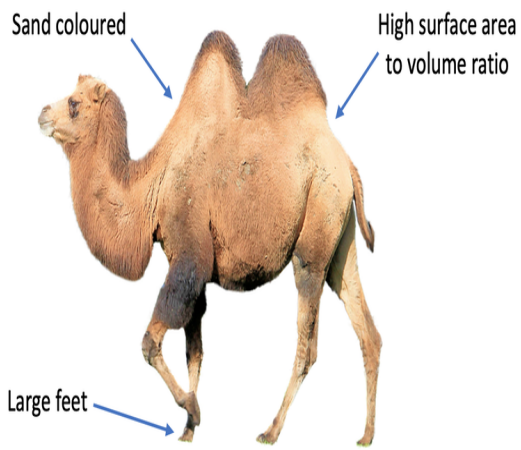
Adaptations

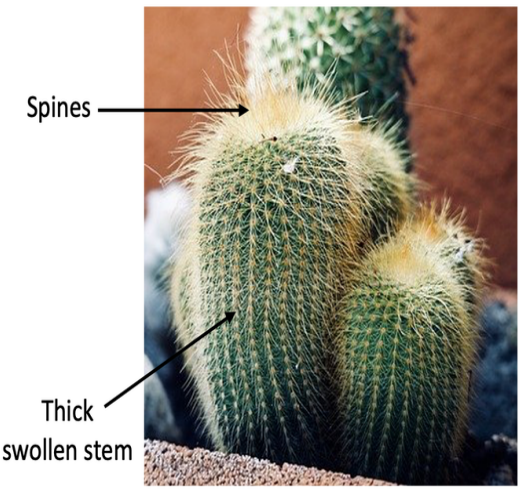
- **Organisms** have features that make them more likely to **survive** in certain **environments**, these are called **adaptations**.
- They occur as a result of **evolution** and can be

1. **Structural adaptation**
2. **Behavioural adaptation**
3. **Functional adaptation**

1. Structural adaptations:

- They are **physical features** of an organism's body. Animals may be coloured in a way that enables them to **camouflage** in the environment, making it easier to hide from **predators** or stalk their **prey**.
- Animals that live in **cold** places, like seals, artic foxes and whales, have a thick layer of fat called **blubber** and a small **surface area to volume ratio** that helps them **retain heat.**
- Animals that live in **hot** places, like camels, often have a thin layer of fat and a **large surface area to volume ratio** to increase **heat loss**.
- Plants also have structural adaptations. The structural adaptations for plants depends on the environment that the plants live in. Cacti live in very hot and dry conditions. Cacti have swollen stems to store lots of water. They also have spines rather than leaves to reduce the amount of water that is lost through transpiration.





2. Behavioural adaptations:

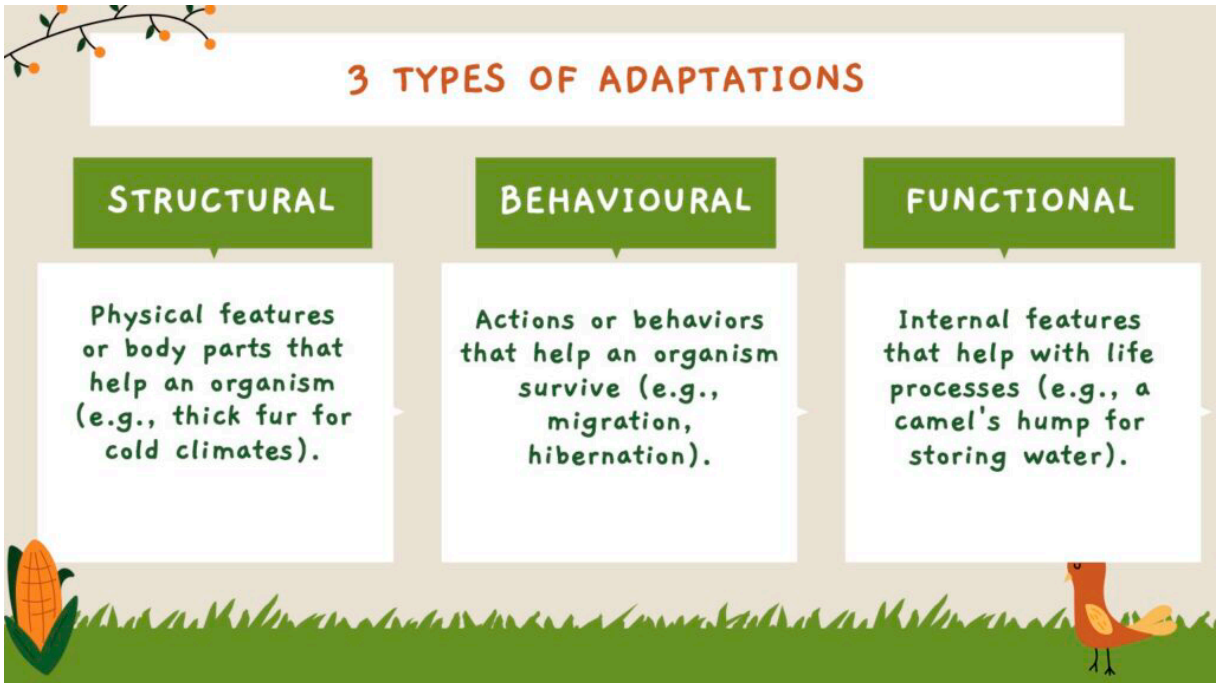
- **They** are those that cause an organism to **act in** a certain way. Many animals **migrate** to warmer places in the winter to avoid **cold conditions** in which they may struggle to **survive**.

3. Functional adaptations:

- **It** affect the **processes** that occur inside an animals body.
- Many **predators** produce **venom** to help kill their **prey** and **defend** themselves.
- Desert animals **conserve water** by **sweating** very little and producing small amounts of **concentrated urine**.
- Some animals like brown bears **hibernate** over winter to conserve their **energy** for spring, when they will need it to **hunt** for food.

Extreme Adaptations

- Some organisms live in **environments** that are very **extreme**, such as at very high or low temperatures, pressures, or high salt concentration.
- Organisms that can live in extreme environments are called **extremophiles.**
- An example of habitats where **extremophiles** are found are **deep-sea volcanic vents**, where the conditions are extremely **hot**, under high **pressure** and there is no sunlight.
- Bacteria called **chemoautotrophs** survive by using inorganic **chemicals** to obtain energy (rather than using sunlight in photosynthesis as photo autotrophs do).
- Other species can then use the bacteria as a source of nutrition – the bacteria are **producers** in these food chains


3 TYPES OF ADAPTATIONS
STRUCTURAL
Physical features or body parts that help an organism (e.g., thick fur for cold climates).
BEHAVIOURAL
Actions or behaviors that help an organism survive (e.g., migration, hibernation).
FUNCTIONAL
Internal features that help with life processes (e.g., a camel's hump for storing water).