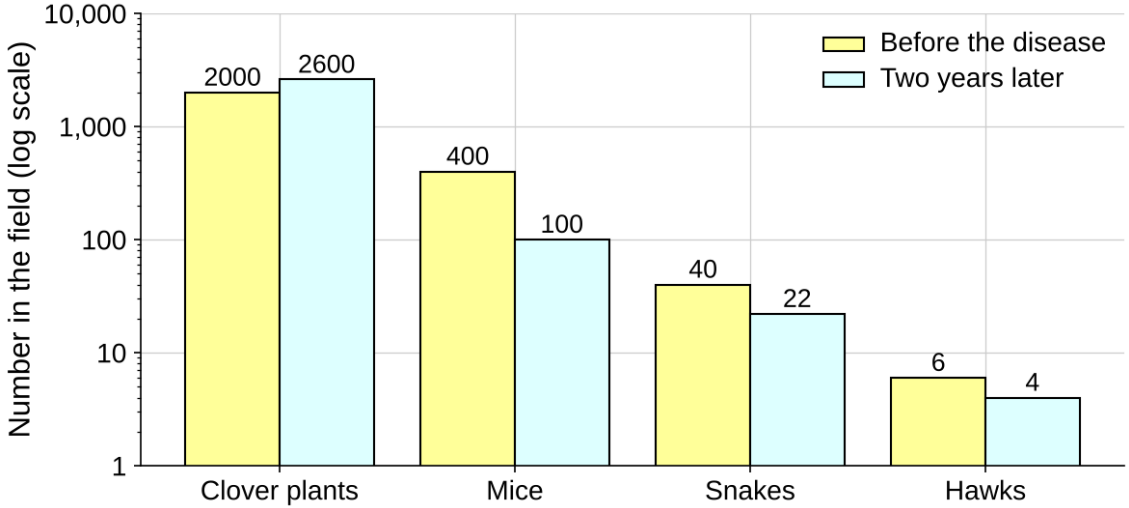
Energy Flows, Matter Cycles

- Energy enters as sunlight and leaves as heat
- Energy flows one way through a food web
- Decomposers return nutrients to the soil
- Matter is recycled again and again



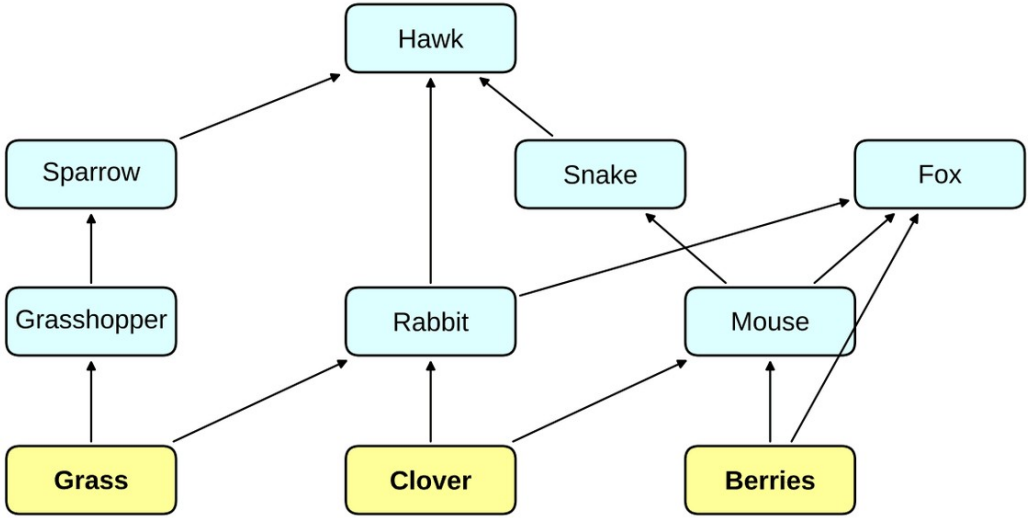
Changes Ripple Through a Food Web

- Change one population and others change too
- What it eats may increase
- What eats it loses food and may decrease



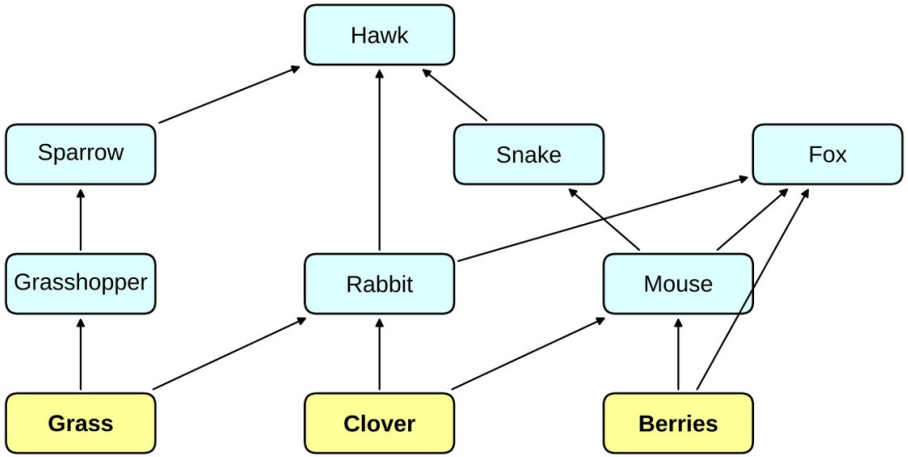
Example: Reading a Food Web

Use the meadow food web. (a) Name the producers. (b) Write a food chain with four organisms that ends with the hawk. (c) What trophic level is the snake?



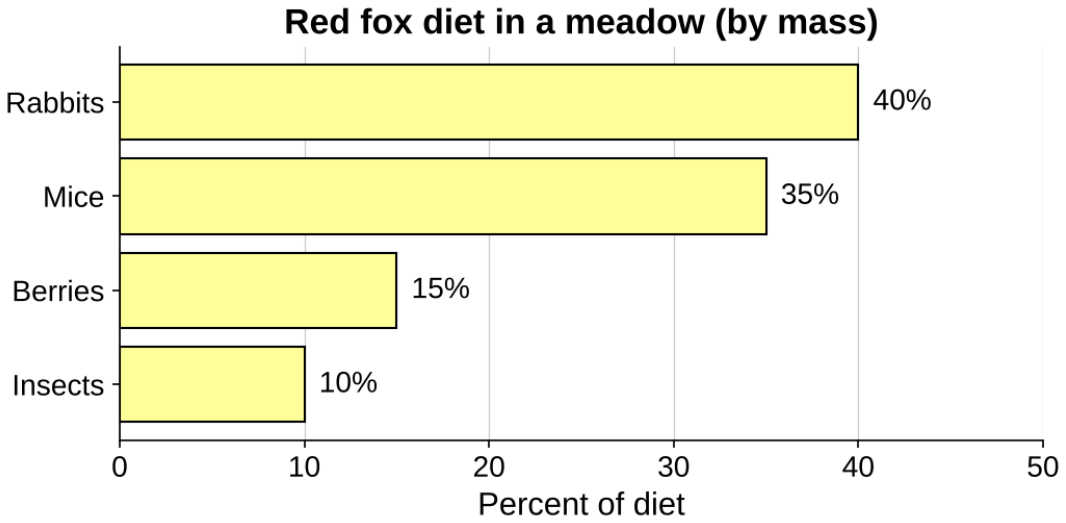
Example: Predicting a Change

Use the meadow food web. Suppose a disease kills most of the rabbits. Predict how the grass, the fox, and the hawk populations will change, and explain each prediction.



Example: What Does a Fox Eat?

Scientists studied what red foxes eat in a meadow. Is the fox a herbivore, carnivore, or omnivore? What percent of its diet comes from animals? On which trophic levels does it feed?



Producers, Consumers, and Food Webs

Big Ideas

- Producers make food; consumers eat; decomposers recycle
- Arrows point from food to eater
- Food webs link many food chains
- Energy flows one way; matter cycles
- A change in one population affects the web