

Term 1, Lesson 5

Freshwater Turtles

Learning Objectives:

1. Describe a freshwater turtle;
2. Identify the morphology of a freshwater turtle;
3. Identify habitats used by freshwater turtles;
4. Recognise the role of freshwater turtles in the ecosystem.



Australian Freshwater Turtles

Freshwater turtles are a diverse group of reptiles that are adapted to aquatic habitats, such as rivers, lakes, wetlands and ponds.

Australia is home to 25 species of freshwater turtle, with all but one belonging to the Chelidae family.



Photo credit (L to R): Dr. James Van Dyke, Dr. Kristen Petrov & unknown user TurtleSAT

Freshwater turtle morphology

Shell - freshwater turtles have a protective shell that consists of two main parts: the carapace (top of the shell) and the plastron (underside of the shell).

The outer surface of the shell is covered with scutes which protect the underlying bone. Scutes are made of keratin.



Photo credit: Dr. Anthony Santoro

Freshwater turtle morphology

Head - the structure of the mouth and jaws typically reflects the turtles diet.

Carnivorous species have sharp pointed jaws while herbivorous species may have more beak-like mouths. Turtles lack teeth but have powerful jaw muscles that aid in grasping and processing food.

Eyes and nostrils - eyes are positioned on the side of their head. Nostrils are located on top of the snout.



Photo credit: Dr. Kristen Petrov

Freshwater turtle morphology

Neck - the length of the neck varies among species. Some species have short necks, while others have exceptionally long necks that can extend sideways.



Limbs- four limbs, each equipped with webbed feet. Limbs can partially or fully retract into the shell.



Photo credit:
Sue Harper (top),
Dr. James Van
Dyke (bottom)

Freshwater turtle habitat use

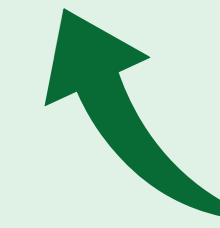
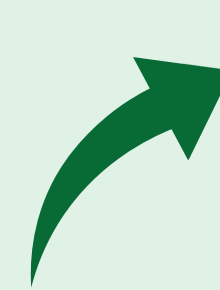
Freshwater turtles rely on both aquatic and riparian habitats. Freshwater turtles use the aquatic habitat for swimming, basking, feeding and shelter.

Freshwater turtles are ectothermic which means they rely on external sources of heat to regulate their body temperature. Freshwater turtles nest in the riparian habitat and typically lay their eggs in areas with loose, sandy soil with minimal vegetation cover.



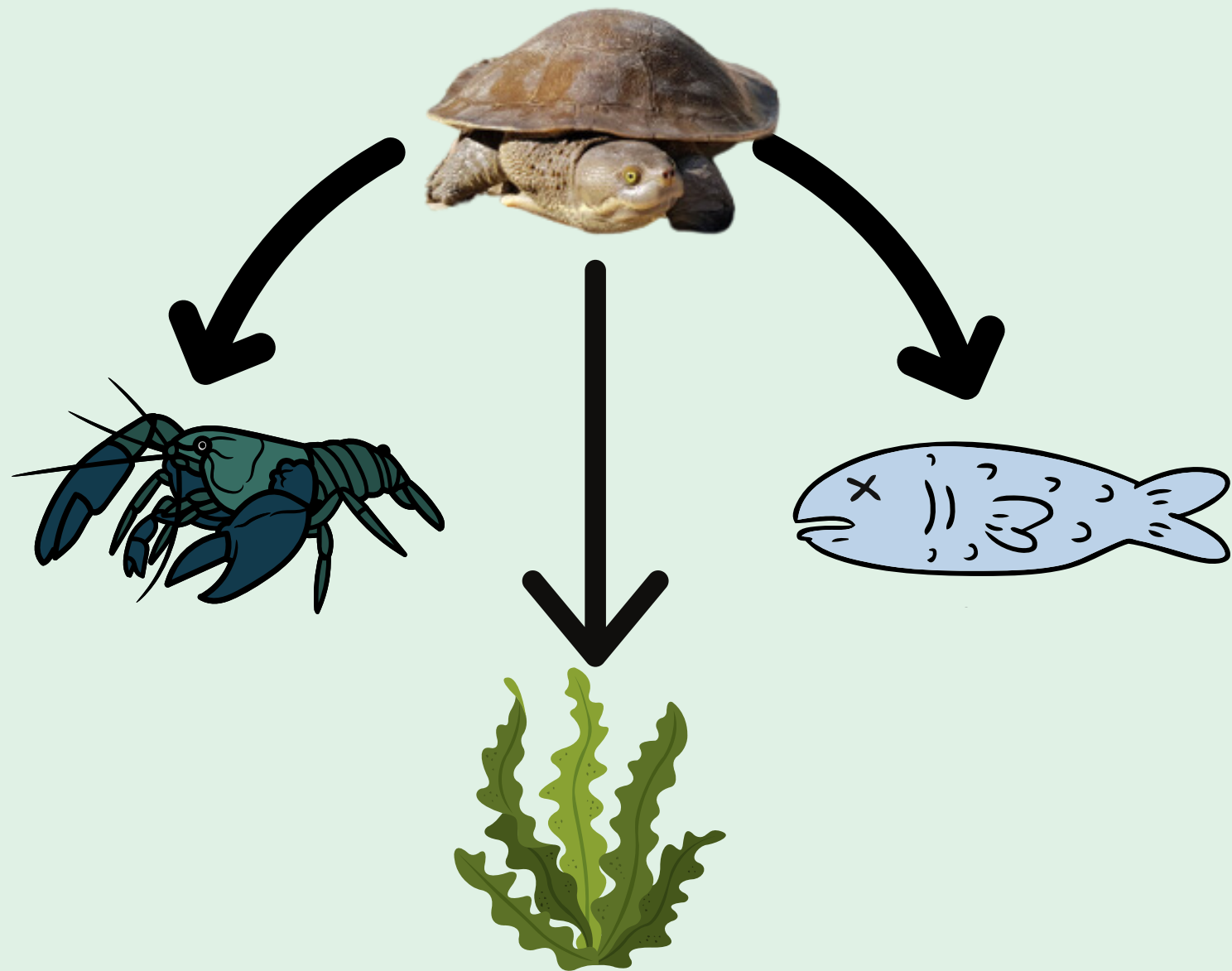
Lifecycle of Freshwater Turtles

Female turtles leave the water to lay their eggs. Females select areas with loose, sandy soil and minimal vegetation cover. Females dig a nest chamber with their hind legs and deposit their eggs inside. They bury their eggs, leaving them to incubate underground. The incubation period varies among species but usually lasts 2-3 months. After nesting, females return back to the water. When incubation is complete, the eggs hatch and hatchlings emerge from the nest.



Ecological role of freshwater turtles

Turtles fill multiple ecological roles in the food web - they may be herbivores, mesocarnivores, top predators and scavengers.



Freshwater turtles are often referred to as the “vacuum cleaners” of the river as they feed on carrion (dead animal matter) and help to mitigate the effect of animal decomposition.

Invasive freshwater turtle species

- The Red-eared slider is a species of freshwater turtle native to the midwestern states of the USA and northeastern Mexico.
- It is widely kept as a pet and has been introduced to many countries outside its native range.
- The IUCN identifies it as one of the ‘world’s worst invasive alien species’.
- The Red-eared slider is a threat to native freshwater turtle species. It is an aggressive species and competes with native species for food, basking habitats and nesting sites.



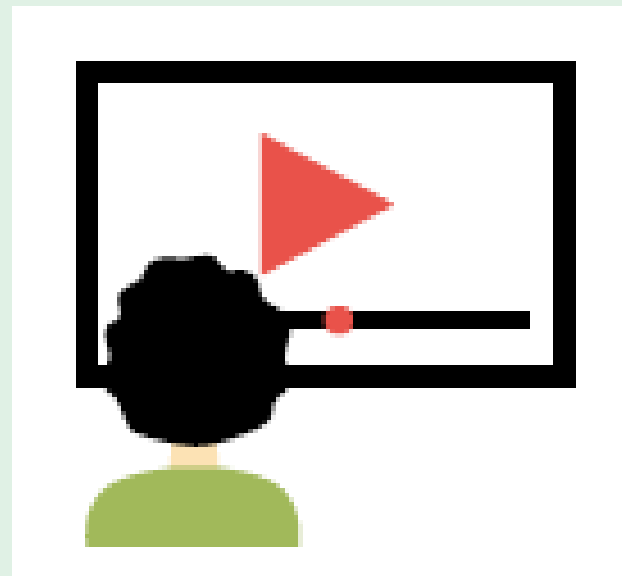
Classroom Activities

Activity 1 -

Classroom discussion about freshwater turtles.

Video: Freshwater turtles

<https://www.youtube.com/watch?v=-w6KueWTR-8>



Classroom Activities

Activity 2 -

- In groups, research an Australian freshwater turtle species.
- Collate information relating to the species morphology, distribution, habitat preferences and reproduction.
- Present your findings as a poster and share the information with the class.





Oblong turtle, *Chelodina oblonga*
Photo credit: Dr. Anthony Santoro



Macquarie River turtle, *Emydura macquarii*
Photo credit: Dr. James Van Dyke



Bellinger River turtle, *Myuchelys georgesii*
Photo credit: Dr. Kristen Petrov



Mary River turtle, *Elusor macrurus*
Photo credit: Marilyn Connell



Pig-nose turtle, *Carettochelys insculpta*
Photo credit: John Cann

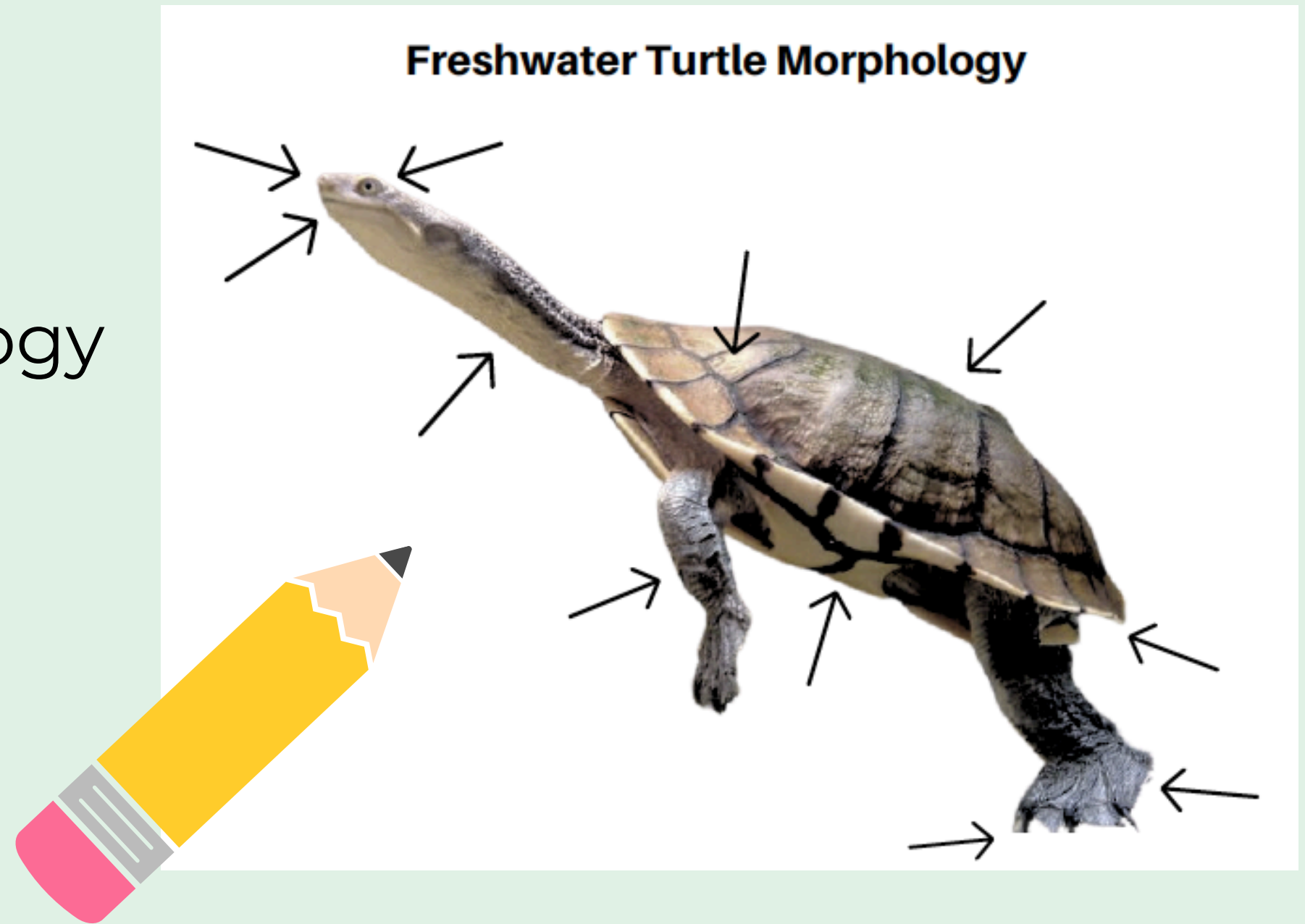


Eastern long-neck turtle, *Chelodina longicollis*
Photo credit: Prof. Arthur Georges

Classroom Activities

Activity 3 -

- Label the morphological characteristics of freshwater turtles in the Turtle Morphology Handout.



Classroom Activities

Activity 4 -

- Create your own freshwater turtle using paper mache.
- Incorporate the morphological features you have learnt about into your turtle design.

