- One species relies on another for its habitat

Ecosystems

- An *ecosystem* is formed by interactions between an abiotic environment and biological communities within it
- The term *abiotic* refers to components of the environment that are non-living
  - Ex: water, air, rocks, pH, temperature, light levels, humidity, nutrients
- Photosynthetic organisms are able to produce food by using carbon dioxide, water and sunlight
  - They start the food chain

Nutrient cycling

- Organisms need minerals
- Ecosystems must recycle the carbon, nitrogen and other elements and compounds necessary for life to exist
- Energy can both enter and exit the ecosystem

Decomposers

- An effective way to unlock nutrients stored in the cells of plants and animals is trough decay
- Decomposers (saprotrophs and detritivores) break down the body parts of dead organisms
  - Their digestive enzymes convert the organic matter into a more usable form making it available for the autotrophs
- Ex: soil bacteria can convert proteins into ammonia and ammonia into nitrates. Plants can absorb the nitrates turning them back into proteins
- They play an important role in the formation of soil

Sustainability of ecosystems

- In an ecosystem, all organisms are needed in order to reach sustainability
  - Producers + carbon dioxide ⇒ energy rich sugars ⇒ complex carbohydrates
  - Consumers + producers ⇒ amino acids + sugars
  - Decomposers + dead consumers ⇒ minerals
- The scientific term for the "circle of life" is *nutrient cycling*
- Nitrogen is important to organisms, as it's needed in nucleotides and amino acids