

# Congratulations!

Now you have completed the inheritance and evolution trail, consider how the differences you have discovered may have affected the survival of these animals in the wild by answering these two questions;

1. How might the differences in the shape and size of each species' horns have helped these animals to survive in the wild?

2. How might having horns have increased the threats faced by these animals in the wild?

## Did you know?

True horns are made of bone covered in keratin (hair) and grow throughout the life of an animal. If these horns are damaged or broken then they do not grow back, unlike deer antlers which are shed and regrown each year.

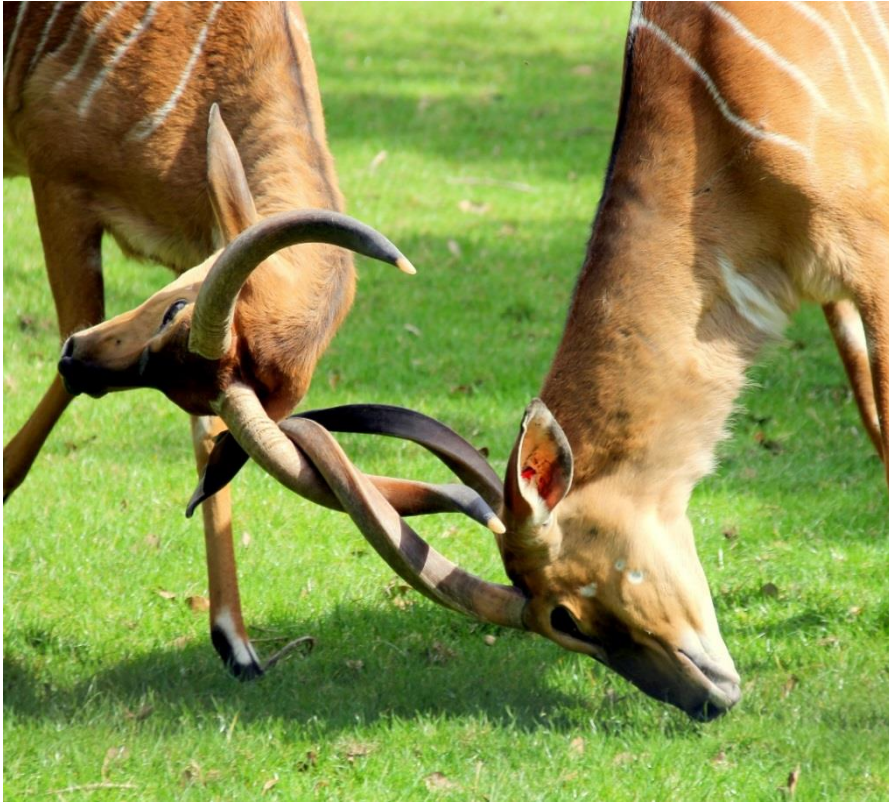
## Inheritance and Evolution Trail



Use the information around the park to help you complete our inheritance and evolution trail learning all about the evolution of horns as you go.

# Introduction

It is believed that the wide variety of bovids (goats, sheep, cattle, buffalo, bison and antelope) we see today are all descended from one ancient ancestor with short, straight horns. Using horns to defend territories against others and to fight off predators has led to the evolution of a huge range of horn shapes and sizes over time, in response to where and how each species live in the wild.



Mountain bongo



Scimitar-horned oryx



Arabian oryx



Addax



Dorcas gazelle



Lowland anoa

Status	Habitat	Diet

Can you match the different shaped horns to each of the different species found around the park and identify where they are best suited to survive in the wild?

# Inheritance and survival

## Did you know?

Differences in size, diet and behaviour allow these largely similar animals to co-exist with minimal competition between species. These variations are the result of a 20 million year evolutionary history which has allowed them to spread across four continents where they occupy many different habitats, including; arid desert, open grasslands and wet tropical forests.

Check out the animal ID signs displayed on our enclosures to find out where each animal is from, their preferred habitat and diet in the wild. Many of the species here at Marwell are threatened with extinction in the wild, either due to habitat loss and/or because they are unsustainably hunted for their meat and horns.

### ID sign layout

Habitat information

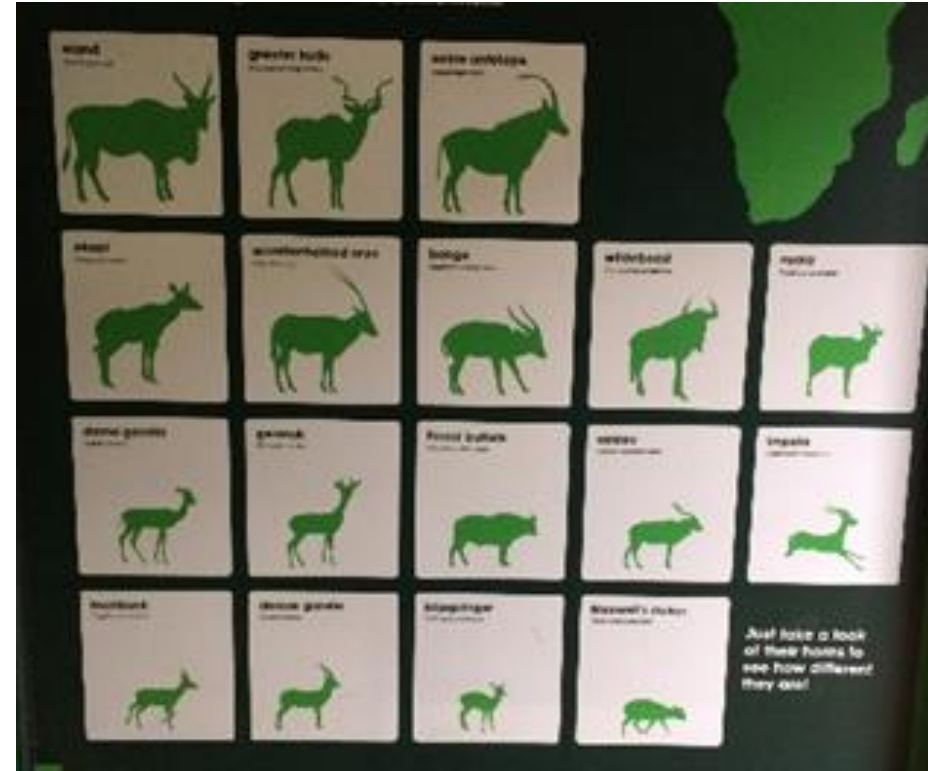
List of foods eaten in the wild



Current conservation status shown in red

Use the table overleaf to record and compare information about those most at risk.

# Why animals have evolved



Using the information given on this display in the Buffalo/Bongo house, find the two factors which have influenced the evolution of this diverse group of animals and write them below;

1. \_\_\_\_\_

2. \_\_\_\_\_

Start your trail here and use the map overleaf to locate some of our horned species to find out more...

# Whose horns?



Find each of the animals featured on the map, then use your observational skills and enclosure ID signs to identify whose horns are whose?



## Evolution and Inheritance Trail

- |                        |                  |
|------------------------|------------------|
| 1 Roan antelope        | 7 Arabian oryx   |
| 2 Mountain bongo       | 8 Addax          |
| 3 Lesser kudu          | 9 Dorcas gazelle |
| 4 Scimitar-horned oryx | 10 Lowland Anoa  |
| 5 Blesbok              |                  |
| 6 Kirk's dik-dik       |                  |

When you think you know, write the number of the animal next to the letter for the correct pair of horns;

