*This is the **Foundation Combined** version — Higher Tier and Separate-only content removed.*

Organisms in a community interact with each other and with their abiotic environment. They are adapted to survive in their particular habitat.

- Abiotic factors: non-living physical/chemical conditions — temperature, light intensity, moisture level, soil pH, wind speed, CO■ and O■ concentrations, salinity.
- Biotic factors: living components affecting organisms — food availability, predators, competitors, disease, pathogens, mutualistic partners.
- Predator-prey cycle: prey increases → predators increase (more food) → prey decreases → predators decrease → prey recovers → repeats.
- Adaptations can be structural (physical features), behavioural (actions) or physiological (internal processes).
- Examples: polar bear has thick fur (structural), migrates seasonally (behavioural), has fat layer for insulation (physiological).
- Extremophiles: organisms adapted to extreme environments — e.g. bacteria near deep-sea hydrothermal vents (high temp, pressure, no light).
- Competition: organisms compete for the same limited resources. In any habitat, the most successful competitors dominate.

Key Terms

Abiotic factor	Non-living physical/chemical factor affecting organisms — e.g. temperature, light, pH
Biotic factor	Living factor affecting organisms — e.g. predation, competition, disease
Adaptation	An inherited characteristic improving an organism's chance of survival and reproduction in its environment

■ **Exam Tip:** When describing an adaptation, always link the structural/physiological feature to the survival advantage it provides. E.g. "The cactus has a thick waxy cuticle (structural adaptation) which reduces water loss by evaporation in the hot desert (survival advantage)."