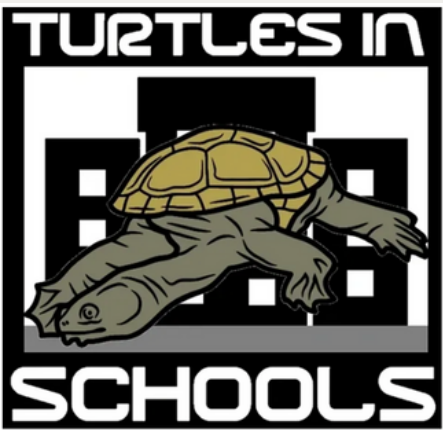


TURTLES IN SCHOOLS





TURTLES IN SCHOOLS

Produced by the
1 Million Turtles Community
Conservation Program
and funded by
The Foundation for National
Parks and Wildlife.

In the pages that follow, you will find a comprehensive set of lesson plans.

Our initiative is not just about imparting knowledge but fostering a deep connection between students and their natural environment and instilling a sense of responsibility and awareness of freshwater turtles and their conservation.

As we embark on this educational venture, we extend our gratitude to educators, students, and all those who champion the cause of conservation. The Turtles in Schools Program is not just a curriculum; it is a movement to inspire the next generation of environmental custodians.

Thank you,

**1 Million Turtles Community
Conservation Program**

Shellebrate

World Turtle Day

23rd May



Classroom Activities

ACTIVITY

What I Know (K), What I Want to Know (W), What I Learnt (L)

Materials:

- Large chart paper divided into 3 sections labeled "K" (Know), "W" (Want to Know), and "L" (Learnt).
- Markers or pens

Instructions:

(1A) Brainstorm what you Know (K) about wetlands and freshwater turtles. Write them in the "What I Know" column.

(1B) Write questions of "What I Want to Know" in the Want to Know (W) column.

What I Know
(K)

Want to Know
(W)

What I Learnt
(L)



CULLESON

TERM TWO

PREPARATION FOR THE NATIONAL NEST PREDATION SURVEY

- Learning Intentions
- Background
- Activities
- Curriculum Mapping

Photo credit: Dr Donald McKnight



Learning Intentions

(1) Define an experimental design;

(2) Explain the 3 R's Principle and how it is used in scientific research;

(3) Participate in the National Nest Predation Survey.



Define



Explain



Participate

Background Information

Experiment design and the 3 R Principle

Experimental Design:

Experimental design refers to the process of planning and organising an experiment in order to gather data and draw conclusions to answer a research question.

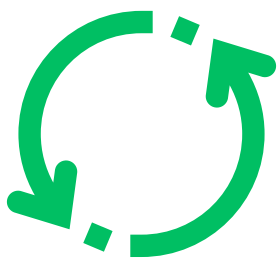
The 3 R Principle:

The 3Rs is a concept that refers to the guiding principles for the ethical use of animals in scientific research. The 3Rs stand for Replacement, Reduction, and Refinement. These principles aim to minimise the use of animals in research, reduce their suffering, and improve their welfare.

1) Replacement – the principle of replacement aims to find alternative scientific methods that can replace the use of animals in research where possible.

2) Reduction – the principle of reduction focuses on minimising the number of animals used in research.

3) Refinement – the principle of refinement aims to improve the welfare of the animals used in research, through refining experimental procedures and protocols to minimise pain, distress or suffering.



Replace



Reduce



Refine

National Nest Predation Survey (NNPS)

The National Nest Predation Survey encourages communities to measure nest predation rates. Nest predation rates on turtle nests are very high in many parts of the country. Introduced foxes are the major predator. By conducting the National Nest Predation Survey throughout Australia the 1 Million Turtles Community Conservation Program, aims to develop a national interactive 'hotspot' map to determine region specific estimates of predation rates.

As part of the National Nest Predation Survey, users will be trained as citizen scientists conducting the survey in their region. The survey involves the creation of artificial nests by placing chicken eggs underground and monitoring predation rates. The NNPS must be done on private land or under the guidance or approval from local land management agencies (e.g., Local Council). Ideally the survey is done near a wetland (e.g. river, creek, lagoon, pond) and outside of the month of November.



Classroom Activities

ACTIVITY 1

(1A) Complete the Experimental Design worksheet to test your knowledge on experimental designs and the 3R principle.



Worksheet

ACTIVITY 2

(2A) Coordinate with the local council to organise class involvement in the NNPS. This is a requirement of participating in the NNPS.



Coordinate

Experimental Design & 3R's

Define an experimental design:

Draw a line to connect the words with their definitions

Replacement

Focuses on minimising the number of animals used in research.

Reduction

Aims to find alternative scientific methods that replace the use of animals in research.

Refinement

Aims to refine experimental procedures and protocols to minimise pain, distress or suffering.

Classroom Activities

ACTIVITY 3

(3A) Complete a risk assessment, as per the 1 Million Turtles website.

(3B) Complete the National Nest Predation Survey quiz prior to participating in the survey.

Link to risk assessment and survey on the website: [Copy and paste into browser] <https://1millionturtles.com/nnp-survey>).

ACTIVITY 4

(4A) Watch the following videos -

Video 1 provides an overview of how to conduct the National Nest Predation Survey.

Link to video: [<https://youtu.be/624skxfMhYM>] (Copy and paste into browser)

Video 2 explains how to dig artificial nests.

Link to video: [<https://www.youtube.com/watch?v=4C1nvkzylq4&t=2s>] (Copy and paste into browser).

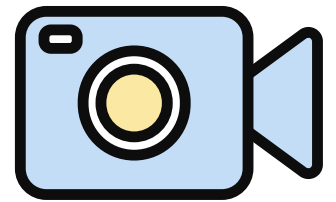
(4B) Reflect on the information in the two videos and complete the Video Reflection Handout.



Video Reflection

Three things I learnt while watching

3



Two questions I have from the video

2



One fact I found most interesting

1



Australian Curriculum addressed in this Lesson



Science

Strand: Science as a human endeavour (Year 5)

Sub-strand: Nature and development of science

AC9S5H01: examine why advances in science are often the result of collaboration or build on the work of others.

Sub-strand: Use and influence of science

AC9S5H02: investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions.

Strand: Science inquiry (Year 5)

Sub-strand: Planning and conducting

AC9S5I02: plan and conduct repeatable investigations to answer questions, including, as appropriate, deciding the variables to be changed, measured and controlled in fair tests; describing potential risks; planning for the safe use of equipment and materials; and identifying required permissions to conduct investigations on Country/Place.

Australian Curriculum addressed in this Lesson



Science

Strand: Science as a human endeavour (Year 6)

Sub-strand: Nature and development of science

AC9S6H01: examine why advances in science are often the result of collaboration or build on the work of others.

Sub-strand: Use and influence of science

AC9S6H02: investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions.

Strand: Science inquiry (Year 6)

Sub-strand: Planning and conducting

AC9S6I02: plan and conduct repeatable investigations to answer questions including as appropriate, deciding the variables to be changes, measured and controlled in fair tests, describing potential risks, planning for the safe use of equipment and materials; and identifying required permissions to conduct investigations on Country/Place.

4 LESSONS

TERM TWO

INTRODUCTION TO TURTLESAT

- Learning Intentions
- Background
- Activities
- Curriculum Mapping

Photo credit: Dr Donald McKnight

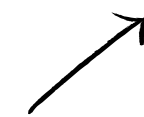


Learning Intentions

- (1) Explain how TurtleSAT can be used by the public to collect data;
- (2) Understand the role of technology in scientific data collection and the importance of digital tools and databases.



Explain



Background Information

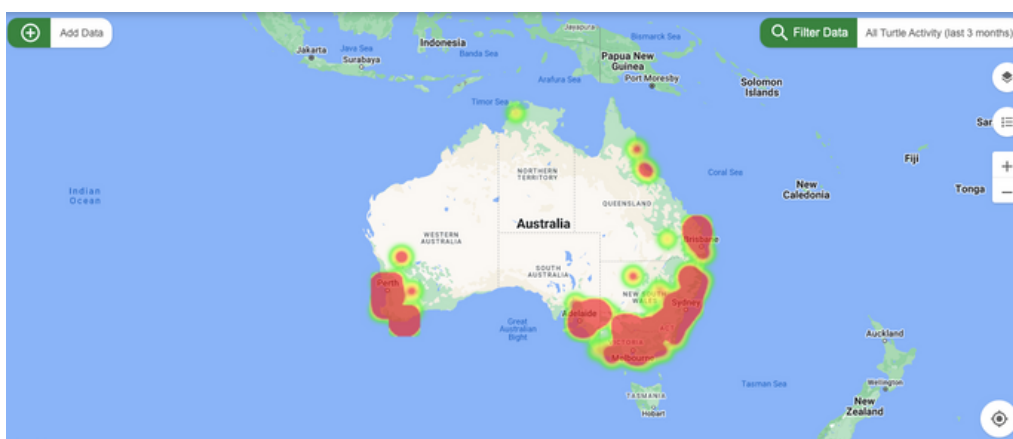
TurtleSAT

TurtleSAT is a citizen science mapping tool produced by the 1 Million Turtles Community Conservation Program. TurtleSAT allows communities to map the location of freshwater turtles in waterways and wetlands across the country.

The TurtleSAT app collects important information relating to the distribution and abundance of freshwater turtles. Participants submit sightings of turtles and their nests, with the app recording data such as the geographic location, species of turtle, individuals demographic, turtle behaviour (i.e. nesting, basking, crossing the road) and turtle and nest fate (i.e. alive or dead).

The data collected through TurtleSAT contributes to a broader understanding of freshwater turtle ecology and population health. It aids researchers, conservationists, and policymakers in making informed decisions to protect and manage freshwater turtle populations and habitats.

TurtleSAT emphasises public engagement and education, encouraging people of all ages and backgrounds to participate in the project. It promotes awareness about the importance of freshwater turtle conservation and the role that individuals can play in contributing to scientific knowledge.



Classroom Activity

ACTIVITY

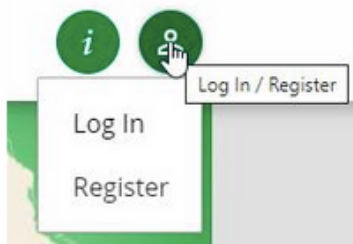
(1) Visit the TurtleSAT website and explore the information presented.

Link to website: <https://www.turtlesat.org.au/turtlesat/> [Copy and paste into browser]

(2) Learn about the types of data TurtleSAT collects and how to enter it.

Record your observations

Step 1 Register your details



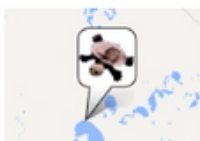
Register your details to join the TurtleSAT project, or simply record information with a valid email address. You do not need to register but it will make it easier for you to view your own data, and enable the TurtleSAT team to keep you informed about how your data is helping to protect turtles in your local area.

Step 2 Map your observations



Record wherever you see freshwater turtles, their nests or evidence of predation on turtles by pests like introduced Foxes. To enter data, zoom to your current location and place a marker on the map, then insert the details of your observation in the form provided. Mobile phone users can also enter data while in the field.

Step 3 Submit your record



Submit your record and view the details in the All Sightings or My Data tabs. View other observations in your local area entered by other community members. You can also upload your photos to the Photo Gallery and they will display on the TurtleSAT website.

TurtleSAT

Imagine you are a citizen scientist using TurtleSAT to record turtle sightings in your local area. Provide two hypothetical scenarios where you might encounter a turtle and describe what data you would record for each scenario using TurtleSAT.

Australian Curriculum addressed in this Lesson



Science

Strand: Science inquiry (Year 5)

Sub-strand: Planning and conducting

AC9S5I03: use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriate.

Strand: Science inquiry (Year 6)

Sub-strand: Planning and conducting

AC9S6I03: use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriate.

57 LESSONS

TERM TWO

THE NATIONAL NEST PREDATION SURVEY

- Learning Intentions
- Background
- Activities
- Curriculum Mapping

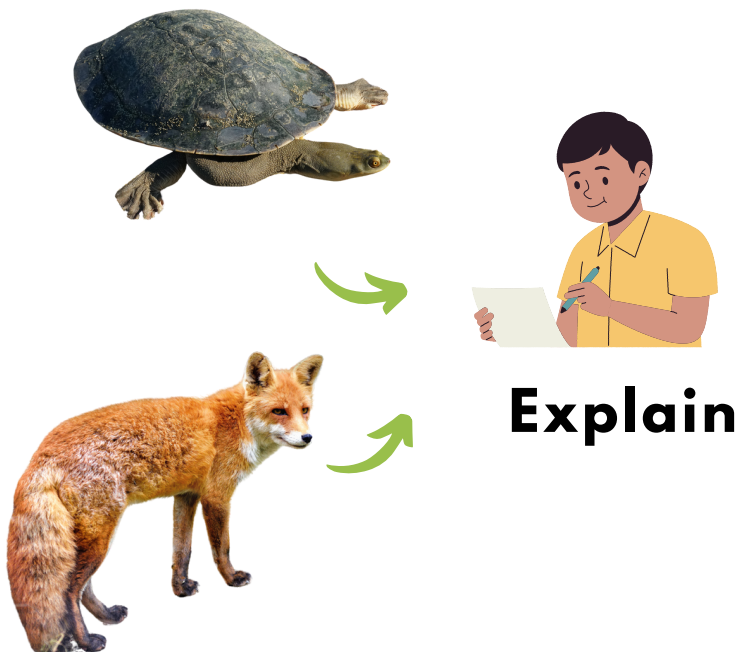
Photo credit: Dr Donald McKnight



Learning Intentions

(1) Explain why the National Nest Predation Survey is important;

(2) Apply their skills as a citizen scientist in the implementation of the National Nest Predation Survey.



Background Information

National Nest Predation Survey (NNPS)

Importance of the National Nest Predation Survey:

Nest predation rates on turtle nests are very high in many parts of the country. Introduced foxes are the major predator. By participating in the NNPS, you will be monitoring the impacts of predation on turtle nests in your area and be part of a powerful citizen science network providing data to improve conservation actions for our freshwater turtles. The data collected in the National Nest Predation Survey will be used to develop a national interactive 'hotspot' map to determine region specific estimates of predation rates.

How to conduct the National Nest Predation Survey:

The following instructions are taken from the 1 Million Turtles Community Conservation Program website (Copy and paste into browser: <https://1millionturtles.com/nnp-survey>).



National Nest Predation Survey (NNPS)

Equipment:

For your personal safety

- Gloves (e.g., disposable gloves)
- Alcohol wipes
- 1 × First aid kit



To set up the survey site

- 2 x Carton of dozen eggs
- 1 × 15 cm Hand auger or a hand trowel
- 1 X 30 metre Tape (or you may also use shorter tape measures if available)
- 10 × Steel flags (it could be any bright colours for easy identification when taking photos upon completion of the site set-up) (1#) - If you don't have any steel flags and would like some, please contact us at 1millionturtlesprogram@gmail.com to request for a set (10 flags) and we will mail it out to you.
- 3 x Wooden stakes (or 4 if you are not setting up a wildlife camera) (2#)
- Your phone or a camera to take photos of your site (before removing the steel flags)
- 1 X Garbage bag (to carry back any rubbish)

If you are setting up a wildlife camera (optional)

- 1 × Star post plus cap
- 1 × Star dropper or Star picket
- 1 × Hammer or Mallet
- 2 × Cable ties (to secure the camera to the star dropper or picket)
- 1 × Wildlife camera trap (aka remote sensor camera or motion sensor camera)
- Alcohol wipes (to wipe down the camera before you leave the site).

National Nest Predation Survey (NNPS)

Setting Up a Wildlife Camera (Optional)

- You may use a star picket or any existing sturdy structures such as a fence post, or tree trunk. If you are strapping the camera to a tree, check that your camera strap is large enough to go around the trunk.
- Generally, it is not recommended to mount your camera on trees that are thin as this may cause your camera to sway during windy conditions causing the camera to trigger falsely.
- If your camera doesn't come with a mounting strap, you may also use a cable tie to mount the camera.
- Another important consideration is minimising the effect of grass waving in the wind. If possible, please try and set up your cameras in areas with short grass.
- Mount the camera facing in the southerly direction to avoid strong sun glare.
- Tilt the camera slightly so that it faces downwards. This ensures that the camera sensor's detection zone or field of view (FOV) width is maximised when it hits the ground. This helps to detect the movement of any wildlife on the ground that are visiting the nests.
- It is likely that some of the nests may be outside of the camera's FOV. This is ok, as long as one or more nests are within the FOV.
- You may opt to set up your camera once the survey site has been selected and do the necessary test to ensure your camera is working well. Once you finish testing the camera, you may it switch off.
- Once the nests set-up is complete (and all the flags are removed), switch the camera on before leaving the survey site and leave it switch on for the duration of the survey (i.e., 3 weeks). Please wipe down the camera's exterior before leaving the site (using the alcohol wipes). This ensures that you minimise any scent trails from the handling of the camera.



National Nest Predation Survey (NNPS)

Select a Survey Site:

Freshwater turtles are present in most wetlands throughout mainland Australia. Ideally the NNPS is done near a wetland (e.g., river, creek, lagoon, pond). It can also be done anywhere if you have enough space and have the right permissions in place (e.g., on private land or in conjunction with local management agencies).

It is best to conduct your nest predation survey within 100m from shore. Turtles come out of the water and generally nest in habitats that are open and away from trees. Some species, like Eastern Long-Neck turtles, may walk long distances but most turtles nest relatively close to shore.

You can often find dug up nests and egg shells on the ground while walking around your wetland. Don't forget to record those dug up nests into TurtleSAT.org.au. Sites close to these nesting grounds make ideal areas to conduct your survey.



Turtles dig a hole that is up to 30cm deep and will deposit 10-30 small eggs per nest. We will use 2 larger chicken eggs in our artificial nests. Turtle eggs will incubate underground for 2-3 months for most species, but some like the Broad-Shelled Turtle, have eggs that remain underground for up to 12 months before hatching. The NNPS can take place at any time of year, except during Turtle Month (November), to make sure we avoid encountering and disturbing turtles actively nesting.

TIP: We do not recommend setting up the survey on land with cattle present as they destroy the set up. Sheep don't appear to do as much damage.

One site is sufficient for this survey.

National Nest Predation Survey (NNPS)

Setup Your 20m x 20m Survey Plot:

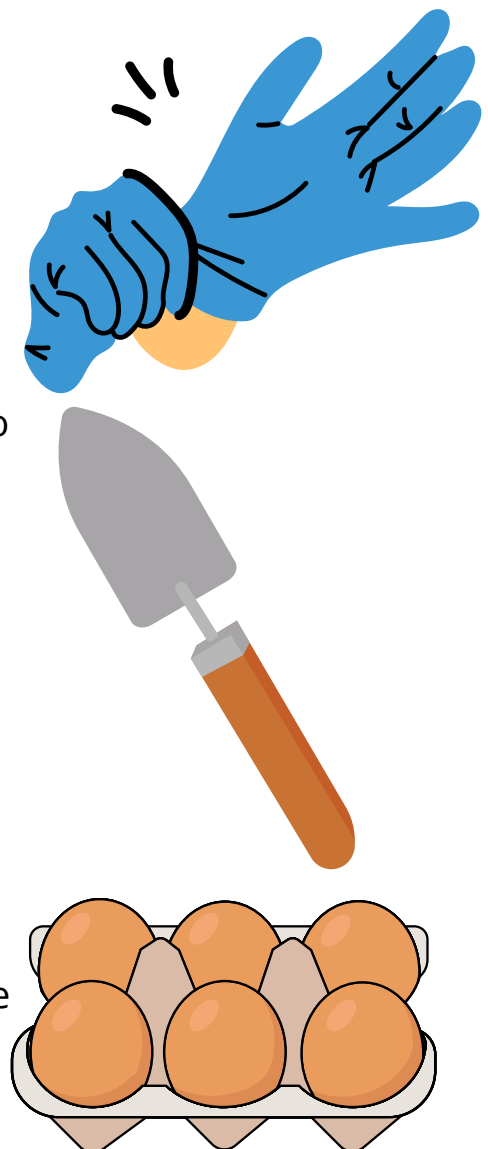
It is best to have at least 2 people setting up a site. Measure out a 20m x 20m square plot using the tape measures in your kit and at each of the four corners hammer in a small wooden stake or star post. If possible, use a marker pen or paint to number each corner wooden stakes.

Place your wildlife camera (if you are using one) on one corner star picket facing southerly towards the middle of your plot securing it with cable ties. Remember to switch on the camera before leaving your site. We recommend to set the camera to capture three still shots with a 1-minute delay. Record the GPS the location of your site. Please use decimal degrees (e.g., -34.04214, 151.05211).

Creating Nests:

Ensure you are wearing gloves at this point. You can use an auger or a trowel to create 10 holes. The holes are created randomly and are not evenly spaced. We recommend using an auger to create a round nest. If you don't have an auger, trowels (e.g., garden trowels) can also be used. However, please don't use a shovel as the hole may end up being too large.

Dig the hole approximately 10-15cm wide and 15-20cm deep. In each hole, bury two chicken eggs. Please ensure that you are wearing gloves at all times while undertaking these tasks. This ensures that you don't leave your scent trail on the eggs. After placing the eggs into each hole, cover them with the loose soil so that it is flush with the ground and place one brightly coloured flag (or other visible marker) at each hole.



National Nest Predation Survey (NNPS)

Leaving the Site:

Before you leave, go to each corner of the site and take a photo. Take as many photos as needed from each corner point while the coloured flags or visible markers are still in place. Please ensure that the photo captures sufficient details of the surrounding (e.g., clear visibility of the coloured flags and the corner stakes such as the wooden stakes) to help you identify and locate the nests when you return. Once you are done with taking the photos, please remove all coloured flags/visible markers from the nests. Again, it is important that you are wearing gloves to carry out all these tasks.

You need to return to the site in three weeks and locate the nests. Finding the nests can be difficult, this is why your photos are important. You may also opt to print out the photos and bring them along to use as a reference to help you find the nests in three weeks.

TIP: Printing the photo on A3 works the best, but iPads can be effective as they allow you to zoom in when guiding people to find nests.

Once you are done with taking the photos, please remove all coloured flags/visible markers from the nests. Again, it is important that you are wearing gloves to carry out all these tasks.

If you are setting up a wildlife camera, before you leave - ensure that it is switched on and wiped down the camera with alcohol wipes to remove any scent trails.



Wetland Activity

ACTIVITY

(1) Participate in the National Nest Predation Survey. Follow the instructions on how to set up the survey plot and create artificial nests.



Australian Curriculum addressed in this Lesson



Science

Strand: Science inquiry (Year 5)

Sub-strand: Planning and conducting

AC9S5I03: use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriate.

AC9S5I02: plan and conduct repeatable investigations to answer questions, including, as appropriate, deciding the variable to be changed, measured and controlled in fair tests; describing potential risks; planning for the safe use of equipment and materials; and identifying required permissions to conduct investigations on Country/Place.

Strand: Science inquiry (Year 6)

Sub-strand: Planning and conducting

AC9S6I03: use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriate.

AC9S6I02: plan and conduct repeatable investigations to answer questions including, as appropriate, deciding variables to be changed, measured and controlled in fair tests; describing potential risks; planning for the safe use of equipment and materials; and identifying required permissions to conduct investigations on Country/Place.

6 LESSONS

TERM TWO

THE NATIONAL NEST PREDATION SURVEY- DATA COLLECTION

- Learning Intentions
- Background
- Activities
- Curriculum Mapping

Photo credit: Dr Donald McKnight



Learning Intentions

(1) Collect and accurately record data.



Collect



Record

Background Information

National Nest Predation Survey (NNPS) - Data collection

Data collection:

We recommend returning to your National Nest Predation site, 3 weeks after the artificial nests were created to collect data.

Data collection requires two people. The first person will stand at each wooden stake with the relevant photo and guide the 2nd person to each nest location. If the nest has been dug up, egg shells and a hole will be present and easy to find. If it has not been dug up, it may require some time and effort to find. Once you have located all 10 nests, record how many nests have been dug up. Remove or destroy any remaining eggs within intact nests. Once you are done, collect your wooden stakes (or star posts) and wildlife camera.



If you have used a wildlife camera, you need to look through all the images captured on the SD card. Please record the number of days that a fox was observed (not the number of fox images). For example, if a fox was captured 6 times in one night, it still gets recorded as a "1". Similarly, if a fox is observed once over a 24h period it also gets a "1". If no fox was observed over a 24h period, then it is given a "0". Tally the number of "1s" recorded and that will be recorded into the online survey. You will also need to record the number of nights that the camera was out there.

Wetland Activity

ACTIVITY

(1) Return to the site of the NNPS, approximately 3 weeks after the chicken egg nests were created and record the number of nests predated.

Classroom Activity

ACTIVITY 1

(1) Write a short reflection piece on what you observed during data collection for the National Nest Predation Survey. Comment on how your findings and involvement in the survey made you feel.



ACTIVITY 2 - *If a wildlife camera was deployed.*

(2A) Sort through the photos from the wildlife camera.

(2B) Record the number of day/nights at least one fox was seen on camera.

(2C) Record the number of day/nights other animals (i.e. ravens, kangaroos etc) were seen on camera.

Australian Curriculum addressed in this Lesson



Science

Strand: Science inquiry (Year 5)

Sub-strand: Planning and conducting

AC9S5I03: use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriate.

Strand: Science inquiry (Year 6)

Sub-strand: Planning and conducting

AC9S6I03: use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriate.



Mathematics

Strand: Statistics (Year 5)

AC9M5ST03: plan and conduct statistical investigations by posing questions or identifying a problem and collecting relevant data; choose appropriate displays and interpret the data; communicate findings within the context of the investigation.

Strand: Statistics (Year 6)

AC9M6ST03: plan and conduct statistical investigations by posing and refining questions or identifying a problem and collecting relevant data; analyse and interpret the data and communicate findings within the context of the investigation.

TURTLESAT LESSONS

TERM TWO

UPLOADING NNPS DATA TO TURTLESAT

- Learning Intentions
- Background
- Activities
- Curriculum Mapping

Photo credit: Marilyn Connell



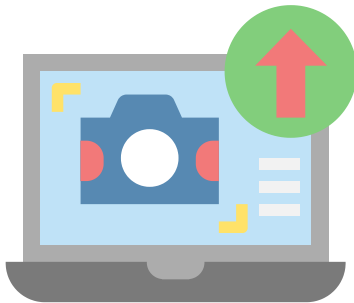
Learning Intentions

(1) Upload the data collected from the National Nest Predation Survey to TurtleSAT;

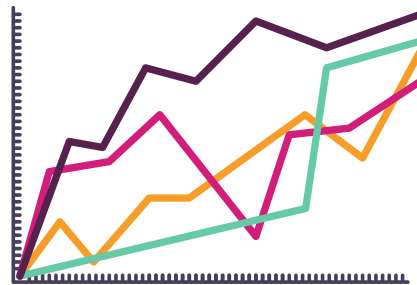
(2) Graph dependent and independent variables in a line graph and discuss the relationship between the two;

(3) Interpret findings from the National Nest Predation Survey data;

(4) Appreciate the role citizen scientists and apps play in collecting broad-scale scientific data and how this data can be used by researchers, stakeholders and policy makers in decision making around conservation policies and environmental management.



Upload



Graph

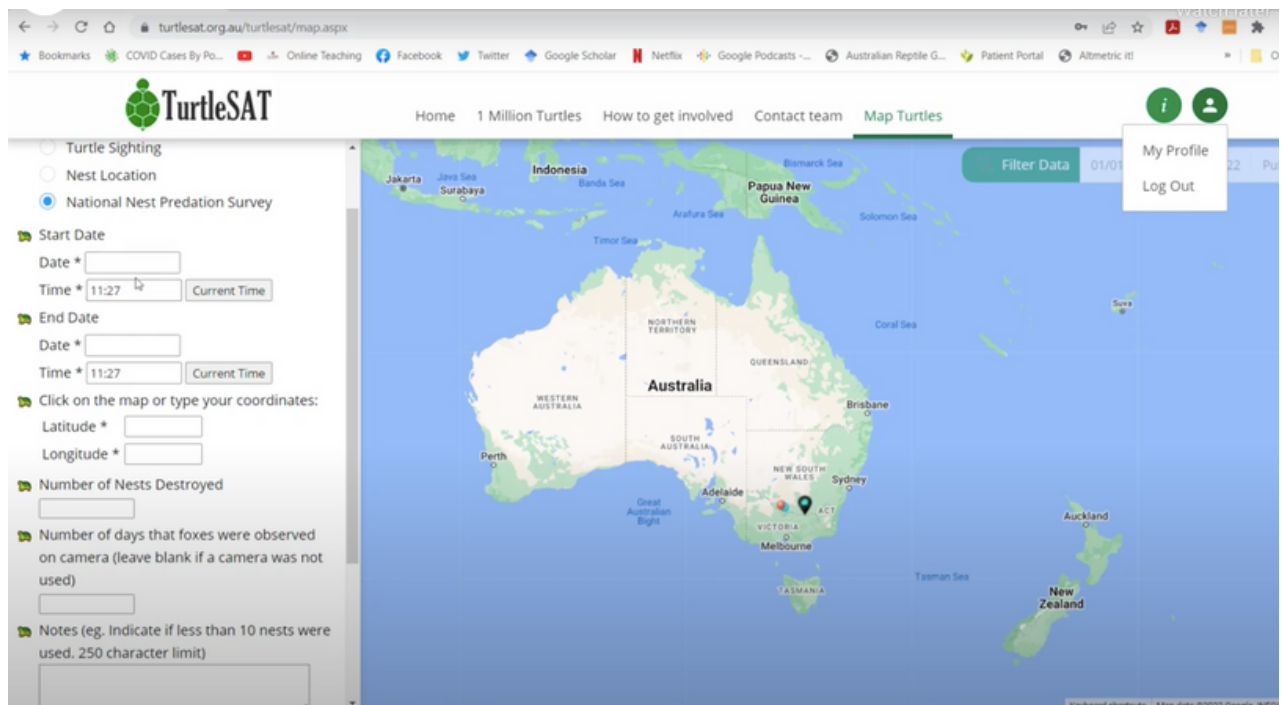


Appreciate

Background Information

Uploading NNPS Data to TurtleSAT

Citizen scientists like you have been collecting valuable data on nest predation rates through the NNPS. By uploading your data to TurtleSAT you contribute to a broader database used by researchers, conservationists, and policymakers to inform conservation strategies and management decisions. Your efforts play a crucial role in enhancing our understanding of turtle populations and ecosystems.



The screenshot shows the TurtleSAT web application interface. The browser address bar displays `turtlesat.org.au/turtlesat/map.aspx`. The page features a navigation menu with links for Home, 1 Million Turtles, How to get involved, Contact team, and Map Turtles. A user profile dropdown menu is visible in the top right corner, containing options for My Profile and Log Out. The main content area is a map of Australia and surrounding regions, including Indonesia, Papua New Guinea, and New Zealand. The map is overlaid with a grid and shows various geographical features and cities. On the left side, there is a form for uploading data, which includes the following fields and options:

- Turtle Sighting
- Nest Location
- National Nest Predation Survey
- Start Date
 - Date *
 - Time *
- End Date
 - Date *
 - Time *
- Click on the map or type your coordinates:
 - Latitude *
 - Longitude *
- Number of Nests Destroyed
- Number of days that foxes were observed on camera (leave blank if a camera was not used)
- Notes (eg. Indicate if less than 10 nests were used. 250 character limit)

Background Information

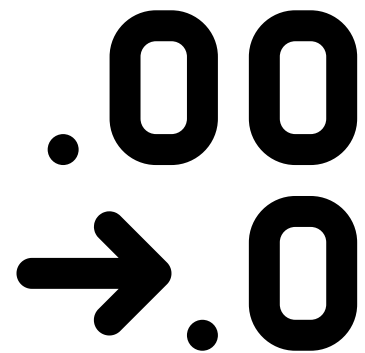
Fractions, decimals and percentages

In science, we often use fractions, decimals, and percentages to describe parts of a whole or compare quantities. These mathematical tools help us analyse data, interpret results, and draw conclusions from experiments and observations.

Fractions in Science: In science, fractions are used to represent parts of a whole or parts of a group. For example, if we have a total of 10 turtle nests and 3 of them are predated, we can write this as $3/10$. This fraction tells us that 3 out of the total 10 nests were predated.



Decimals in Science: Decimals are another way to express parts of a whole in science. They are used when we need to be more precise about measurements or quantities. Decimals are useful for recording and comparing measurements in experiments, such as measuring lengths, volumes, or weights of substances.



Percentages in Science: Percentages are widely used in science to show proportions. For example, if we conduct the NNPS experiment with 100 fake nests, and find that 75 out of 100 nests were predated, we can say that the nest predation rate is 75%. Percentages are essential for interpreting results, communicating findings, and making comparisons in scientific studies and experiments.



Background Information

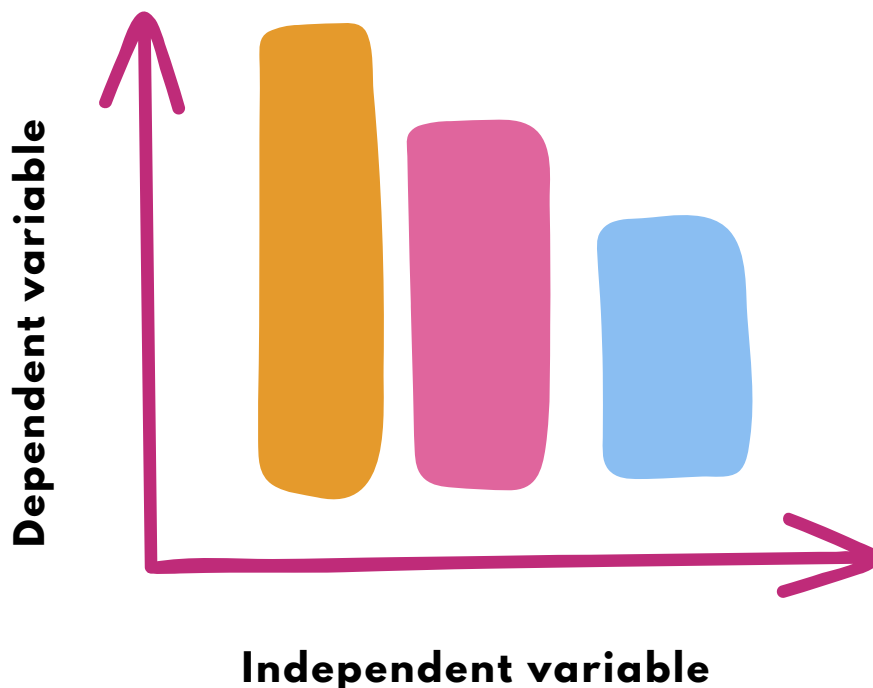
Variables

A variable is something that can change or vary in an experiment or investigation. It's like a piece of the puzzle that can be different from one situation to another. Scientists use variables to understand how things work and to solve problems.

There are two main types of variables: independent variables and dependent variables.

Independent variable: *a variable that is unchanged by other variables being measured.*

Dependent variable: *the variable that changes as a result of the independent variable.*



Classroom Activities



ACTIVITY 1

(1A) In the worksheet below, calculate the number of nests destroyed and write each as a fraction, decimal and percentage.

(1B) Fill in the blank box with your nest predation data. Write the value as a fraction, decimal and percentage.

ACTIVITY 2

(2A) Watch the following video on how to enter data from the NNPS into TurtleSAT.

Link to video: [<https://www.youtube.com/watch?v=v8xerXL-v3A&t=182s>]
(Copy and paste into browser)

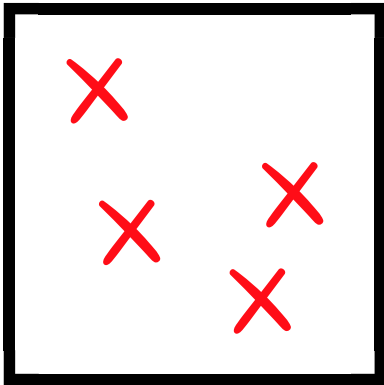
(2B) Enter your data from the NNPS into TurtleSAT. Check your data to ensure you have documented the following, as per the NNPS guidelines:

- a. Number of nests destroyed
- b. Number of nights that the camera was deployed (if you used a camera)
- c. Number of day/nights that at least one fox was observed on camera
- d. Dates when you started and ended the survey
- e. Location (your GPS coordinates) or you can tap on the site location on the TurtleSAT map.



Percentage of Nests Destroyed

Calculate the number of nests predated (X) in the plots below and write the value as a fraction, decimal and percentage. Assume each plot started with 10 nests. The first has been started for you.

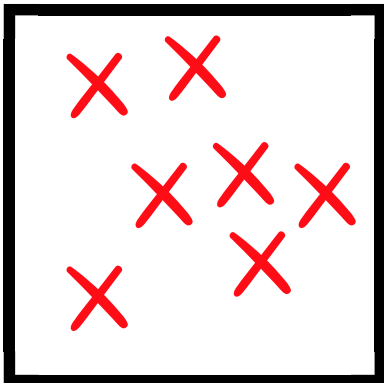


Fraction

$$\frac{4}{10}$$

Decimal

Percentage

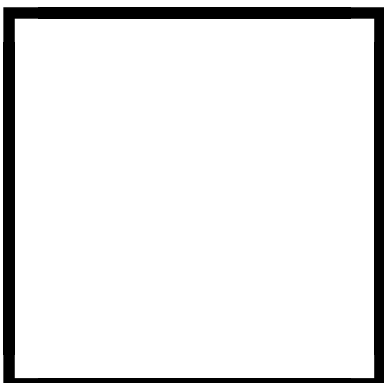


Fraction

Decimal

Percentage

In the box below, plot your nest predation data from the NNPS. Write the value as a fraction, decimal and percentage.



Fraction

Decimal

Percentage

Classroom Activities

ACTIVITY 3

(3A) Identify independent and dependent variables from the NNPS.

(3B) In the worksheet, graph the number of foxes and the nest predation rate.

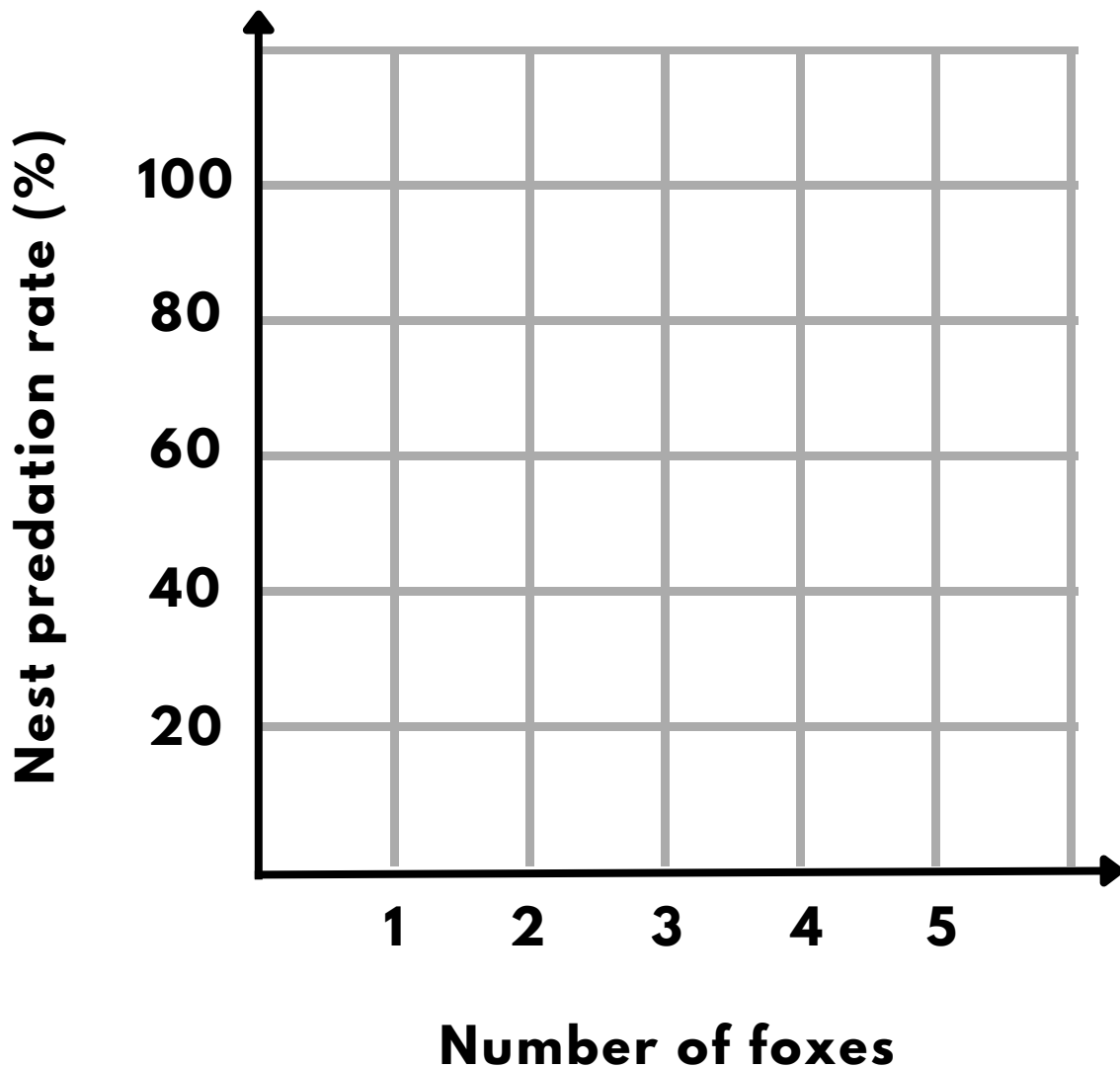
(3C) Interpret the line graph. Describe what the trend of the line means in the context of freshwater turtle nests and fox predation.



Graphing Data

Below is nest predation data. Draw a line graph of the data.

Number of foxes	1	2	3	4	5
Nest predation rate (%)	50	90	100	95	100



Classroom Activities

ACTIVITY

What I Know (K), What I Want to Know (W), What I Learnt (L)

Materials:

- Large chart paper divided into 3 sections labeled "K" (Know), "W" (Want to Know), and "L" (Learnt).
- Markers or pens

Instructions:

(1A) Revisit your Know, Want to Know and Learnt chart and complete the Learnt (L) column.

What I Know
(K)



Want to Know
(W)



What I Learnt
(L)



Word Search

G N X R E V X G M W D L G N Y S K G Y D M I D I Y
J F H A U O N T C G K I R A I N P Q W H N T Z Q C
Q E P B R D F E R E Y F Y P P W E T L A N D R Z Z
H M R I O W X P S A Q O K Y X E V L H T I V I W O
E Q N O P U F O D T N F O T I J Q B E C G D P U L
R P P T E C R K F B C S M A B S Z I P H E I A F S
B L T I A N E B F Q O H E E Q A D K N L E S R Z C
I A U C N Y S S A C K W A C R Z S L A I V T I F A
V S R Y F K H M U N N O B M T V O K Y N V R A D V
O T T J O C W F N Q I E C E B A T L I G F I N N E
R R L O X L A T A H W S S Q U E N V Q N B B D W N
E O E B E I T A P Q Y C A T P I R S Y T G U Y E G
T N Y I S M E U B A U L B T P J N C Z R H T J B E
O C R O R A R M Q U E A X Z I R I I U I S I U B R
S D H T P T C E I W N C T N B O E X L P J O I E D
U E P I Q E A L U T W D T I L T N D B E X N H D G
G L C C I C R Q H Q I C A O C C O S A A A M C F N
Y F A B I H N J E W C G O N T A R U K T X P Y E J
W L R U E A I J I K I Y A E C H D Y M I I X X E L
N O A Y I N V P R D O T U T B E E P K W K O L T T
A R P Q F G O S P I S I F Z I I W R X C K G N P E
K A A N W E R R Y C B B S U G O J A M Z H N T O B
M T C W G A E E T P U L X W I P N W A I Q G E A H
I Z E O L J I Q P O L L U T I O N K O L C Q J K T
V H D L H B T H R E A T T M S R K U E N F I L B E

European foxes
Ectothermic
Climate change
Freshwater
Nest predation
Distribution
Urbanisation
Flora
Nest chamber

Mitigation
Webbed feet
Pollution
Hatchling
Abundance
Riparian
Scavenger
Carapace
Transect
Fauna

Carnivore
Wetland
Plastron
Herbivore
Aquatic
Basking
Biotic
Threat
Abiotic
Turtle

Australian Curriculum addressed in this Lesson



Science

Strand: Science inquiry (Year 5)

Sub-strand: Processing, modelling and analysing

AC9S5I04: construct and use appropriate representations, including tables, graphs and visual or physical models, to organise and process data and information and describe patterns, trends and relationships.

Sub-strand: Evaluating

AC9S5I05: compare methods and findings with those of others, recognise possible sources of error, pose questions for further investigation and select evidence to draw reasoned conclusions.

Strand: Science inquiry (Year 6)

Sub-strand: Processing, modelling and analysing

AC9S6I04: construct and use appropriate representations, including tables, graphs and visual or physical models, to organise and process data and information and describe patterns, trends and relationships.

Sub-strand: Evaluating

AC9S6I05: compare methods and findings with those of others, recognise possible sources of error, pose questions for further investigation and select evidence to draw reasoned conclusions.

Australian Curriculum addressed in this Lesson



Strand: Statistics (Year 5)

AC9M5ST02: interpret line graphs representing change over time; discuss the relationships that are represented and conclusions that can be made.

Strand: Statistics (Year 6)

AC9M6ST01: interpret and compare data sets for ordinal and nominal categorical, discrete and continuous numerical variables using comparative displays or visualisations and digital tools; compare distributions in terms of mode, range and shape.