



#### Activity 4

**COMMON NAME** Polar Bear

**SCIENTIFIC NAME** *Ursus maritimus*

**TYPE:** Mammals

**DIET:** Carnivores

**SIZE:** 7,25 to 8 ft

**WEIGHT:** 900 to 1600 lbs

#### Cold Climate Adaptations

Polar bears live in the Arctic circumpolar zone.

They have a very thick **fur** to prevent heat loss. It is usually white, but when they eat many **seals**, the seal's oil accumulates in their fur making it look yellow.

To keep them warm, polar bears have black skin over a thick **layer** of fat that can measure up to 11.4 centimeters (4.49 inches).

This is a very good insulation, so that their body temperature doesn't change, even when temperatures reach -37° C; a polar bear's body temperature, 37° C, is **average** for mammals.

In the water, they rely more on their fat layer to keep warm; wet fur is a poor insulator. This is why mother bears don't want to swim with young **cubs** in the spring: the cubs just don't have enough fat.

Their ears are small and round, and their tails short and compact, to conserve the most heat possible.

Polar bear **paws** measure up to 30 centimeters (11.81 inches) across, to help polar bears walk on thin ice; their lower surface is designed **to prevent** the bears from **slipping**. And when bears are swimming, their paws act like large **paddles**.

#### Key vocabulary

average

cub

fur

layer

paddle

paw

to prevent

seal

to slip

#### Measurement units

1 lb (pound) = 0,454 kg

1 ft (foot) = 0,3 m

#### Activity 4

**COMMON NAME:** Fennec Fox

**SCIENTIFIC NAME:** *Vulpes zerda*

**TYPE:** Mammals

**DIET:** Omnivores

**SIZE:** Head and body, 9.5 to 16 in; tail 7 to 12.2 in

**WEIGHT:** 2.2 to 3.3 lbs

The fennec fox is the smallest of all the world's foxes, but it's got very large ears: they measure 6 inches.

#### **Desert Adaptations**

Fennec foxes live in the **sandy** Sahara and elsewhere in North Africa. To survive in the heat of the desert environment, they have nocturnal habits, and some physical adaptations.

Their big triangular ears **release** body heat and help keep the foxes cool.

They have long, thick hair that insulates them during cold nights (their tail also helps) and protects them from hot sun during the day.

Even the fox's paws are hairy: it protects them from extremely hot sand. The fox's paws are also effective **shovels** for frequent **digging** (fennec foxes live in underground **dens**).

#### **Diet and Behavior**

Fennec foxes eat plants but also rodents, eggs, reptiles, and insects. Like most desert animals, the fennec fox has developed the ability to go for long periods without water. These foxes are cream-coloured with black-**tipped** tails. They are very pretty and nice, so some people keep them home as pets; local peoples also hunt the fennec fox for its fur.

#### **Key vocabulary:**

#### **Measurement units**

den

1 lb (pound) = 0,454 kg

to dig

1 in (inch) = 2,54 cm

fur

to release

sandy

shovel

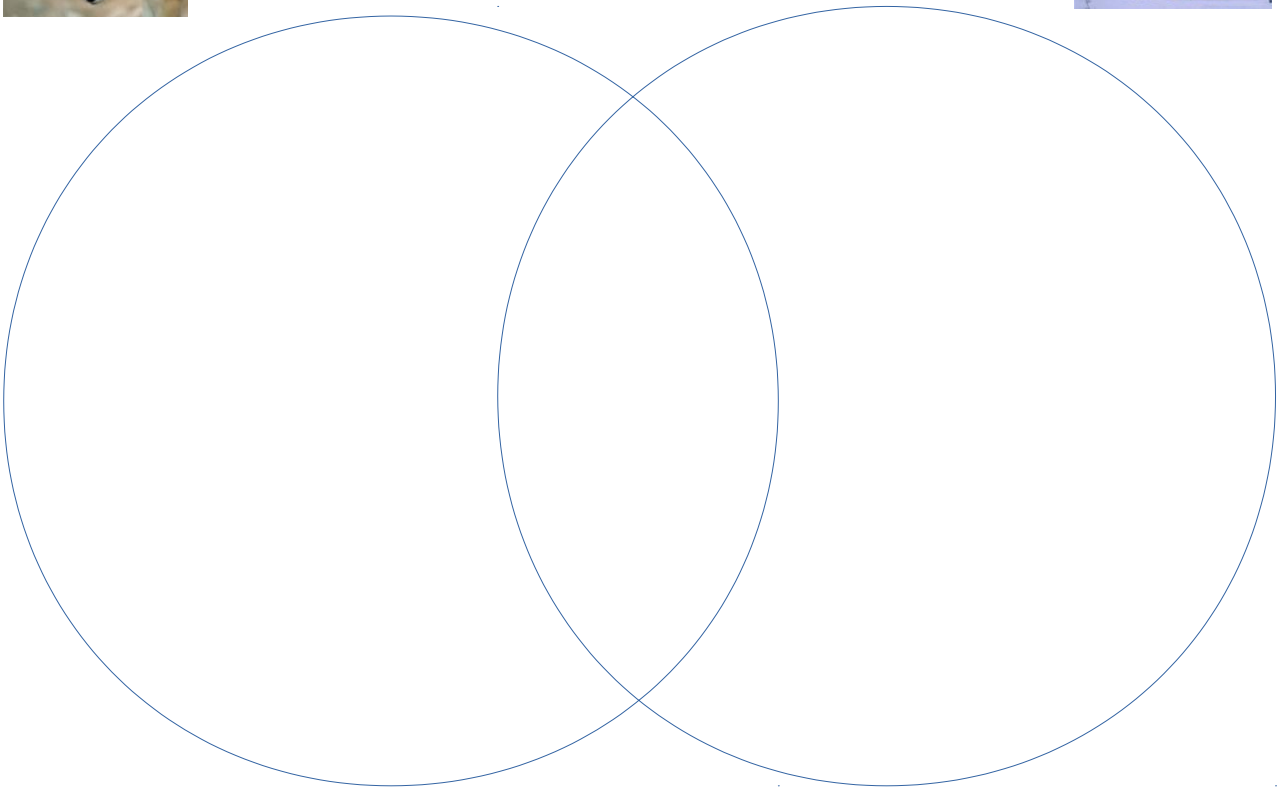
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Activity 5

## FENNEC FOX vs. POLAR BEAR

**Write in the Venn diagram fennec's and polar bear's features about:**

Vertebrates' class, thermoregulation (warm- or cold-blooded?) diet, colour, tail (long or short?), ears (big or little?), general shape (slim or strong?), size (huge or tiny?) skin covering, distribution area, climate.



Now, can you retell with your own words what **analogies and differences** exist between polar bear's and fennec's **adaptation to climate**?

**Write a short outline** for each one in your exercise book (*You can start this way: "Polar bears and fennec foxes have some things in common:..... And some differences:....."*)

Author: Mariagiulia Sottoriva



Activity 8

**LET'S COMPARE OTHER MORE ANIMALS!**

Scientific name	Common name	Max length	Max weight	Distribution area	Climate
<i>Vulpes zerda</i>					
<i>Vulpes vulpes</i>					
<i>Ailuropoda melanoleuca</i>					
<i>Ursus arctos</i>					
<i>Ursus maritimus</i>					
<i>Spheniscus magellanicus</i>					
<i>Aptenodytes forsteri</i>					
<i>Eudyptula minor</i>					

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L= edge	St = surface area	V= volume	St/V
1			
2			
3			
4			
5			
6			
7			

Table 1

Activity 10 b

Shape	St=surface area	V= volume	St/V
A			
B			
C			
D			
E			
F			

Table 2

A	B	C
D	E	F

Table 2: drawings

Activity 10 b