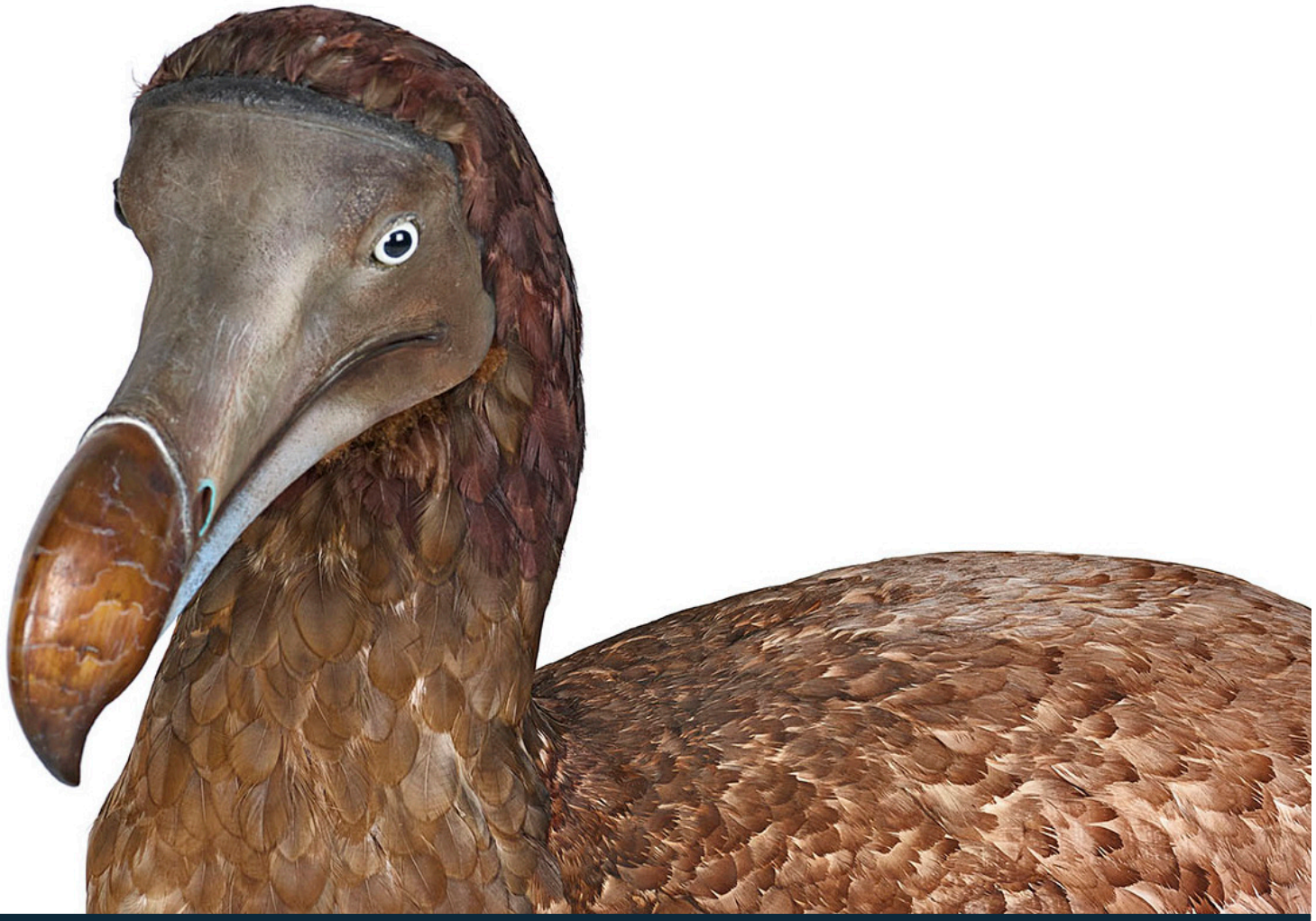


TREASURES OF THE NATURAL WORLD

Education Resource | High school

IN PARTNERSHIP WITH

NATURAL HISTORY MUSEUM

CREATIVE VICTORIA

MUSEUMS VICTORIA

Image © The Trustees of the Natural History Museum, London

Treasures of Science and Life Activity Trail

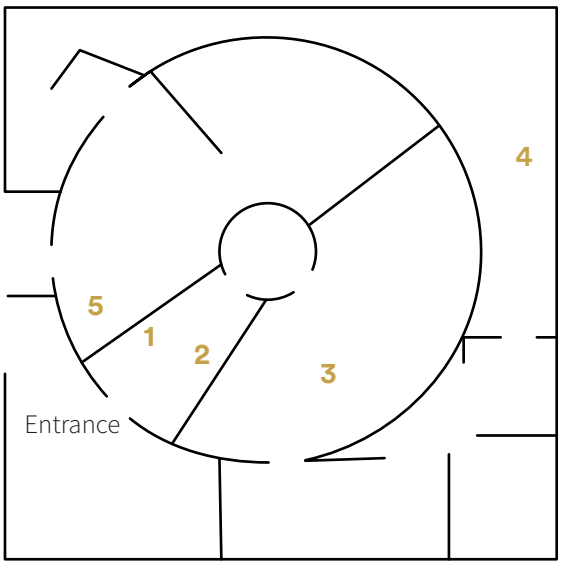
Museums care for objects of historical and scientific importance. Today you will explore two significant collections that tell stories of curiosity and discovery.

Treasures of the Natural World from the Natural History Museum in London, and the *Science & Life gallery* at Melbourne Museum contain objects that are true treasures - but their value is more than monetary. Together, they have potential to unlock answers to the mysteries of the past and the biggest questions we face in the future.

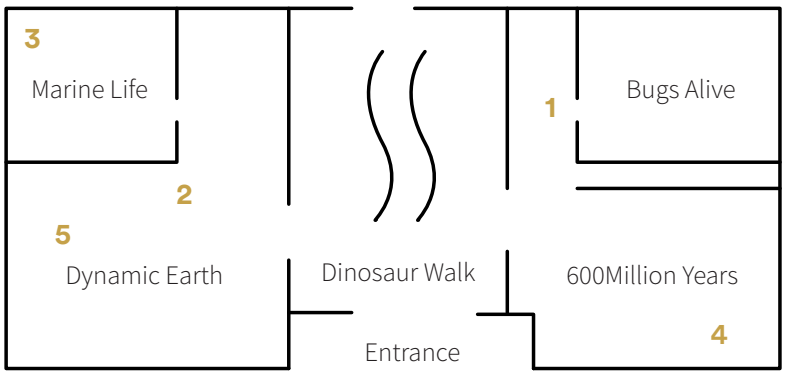
Your Task

Working in small groups, visit the stops outlined on the maps below. At each stop you will be asked to observe, discuss and complete activities relating to the objects that you are viewing and stories that they represent.

1 **Birdwing Butterfly**
2 **Amethyst**
3 **Giant Sea Creatures**
4 **Ichthyosaur**
5 **Gold**



Treasures of the Natural World exhibition map



Melbourne Museum Science and Life gallery map

STOP 1

Birdwing Butterfly

Treasures Exhibition: Queen Alexandra's Birdwing butterfly

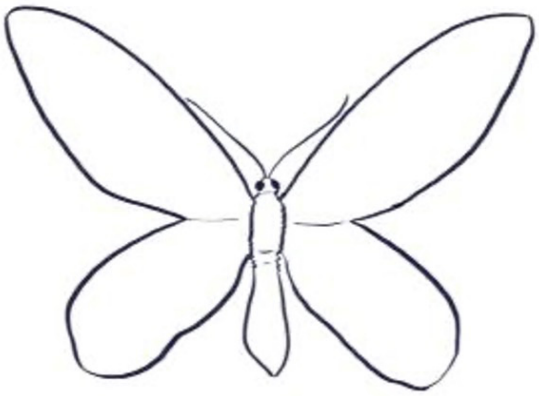
This magnificent insect has an astonishing 21.3cm wingspan. The female Queen Alexandra's Birdwing is the largest butterfly in the world.

Classified as an endangered species, today the Birdwing butterfly can only be found in the rainforests of Paupa New Guinea, where its caterpillar feeds on only one single kind of vine.

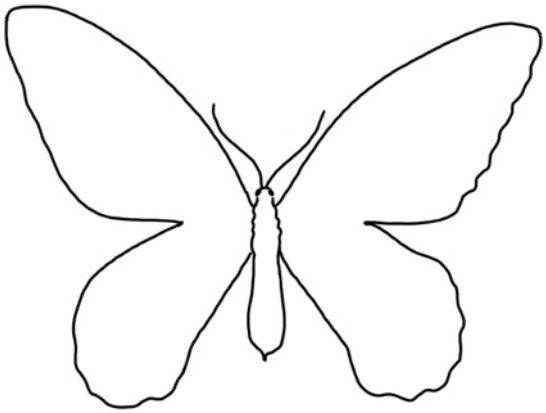
Whilst conservation efforts by entomologists and local indigenous communities are working to protect the butterfly, deforestation and an ever-shrinking habitat create an ongoing threat.

Activity

Closely observe the female and male Birdwing butterfly. Sketch and label the diagrams below to identify similarities, differences and features unique to each sex. Label different parts of the anatomy, and make a note of taxonomic classifications as well as the indigenous name.



Male Birdwing Butterfly



Female Birdwing Butterfly

Melbourne Museum Bugs Alive exhibition: Butterflies

Diversity is the best expression of Life on Earth, and bugs are the most diverse animals of all!
Explore the butterfly collection in the entrance of the Bugs Alive exhibition and discuss the following questions:

1. Which butterfly do you think has the most striking appearance? Why?
2. What features do all butterflies have in common? Find the taxonomic classification inside the exhibition to find out more.
3. Find the Birdwing butterflies in the Bugs Alive exhibition. How do they compare to the Birdwing butterfly in the Treasures exhibition?

STOP 2

Amethyst

Treasures exhibition: 'Cursed' amethyst

As the story goes, terrible events have cursed owners of this amethyst since its theft from an Indian temple. Read the information displayed to learn more about this gemstone's past.

Activity

This piece of amethyst has been faceted and polished into a beautiful gemstone. Closely examine its cut and polished faces and discuss the following questions:

1. Why do you think this amethyst has significance?
2. Do you believe it is cursed?
3. Do you own a piece of amethyst or do you know someone who does?

Image © The Trustees of the Natural History Museum, London

Melbourne Museum Dynamic Earth exhibition: Minerals and Gemstones

Find the amethyst geodes that are pictured here. Did you know that amethyst is the name given to purple coloured quartz? Amethyst gets its purple colour from traces of iron that were present during its formation.

The amethyst that you see before you is in its natural form. It has not been cut or polished like the amethyst gemstone in the Treasures exhibition.

These amethyst crystals formed as part of a chemical reaction that occured within the cavity of a thick lava flow that cooled on the earth's surface in the wake of a volcanic eruption.

Activity

Compare the cursed amethyst from the Treasures exhibition with the natural formation of amethyst here.

1. Which piece of amethyst do you find more interesting and beautiful? Discuss.

Next, find the precious gemstone collection. Locate the display of quartz minerals and examine the range of colours that quartz comes in. You will notice that different names are given to different colours of quartz

2. What is orange quartz called?.
3. Which type of quartz do you like the most? Discuss why.

Image © Museums Victoria

STOP 3

Giant Sea Creatures

Treasures exhibition: Giant Japanese Spider Crab

This leggy crab species is the largest in the world. They look fearsome, and the biggest individuals measure over 3.8 metres claw-to-claw. However, Japanese spider crabs are slow moving, gentle scavengers. No one knows exactly how long they live but scientists estimate between 50 and 100 years.

Activity

Closely observe the Japanese Spider Crab and discuss the following questions:

1. What does it feel like to be standing next to such a large sea creature?
2. Describe the anatomy of the spider crab. What distinguishing features does it have?

Image © The Trustees of the Natural History Museum, London

Melbourne Museum, Marine Life exhibition: Giant Squid

Giant squids are the largest invertebrates (animals without a backbone) in the world. They can weigh up to 300 kilograms and reach more than 15 metres in length.

Giant squids have huge eyes, eight legs and two very long tentacles. They live at depths of between 500 and 1500 metres where they hunt fish and squid.

Activity

Compare the Giant Squid with the Giant Japanese Spider Crab that you saw earlier.

1. What similarities and differences do you notice between these giant sea creatures?
2. Can you name or describe any other giant sea creatures?

Image © Museums Victoria, Photographer: Andrew Curtis

STOP 4

Ichthyosaur

Treasures exhibition: Ichthyosaur

Around 200 million years ago, this young ichthyosaur swam and hunted in the oceans covering Britain. Ichthyosaurs had streamlined bodies like those of modern dolphins. Like a dolphin they also gave birth to live young. The fossilised remains of the ichthyosaurus that you see here was discovered by Mary Anning a English fossil collector and palaeontologist.

Activity

1. Can you see the resembelence between the Ichthyosaursus and modern dolphins? Discuss the similarities and differences that you observe.

Image © The Trustees of the Natural History Museum, London

Melbourne Museum, 600Million Years Exhibition: Platyptergius

The Platyptergius is type of ichthyosaur that roamed the inland seas of Australia around 120–90 million years ago. This large ichthyosaur would have been a top marine predator, feeding on fish and moluscs such as squid, octupus and cuttlefish.

Ichthyosaurs had the largest eyes of any marine vertebrate. Its keen eyesight and its 200 or so teeth would have helped Platypterygius to spot and hunt prey in dark, cold waters.

Activity

Use the space opposite to draw the skull of the Platyptergius ichthyosaur in as much detail as you can. Label and describe the key features.

STOP 5

Gold

Treasures exhibition: La Trobe Gold Nugget

This piece of gold was found in 1853 near Heathcote, Victoria. Most big nuggets found in the Victorian gold rush were melted and presented to Queen Victoria. This one survives unmelted because it was sold to the British Museum. This gold nugget is considered to be a significant treasure.

Image © The Trustees of the Natural History Museum, London

Activity

In your group discuss why the La Trobe gold nugget is considered such a significant treasure.

1. Is it because it's a very rare form of gold: a mass of gold crystals shaped like cubes and octahedrons?
2. Is it a treasure because of its size: 717 grams?
3. Or is it a treasure because it is a piece of Dja Dja Wurrung Country, the traditional lands of the Jaara people?

Melbourne Museum, Dynamic Earth exhibition

Gold has been an international currency and symbol of wealth for thousands of years. It is highly valued because of its rarity, its attractiveness and its properties.

Gold does not tarnish and it can be easily shaped. This gives it many ornamental and practical uses, which adds to its value.

Activity

Explore the collection of gold exhibited here. What interesting things do you notice?.

Use the gold scales and weigh yourselves as a group to see how much you would be worth in gold! Before you do estimate your value in gold and record it below.

Estimation

_____

If our group was made of gold we would be worth

_____