

# Extreme Environments

# Animal Adaptations



# What Is Adaptation?



Adaptation is the process of change by which a species becomes better suited to its environment.

# Why Must Animals Adapt?

Animals adapt when their natural habitat changes.

In Canada, winters can bring extreme changes in weather. In order to survive through the cold winters, animal species must adapt.



# Environmental Conditions

Environments are different across the globe which means animals need to adapt to their surroundings.

## Rainforest

Hot and humid.

A lot of predators.

A lot of leaves.

Competition for sunlight, water, food and nutrients.

## Desert

Hot and dry.

Competition for water.

Windy and sandstorms.

Long distances between food and water supplies.

Burning hot during the day and freezing at night.

## Mountain

Very cold temperatures for most of the year.

Reduced oxygen at higher altitudes.

Food can be difficult to catch.

The rugged ground can be very uneven and cold to walk on.

Very few nutrients in the vegetation.

## Polar

Temperatures rarely go above freezing.

A lot of the prey lives in the ocean.

Very bright sunlight reflecting off the snow.

The icy ground can be very slippery.

Strong glare from the snow and ice.

# Adaptations of a Camel

Three rows of eyelashes.

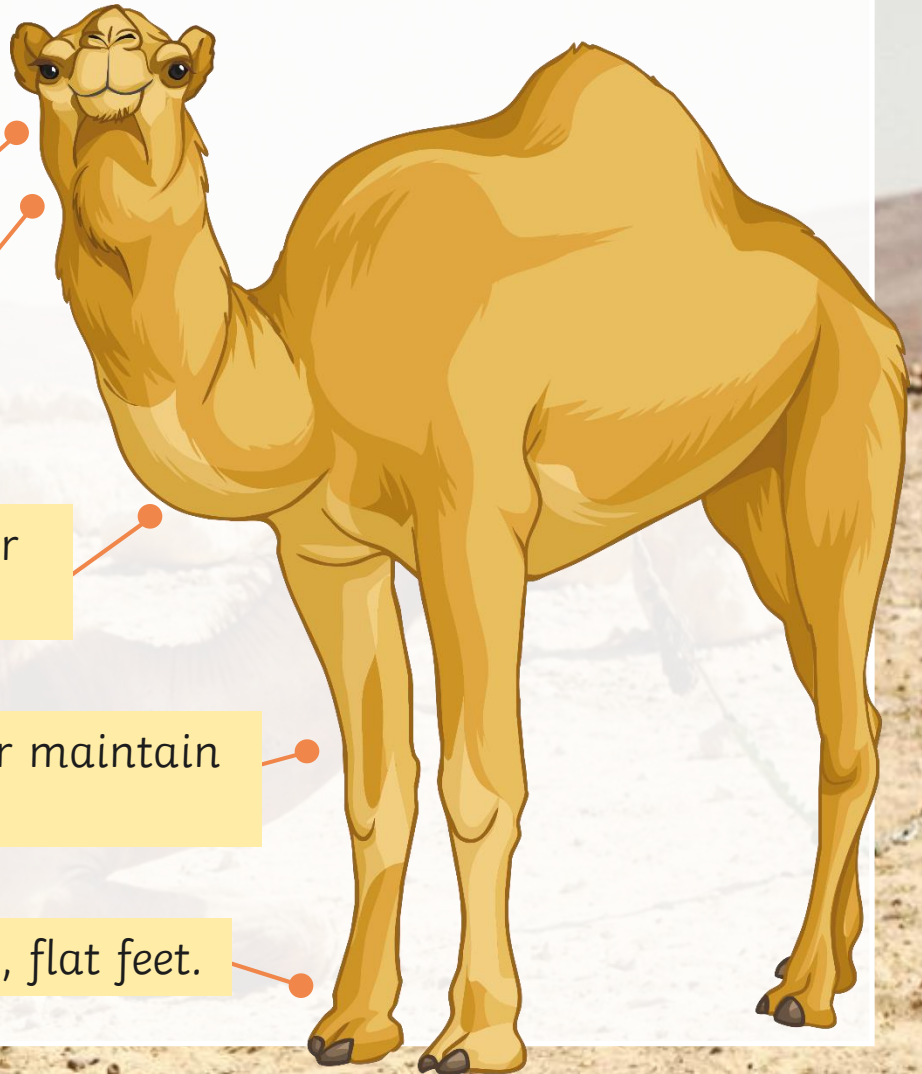
Thin, slot-like nostrils.

Can consume up to 46 litres of water in one sitting.

Thick fur on the top of their bodies; thin fur elsewhere.

Can run up to 40mph in a sprint, or maintain 25mph for up to an hour.

Large, flat feet.



# Adaptations of a Snow Leopard

Small pupils (eyes).

Enlarged nasal cavity.

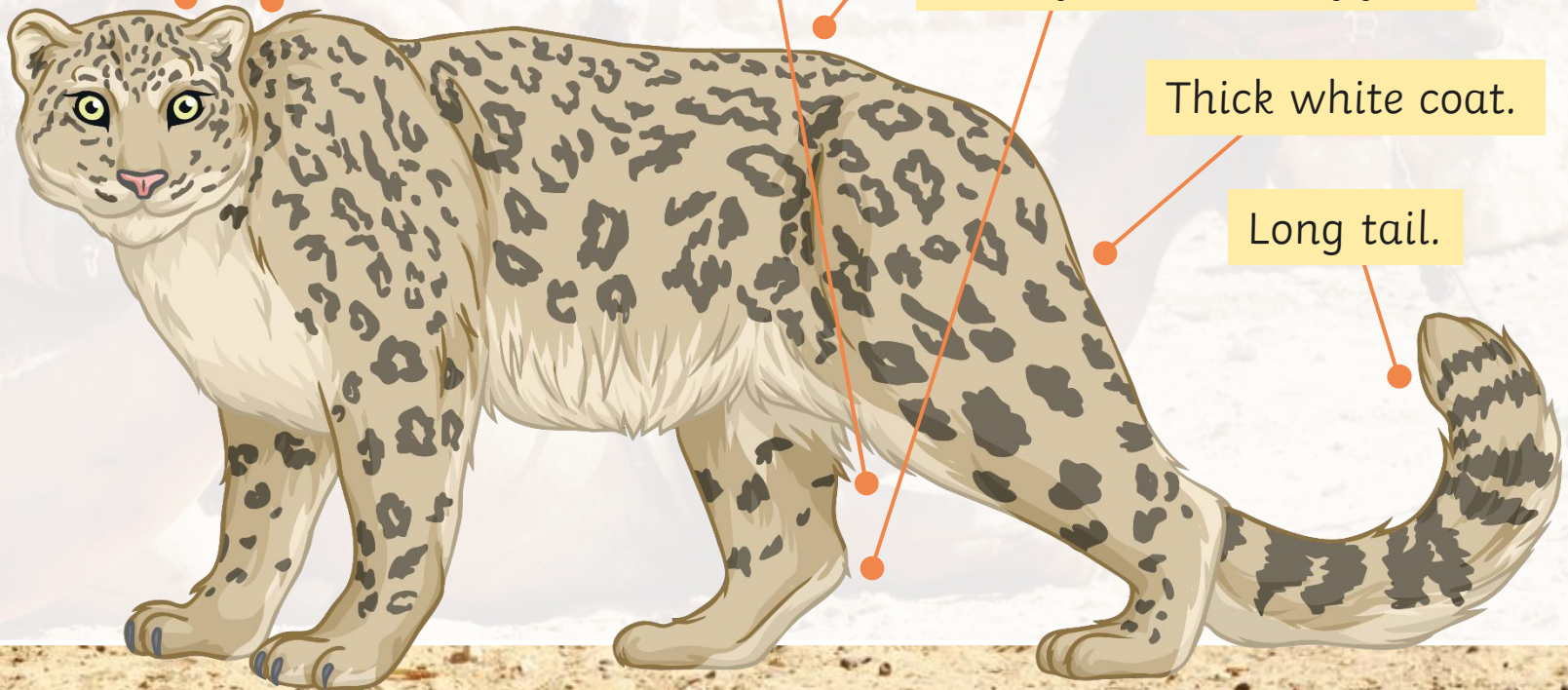
Shortened body parts – limb and ears.

Ability to eat an animal three times its size.

Thick fur on soles of feet.

Thick white coat.

Long tail.



# Adaptations of a Spider Monkey

Quick movements and ability to work as a team.

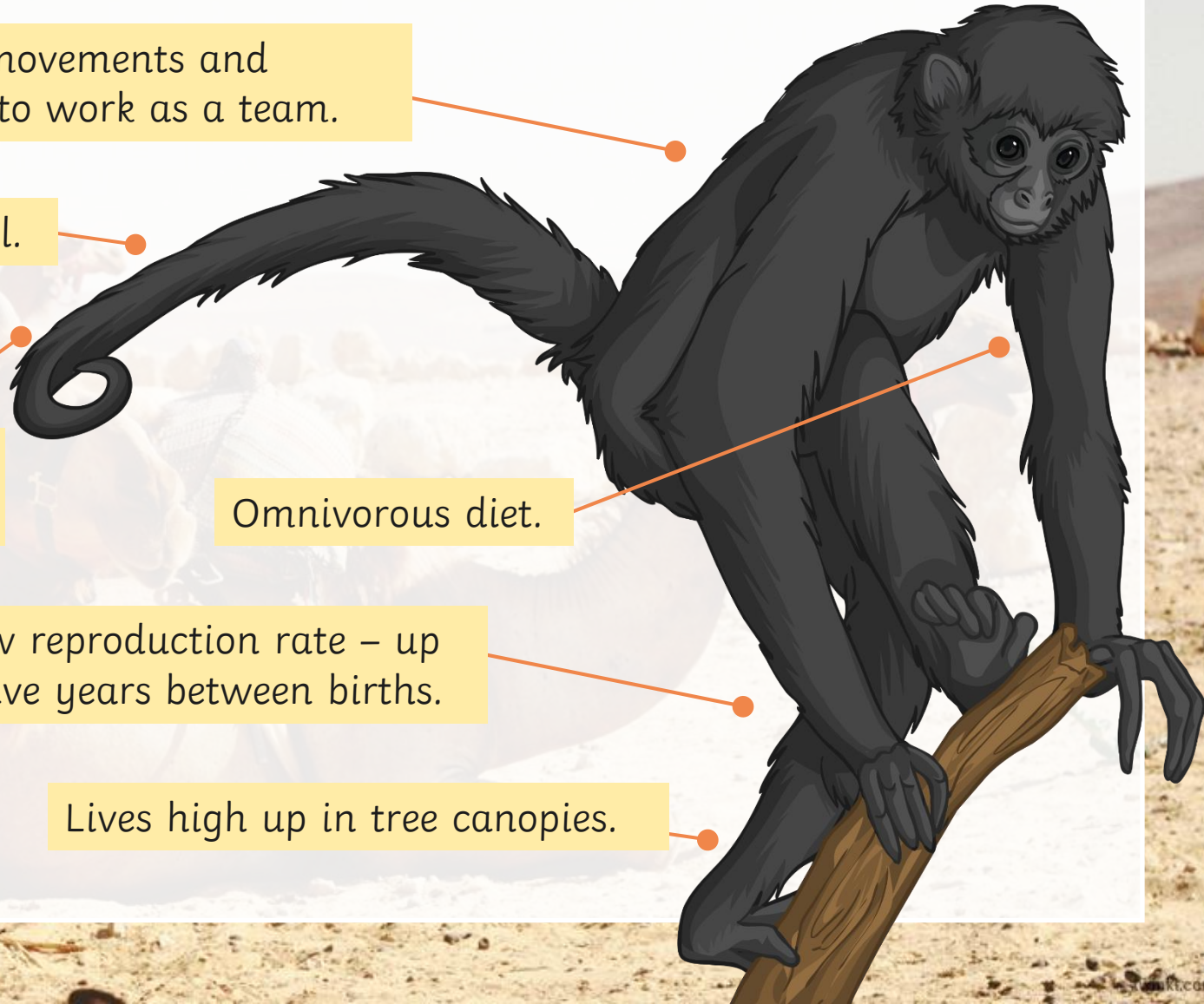
Long, strong tail.

Brown, grey or red fur.

Omnivorous diet.

Slow reproduction rate – up to five years between births.

Lives high up in tree canopies.



# Adaptations of a Polar Bear

They have developed into strong swimmers.

Hollow and transparent fur.

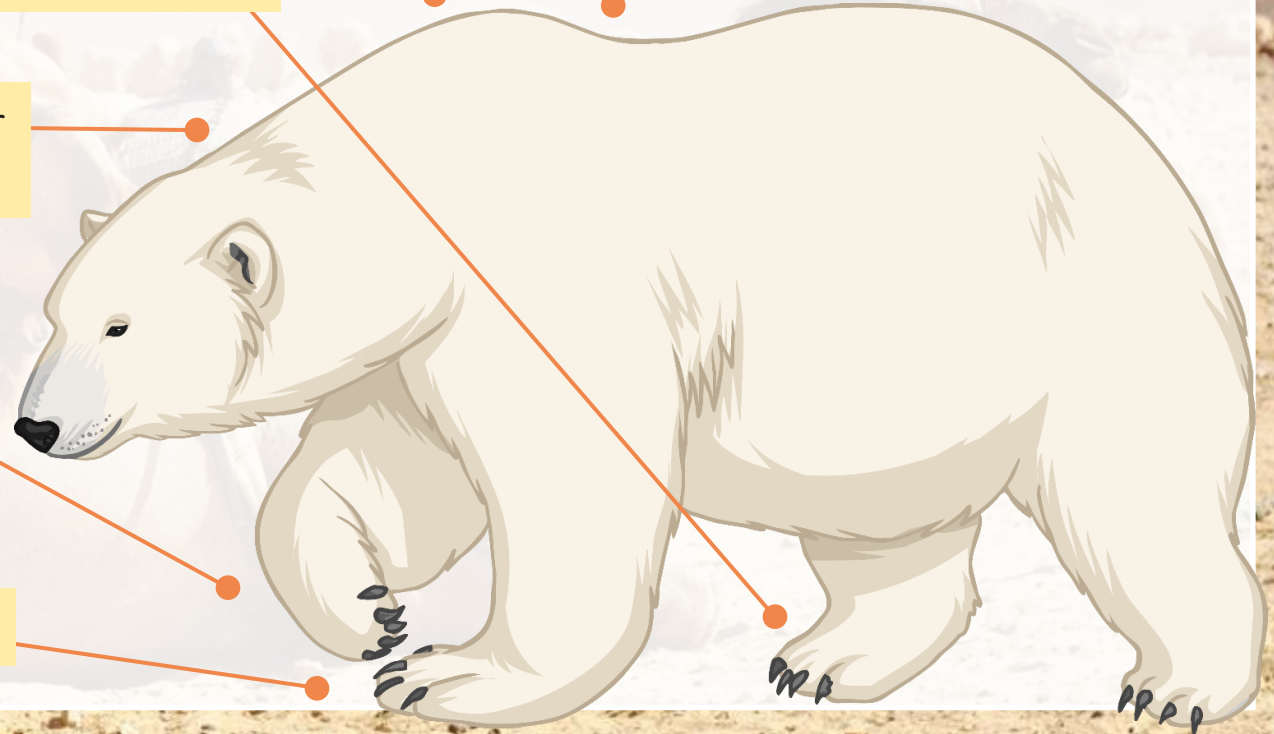
Their skin beneath their fur is black.

Long, thick, curved claws.

Thick layers of fur and body fat.

Small bumps on their footpads, called papillae.

Large paws.





# Camel Adaptations

| Adaptation  | What's the Point?  |
|---|--|
| Can run up to 40mph in a sprint, or maintain 25mph for up to an hour. | To travel quickly across the desert over long distances and to allow air to circulate underneath their stomachs to cool them down. |
| Can consume up to 46 litres of water in one sitting.                  | Water is scarce and this allows them to hydrate and replenish stored water quickly.  |
| Three rows of eyelashes.  | Protection from sandstorms/strong winds.   |
| Large, flat feet.   | Spreads weight on soft sand.   |
| Thick fur on the top of their bodies; thin fur elsewhere.             | Thick fur provides shade, thin fur aids heat loss.   |
| Thin, slot-like nostrils.   | Prevents sand from entering the body and damaging breathing.   |



# Snow Leopard Adaptations

| Adaptation                            | What's the Point?   |
|---------------------------------------|---|
| Thick white coat.                     | To keep warm and blend in with surroundings – excellent for hiding from prey. |
| Thick fur on soles of feet.           | Aids walking on cold ground.  |
| Enlarged nasal cavity.                | Helps breathing in high altitude.   |
| Long tail.                            | Stores fat and can be coiled for warmth.                                      |
| Shortened body parts – limb and ears. | Reduce potential for heat loss.   |
| Small pupils (eyes).                  | Reduce glare in bright conditions.  |



# Spider Monkey Adaptations

| Adaptation  | What's the Point?  |
|---|--|
| Omnivorous diet.  | Food is never in short supply – from birds' eggs to fruit.                                     |
| Long, strong tail.  | Acts as an extra limb and allows them to hang and swing in trees easily.                       |
| Brown, grey or red fur.                                   | To blend in with surrounding trees and avoid predators.  |
| Slow reproduction rate – up to five years between births. | This allows them to focus on their babies while they are young, protecting and educating them. |
| Lives high up in tree canopies.                           | To avoid predators. This is also where the most nutritious leaves can be found.                |
| Quick movements and ability to work as a team.            | To evade attackers.  |



# Polar Bear Adaptations

| Adaptation                                      | What's the Point?  |
|---|--|
| Hollow and transparent fur.                     | To reflect light and camouflage them. This is why their fur looks white in the snow. |
| Small bumps on their footpads, called papillae. | To help them grip to icy surfaces.   |
| Long, thick, curved claws.                      | To help them to kill and eat their prey.   |
| Large paws.                                     | To distribute their weight evenly. This is very important when walking on ice!       |
| Their skin beneath their fur is black.          | To help them absorb heat.  |
| Thick layers of fur and body fat.               | Also to help them keep warm.   |





twinkl