

# **Abiotic and Biotic Factors**

- Biotic Factors: the effect of other living organism of the same or other species.
- Abiotic Factors: the effect of non-living items of the organism's habitat.

# Stop and think!

Can you name 3  
biotic and 3 abiotic  
factors?

# Environmental Factors Affecting Living Organisms

- **Biotic Factors:** the effect of other living organism of the same or other species.
- **Abiotic Factors:** the effect of non-living items of the organism's habitat.
- **Climatic Factors:** the effect of the average weather conditions over time, e.g., temperature, rainfall, day length, humidity, wind, atmospheric pressure.
- **Edaphic Factors:** the effect of soil conditions e.g. pH, aeration, porosity, water content, mineral nutrients, humus, soil type.
- **Aquatic Factors:** e.g. wave action, tides, submergence time, exposure time, salinity, oxygen concentration, currents, sedimentation and light quality.

**Predation is the hunting and killing of one animal by another for food.**

- Examples: fox killing rabbits; ladybird killing aphids.

### **Ecological Benefit of Predation**

- Maintains the prey species at a sustainable level.
- Predation is a major factor in the evolution of the prey species.

### **Predator Adaptations, e.g., fox.**

- Reddish fur: camouflage to avoid detection by rabbits.
- Long canine teeth: to kill the prey and tear flesh from it when feeding.
- Great speed: to outrun the prey to capture it.

### **Prey Adaptations, e.g., rabbit.**

- Rests underground: predator avoidance.
- Long ears: good hearing to detect the predator.
- White tail: conspicuous warning signal to other rabbits.

# **Predation**

# Competition

Competition is the rivalry between individuals of the same or different species for the same resources.

- Plant Example: grass and daisies compete for light, space, water.
- Animal Example: fox and hedgehog compete for food e.g. earthworms.

## Competitive Adaptations

- Yellow petals of buttercup flower: to win the battle for insect pollinators.
- Antibiotics secreted by soil bacterial to inhibit their competitors for nutrients.

## Ecological Benefit of Competition

- Controls and limits the size of the competitive species.
- Maintains a species at a sustainable level.
- Competition is a major factor in the evolution.
- Important factor in maintaining the 'balance of nature' in the community.