Organisms interact with and are affected by living and non-living factors in their environment. This system is called an ecosystem.

- Between species interactions may be predatory (ex: animals hunt for their prey), competitive (ex: different animals search for the same food sources), or mutually beneficial (ex: animals help pollinate plants).
- Organisms interact with one another in complex hierarchies of consumer levels (ex: producers, consumers, & decomposers) which can be represented by food chains and webs.
- Organisms of the same species compete for resources.
- Some animals form groups which can increase chances of survival for individuals and their relatives.
- Organisms mate with other organisms of the same species to produce fertile offspring (sexual reproduction).
- An organism’s growth is controlled by genetic and environmental factors (ex: food intake, space, and interactions with other organisms). However, each species has a typical adult body size.
- Populations are groups of the same species that are living together (ex: sea urchins in Goleta).
- Populations have complex interactions.
- Organisms of different species compete for resources.
- Ecosystems are dynamic and ever changing.

Ecosystems

- Organisms interact with and are affected by abiotic (non-living) factors (ex: sunlight, temperature, soil type, wind, water currents, etc.).
- Organisms interact with and are affected by biotic (living) factors (plants, animals, fungi, bacteria, algae, etc.).
- Consumers obtain energy and nutrients (matter) from eating other organisms.
- Most producers convert the energy from the sun into energy stored in food using air and water (photosynthesis). Some organisms use energy from chemicals instead (ex: chemosynthesis).
- At each level in the food web, some matter is broken down, some is stored, and much is released to the surrounding environment as heat.
- Organisms in an ecosystem interact with one another in complex hierarchies of consumer levels (ex: producers, consumers, & decomposers) which can be represented by food chains and webs.
- Communities are groups of many different species living together (ex: tide pool organisms in Goleta).
- Communities have complex interactions.
- Organisms of different species compete for resources.
- An organism’s growth is controlled by genetic and environmental factors (ex: food intake, space, and interactions with other organisms). However, each species has a typical adult body size.
- MS-LS1-5
- MS-LS1-1
- MS-LS1-3
- MS-LS1-4
- MS-LS1-2

Most producers convert the energy from the sun into energy stored in food using air and water (photosynthesis). Some organisms use energy from chemicals instead (ex: chemosynthesis).

- Decomposers break down dead organisms to recycle nutrients (matter) back into the environment.

- Populations are groups of the same species that are living together (ex: sea urchins in Goleta).
- Populations have complex interactions.
- Organisms of the same species compete for resources.
- Ecosystems are dynamic and ever changing.

Ecosystems

- Organisms, especially humans, can impact and change the ecosystem (ex: deforestation, pollution, etc.) can change the ecosystem.
- Natural events (ex: volcanoes erupting, tectonic plate movement, etc.) can change the ecosystem.
- When the environment changes, extinction, speciation, migration, or shifts in populations may occur.
- Ecosystems with more biodiversity are more resilient to these environmental changes.