# THROUGH THE EYES OF A SCIENTIST

## TEACHER RESOURCE

Stage 2 and 3 Science & Technology

Outcomes: ST2-1WS, ST2-4LW-S, ST2-2DP-T, ST3-1WS, ST3-4LW-S, ST3-2DP-T

Curiosity drives scientific discovery. Your students can become scientists by exploring the scientific process. Through observing animals and learning about behaviours and characteristics that help them survive in the wild, they will develop skills that will help them see the world like a scientist.

At Taronga Zoo, your students will get the opportunity to interact with our habitat classroom and conduct these observations.

TARONGA ZOO SYDNEY

For the Wild

# SUGGESTED ACTIVITIES- TEACHER RESOURCE

Pre- or Post-Zoo Visit

## WHAT IS THE SCIENTIFIC METHOD?

The scientific method is a process for experimentation that is used to explore observations and answer questions, it comprises of five main steps:

1. Observation
2. Questioning
3. Forming a hypothesis
4. Experimenting
5. Data analysis and conclusion

The foundation of being a successful scientific investigator is using your powerful senses as an observation tool. We often observe with our eyes but our other senses help to gain a deeper understanding of the world around us and find connections.

The activities in this resource will allow students to collect data based on their own observations. Not everyone will notice the same thing all the time. These observations should drive discussion so the experiments can be repeated and provide opportunities to make observations from a different perspective. This should drive further questions that assist students in developing a greater understanding of their surroundings.

# SUGGESTED ACTIVITIES

Pre- or Post-Zoo Visit

## LEARNING INTENTIONS

Use animal observations to collect and record data using various methods.

## SUCCESS CRITERIA

Collect and record data in a variety of ways and communicate your findings.

## ETHOGRAM

Using the ethogram scaffold on page 6, An ethogram is a chart which displays a list of possible behaviors as well as a timeline. Using this tool, your students can document the minute-by-minute actions and behaviors of any animal. Practicing backyard/schoolyard animal observations is a great way to introduce students to conservation science.
With a partner, choose an animal/group of animals to observe for 5 minutes. Watch everything they do (movements, behaviours, where they like to rest, their social interactions, etc) and formulate a questions with your partner that you would like an answer to e.g. What activity do Chimpanzees commonly do?
Using the ethogram template, complete the details about your chosen animal and allocate roles of timekeeper and who will record. Both partners will need to observe. Record the data and analyse it to assess whether you can answer your question. As a scientist, what would be your next step?

## SOUND MAP

Use the scaffold found on page 5, to complete a Sound Map in your school or local environment.

Once you have positioned yourself, close your eyes and listen. Record all the sounds that you hear and where they are coming from on your map, relative to your position.

Faint sounds could be further away, and loud noises can be drawn larger.

Consider what is making each sound and why. Are these sounds natural? What clues do they tell us about this environment and its inhabitants?

Tip - using a device such as iPad, the voice recording feature can be a powerful tool in capturing and analyzing sounds within environments. Your students can use a device with this function to record a short sound clip from a space near you. Students can then analyze and record their findings. This could be a powerful stimulus for writing tasks, poetry and art.

TARONGA ZOO SYDNEY

For the Wild

# SUGGESTED ACTIVITIES

Pre- or Post-Zoo Visit

## INVESTIGATE BIODIVERSITY IN YOUR SCHOOL BY TRYING A TREE SHAKE INVESTIGATION!

**Equipment:**
Gloves, white sheet, plastic sheet, collection jars (magnified if possible), paint brush or stick (to safely sweep or pick up insects with), a piece of paper and a pencil.

**Method:**
1. Put on your gloves
2. Lay out the white sheet under the branches of a bush or low tree
3. Shake the branches of the tree to dislodge insects or arachnids
4. Observe what animals have fallen on your sheet and choose 1 to place into your magnifying jar
5. Using the soft bristles of a paintbrush or carefully with a stick, move the animal into your container
6. Use your observation skills learnt to begin recording what you have noticed. Take a photo if possible!
7. Optional - write 1 scientific question or 1 prediction you would like to explore further about this animal
8. Return your animal on/near the tree. Be sure to keep yourself and the invertebrate safe!

## CREATE HABITAT IN YOUR SCHOOL

**Some ideas…**

1. A collection of native plants, ground cover, small shrubs and 1 or 2 larger plants (Your local council may provide these if you ask!).
2. A birdbath, a small dish or a little pond to provide a water source for native wildlife that live in your school. Don't forget to replenish with clean water.
3. A nest box in one of your schools biggest, strongest trees! See photo above of a bird's habitat.

## DIGITAL RESOURCES

**FrogID**
FrogID is an app that encourages scientific investigation skills and helps your students identify frogs. They can learn all about one of the most incredible animals in your local ecosystem! Using Frog ID helps support others in their quest to protect them.

**QuestaGame**
QuestaGame is an app where your students can embark on real world adventures to capture life in photos. They can venture round their schoolyard or backyard to discover creatures and learn about life. Using QuestaGame will help protect the biodiversity of your local area.

**LINKS:** Frog ID QuestaGame

TARONGA ZOO SYDNEY
For the Wild

# THROUGH THE EYES OF A SCIENTIST

## STUDENT WORKSHEET - SOUND MAP

Our senses are our most powerful scientific observation tool. We often rely on heavily on our sight to observe visual characteristics of the world around us. In this activity, we are going to hone in on our auditory senses by closing our eyes and listening.
Use the Sound Map below to record the sounds you can hear in your environment. Draw where the sounds are coming from, how loud or faint they are and what you think is making that sound.


TARONGA ZOO SYDNEY
For the Wild

## FIVE MINUTE ETHOGRAM

In the table below record the most demonstrated behaviour using tallies.

Date _____ Location _____ Start Time _____ End Time _____

Species name _____

Description of animal _____

Description of habitat _____

| Minutes/ seconds | Resting/ sleeping | Eating/ drinking | Grooming | Travelling | Hunting/ Gathering (food) | Social Interaction | Not Visible |
|---|---|---|---|---|---|---|---|
| 0:00:00 | | | | | | | |
| 0:00:30 | | | | | | | |
| 0:01:00 | | | | | | | |
| 0:01:30 | | | | | | | |
| 0:02:00 | | | | | | | |
| 0:02:30 | | | | | | | |
| 0:03:00 | | | | | | | |
| 0:03:30 | | | | | | | |
| 0:04:00 | | | | | | | |
| 0:04:30 | | | | | | | |
| 0:05:00 | | | | | | | |
| | | | | | | | |

**Prediction:** _____

**E.g.** Can you predict what Chimpanzees spend most of their time doing?

**Question:** _____

**E.g.** How much time do chimpanzees spend resting and sleeping?