

# ADAPTATIONS IN A CHANGING WORLD

## TEACHER RESOURCE

Stage 3: Science & Technology

Outcomes: ST3-4LW-S



Adaptations are remarkable features that have evolved in animals over millions of years allowing them to survive and thrive in their environment.

Plants and animals are continuously responding to changes in their habitat. These environmental pressures drive evolution, but what happens when change is too rapid?

In *Adaptations in a Changing World*, students explore a diverse range of animal adaptations through up close interactions with Taronga's wildlife and investigate how these adaptations lead to success in the wild. Building upon this knowledge, students consider what threats each species face and discuss how these unique adaptations are challenged by today's changing environments, both natural and human induced.

# SUGGESTED ACTIVITIES

Pre- or Post-Zoo Visit

## STRUCTURAL AND BEHAVIOURAL ADAPTATIONS

A **structural adaptation** is a physical feature that supports a species ability to survive.

For example, a Lesser Sooty Owl has large feet and sharp talons. One of their toes can turn to face forwards or backwards.

As a bird of prey, these physical features help make this species a supreme predator and they use them to hunt prey species to get plenty of food. If you compare their feet to a bird in the school playground like a Noisy Miner or Cockatoo who doesn't need to hunt animals to survive, they are very different.



A **behavioural adaptation** is an action that a species does, usually in response to something, that improves survival.

For example, a Short-beaked Echidna has sharp quills all over its body. While these quills are an impressive physical feature that supports their survival in several ways, when an echidna feels threatened by another animal they quickly hunch over their body and dig to grip to the ground as tightly as they can, which makes the quills stand up and protects the softer vulnerable parts of their body. This action is something all echidnas do and keeps them safer from larger predators like foxes, dogs and eagles.

## STUDENT ACTIVITIES – BEFORE OR AFTER THE ZOO

### PET ADAPTATIONS

Ask your students to describe their pets' adaptations (if they have one) or use the animals you can find in your playground. Identify the structural features they have and behaviours they do that help them survive.

### HABITATS

Give your students an environment, for example desert, coral reef, rainforest, etc. Ask them to research and draw different species of animals that live in that habitat. Have them draw the animal and label it's adaptations (behavioural and structural).

### COMPARISONS

Give your students two different animals, such as a turtle and tortoise, to write a comparison of the similarities and differences of each animals' adaptations. Students can link the adaptations to the habitat the animal lives in.

### DESIGN AN ANIMAL

Using your knowledge of different animals, design an animal with ultimate survival adaptations. Think about which environment this animal would live in and what behavioural adaptations it also might have to assist it in surviving.

# IDENTIFYING ADAPTATIONS

Student Zoo Activity



Walk around Taronga Zoo to observe some different species. List the structural and behavioural adaptations that you can identify and explain how they help each species survive.

## LEARNING INTENTION

- I am learning to identify the differences between structural and behavioural adaptations

## SUCCESS CRITERIA

- I can list structural and behavioural adaptations of a species of animal.
- I can explain how an adaptation helps a species to survive.

Animal	Adaptation – Draw and label	How does this adaptation support survival?
Structural:		
Behavioural:		
Structural:		
Behavioural:		
Structural:		
Behavioural:		
Structural:		
Behavioural:		
Structural:		
Behavioural:		

# ADAPTATIONS SCAVENGER HUNT

Student Zoo Activity [Taronga Zoo Sydney Map](#)



Explore Taronga Zoo to find these animals and explore their adaptations.

## Reticulated Python

### *Reptile World - Map Reference L12*

A great example of a structural adaptation is a snake's scales. We can use the pattern and colours as clues to work out what type of environment a species might be found in.



Choose a species of snake in Reptile World \_\_\_\_\_

What kind of habitat would this animal live in? \_\_\_\_\_

Explain your answer \_\_\_\_\_



## Southern Corroboree Frog

### *Southern Corroboree Frog Exhibit - Map Reference K11*

A frog can breathe oxygen through their skin and absorb water! Not only that, but it is also an important tool to keep them safe from predators.

What does this frog's skin communicate to its predators? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

## Nicobar Pigeon

### *Palm Aviary - Map Reference F14*

Describe the Nicobar Pigeon's feathers \_\_\_\_\_

\_\_\_\_\_

What type of environment would this pigeon live in and why?

\_\_\_\_\_

\_\_\_\_\_



## Yellow-bellied Glider

### *Nguwing Nura – Nocturnal Country - Map Reference I5*

This species of glider is nocturnal. Describe why this is a behavioural adaptation.

\_\_\_\_\_

\_\_\_\_\_

# THREATS IN A CHANGING WORLD

After the Zoo Activity



Name an animal that is impacted by each of these threats in our changing world and describe how it is impacted.

## NATURAL DISASTERS & ENVIRONMENTAL EMERGENCIES

## INTRODUCED ANIMALS

## POLLUTION

## DISEASE

## HABITAT LOSS

# ACTING FOR A CHANGING WORLD


After the Zoo Activity



Being an ambassador for wildlife is a powerful action that can help secure its future. Profile a species you are passionate about below and share how you can be their voice and act for the wild.

**I AM A CHAMPION FOR**

**THE ADAPTATIONS THAT MAKE THEM UNIQUE ARE:**

 **THIS IS WHAT THEY LOOK LIKE**

**THEY NEED OUR HELP TO BE PROTECTED AGAINST**

**I AM SUPPORTING THEM BY**