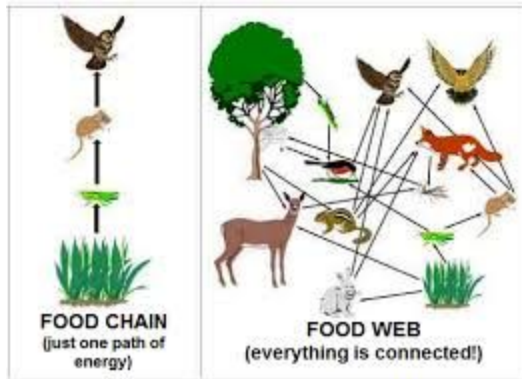


6th Grade Science Key Concepts

Ecosystems 6.L.2

6.L.2.1 Food webs and food chains

- Plants use energy from light to make sugar (**glucose**) from carbon dioxide. This is known as **photosynthesis**.
- Plants (**producers**) can use the food they make immediately or they can store the food.
- Green plants can make food for themselves directly (**photosynthesis**) or indirectly for **consumers**
- **Energy flows through the ecosystem** from the **Sun → Producers → Consumers**.
- **Decomposers** gather their energy from producers and consumers, often after death occurs. They return nutrients to the environment.



- **Fungi** are a type of decomposer. Besides breaking down dead plants and animal matter, fungi can also break down pollution in the soil.
- **Bacteria** can also serve as decomposers. Nitrogen-fixing bacteria help move nitrogen through the ecosystem.
- Water, carbon dioxide, nitrogen and oxygen **cycled** between living and nonliving environments.

6.L.2.2 How plants respond to external stimuli

- Environmental conditions can affect the survival of individual organisms.
- **Dormancy** is a period of inactivity where mature seeds remains **dormant** (slows down, stops) until conditions are favorable for **germination** or growth.
- **Germination** is the development of plant from a seed or a spore.

Plants have the ability to grow, reproduce, shift the position of their roots or leaves in response to environmental conditions such as gravity, sunlight, temperature and day length

Tropism is a plant turning or bending movement toward or away from heat, light and gravity.

- **Positive tropism** - plant grows **TOWARDS** the stimuli. For example, a stem grows to the light
- **Negative tropism** - plant grows **AWAY** from the stimuli. For example, roots grow away from the light

6th Grade Science Key Concepts

Ecosystems 6.L.2



6.L.2.3 Biomes and abiotic factors that impact them

- Earth contains a wide variety of physical conditions resulting in a wide variety of environments such as: **aquatic (marine, freshwater) and terrestrial (forest, desert, mountain, tundra, grassland, taiga).**

Biome Summary Chart

Biome	Location	Climate	Soil	Plants	Animals
Desert	midlatitudes	generally very hot days, cool nights; precipitation less than 10 inches a year	poor in animal and plant decay products but often rich in minerals	none to cacti, yuccas, bunch grasses, shrubs, and a few trees	rodents, snakes, lizards, tortoises, insects, and some birds. The Sahara in Africa is home to camels, gazelles, antelopes, small foxes, snakes, lizards, and gerbils
Tundra	high northern latitudes	very cold, harsh, and long winters; short and cool summers; 10-25 centimeters (4-10 inches) of precipitation a year	nutrient-poor, permafrost layer a few inches down	grasses, wildflowers, mosses, small shrubs	musk oxen, migrating caribou, arctic foxes, weasels, snowshoe hares, owls, hawks, various rodents, occasional polar bears
Grassland	midlatitudes, interiors of continents	cool in winter, hot in summer; 25-75 centimeters of precipitation a year	rich topsoil	mostly grasses and small shrubs, some trees near sources of water	american grasslands include prairie dogs, foxes, small mammals, snakes, insects, various birds. African grasslands include elephants, lions, zebras, giraffes.
Deciduous Forest	midlatitudes	relatively mild summers and cold winters, 76-127 centimeters (30-50 inches) of precipitation a year	rich topsoil over clay	hardwoods such as oaks, beeches, hickories, maples	wolves, deer, bears, and a wide variety of small mammals, birds, amphibians, reptiles, and insects.
Taiga	mid- to high latitudes	very cold winters, cool summers; about 50 centimeters (20 inches) of precipitation a year	acidic, mineral-poor, decayed pine and spruce needles on surface	mostly spruce, fir, and other evergreens	rodents, snowshoe hares, lynx, sables, ermine, caribou, bears, wolves, birds in summer

- Growth and survival of organisms depends on the physical conditions of the environment and if the organism can adapt to those changes.
- To survive, organisms must be able to withstand abiotic and biotic changes in their environment
- **A limiting factor** is any biotic or abiotic factor that restricts the existence, number, reproduction, or distribution of organisms
 - Can be **abiotic** (non-living) such as water, light, temperature, atmosphere and soil
 - Can be **biotic** (living or once living) such as species, populations, communities