

Lesson plan

From Sand to Surf – understanding turtle life cycles

Lesson time: 60 minutes	Target year level: 4
Learning intentions	Curriculum links
<ul style="list-style-type: none"> Describe characteristics of the six marine turtle species found in Australia. Understand the key words used to describe turtle life cycles. Create a model and explain the life cycle for flatback turtles. 	<ul style="list-style-type: none"> Living things have life cycles. Living things depend on each other and the environment to survive. Science involves making predictions and describing patterns and relationships. Science knowledge helps people to understand the effect of their actions. Represent and communicate observations, ideas and findings using formal and informal representations.
Learning resources	Other equipment required/notes
<ul style="list-style-type: none"> NWSFTCP From Sand to Surf PPT Turtle Life Cycle worksheet – Reproduction stage Turtle Life Cycle worksheet – Hatchling stage 	<ul style="list-style-type: none">

Lesson overview and background

Background: The North West Shelf Flatback Turtle Conservation Program undertakes research focused on marine turtle biology and threats. This research drives conservation management decisions made by the Department of Biodiversity, Conservation and Attractions and other government and industry organisations. A key component of early research was to understand the life cycle of the flatback turtle so we know what key times they need protection and their threats.

This lesson is structured using an **Explicit Teaching model**, whereby the teacher clearly leads students to their new understanding of the terminology and life cycle using the prompts and videos in the resources.

It will take one lesson to complete the terminology worksheets with the students, with the option to use this lesson to begin a project where students build their own turtle life cycle models or create drawings to elaborate their understanding.

Learning activities and strategies

Phase Timing	Suggested activity and strategies	Resources or equipment
Hook (2 min)	What do you know? Pair, share <ul style="list-style-type: none"> Ask students to take turns telling their partner what they know about turtles already. Follow with a brief call around the class to share. 	<ul style="list-style-type: none"> 'NWSFTCP From Sand to Surf PPT' (slides 1 – 5)
(8 min)	Species of marine turtles in Australia (optional for context) <ul style="list-style-type: none"> Hand out "marine turtle ID cards" to groups of students. Ask students to identify a characteristic for each species that helps you tell them apart from the others. As you reveal the name of each species, ask students to share the characteristic they noticed about that species. 	<ul style="list-style-type: none"> Turtle ID cards
Key words	Explicit teaching – key words (reproduction) <ul style="list-style-type: none"> Point out that all of the turtles are on the beach in the photos on slide 5. Prompt: "Why are they on the beach 	<ul style="list-style-type: none"> 'NWSFTCP From Sand to

(15 min)	<p>and not in the ocean?” (they are nesting – part of the turtle life cycle)</p> <ul style="list-style-type: none"> Hand out worksheet – ‘Turtle life cycle - Reproduction Stage’ and introduce activity: <ul style="list-style-type: none"> The life cycle you are teaching about is for flatback turtles, because they are the special Australian turtle. You will play a video and explain what each key word means. Students will either draw a diagram to represent each key word, or write a short sentence. Play video on slide 7 (1 min) which demonstrates each stage of nesting. Explicitly teach the meaning of each word on the worksheet on slide 8 (bolded): <ul style="list-style-type: none"> Rookery: A beach where there is nesting. Clutch: All of the eggs in each nest (50 – 70). Nest Chamber: The hole 50cm deep that the eggs are laid in. Internesting habitat: Where turtles go in the ocean between their nesting (two or three times per season). Nesting: The process of digging an egg chamber, laying eggs, and then covering the nest in the sand. 	Surf PPT’ (slides 5 - 9)
(15 min)	<p>Key words</p> <p>Explicit teaching – key words (hatchlings)</p> <ul style="list-style-type: none"> Hand out worksheet – ‘Turtle life cycle - Hatchling Stage’ Play video on slide 10 which shows hatchlings emerging from a nest. Explicitly teach the meaning of each word on the worksheet on slide 11 (bolded): <ul style="list-style-type: none"> Incubate: When the eggs develop an embryo inside. The temperature in the nest changes whether they will be male or female. Hatchling: The stage when the embryo is fully developed and breaks out of its shell. Emergence: When the hatchlings break out of the egg and dig their way out of the nest. Predators: Another animal that will eat the hatchlings. Sand-to-surf: Hatchlings moving from their nest to the ocean. Play video on slide 12 to demonstrate predation of hatchlings making their way from “sand-to-surf”. 	<ul style="list-style-type: none"> ‘NWSFTCP From Sand to Surf PPT’ (slides 10 - 12)
(10 min)	<p>Game</p> <p>Hatchling Hustle!</p> <ul style="list-style-type: none"> Clear the room or take students outside. Choose one student to be the “sea gull” who stands at one end of the playing field, facing away. All other students are “hatchlings” who need to crawl or stay low and move their way from the “nest” (start) to the “ocean” (line where the seagull is) without being seen moving by the seagull. 	<ul style="list-style-type: none"> ‘NWSFTCP From Sand to Surf PPT’ (slide 13)

	<ul style="list-style-type: none"> When the seagull turns around, the hatchlings need to STOP. If the seagull sees a hatchling move, they have to start again. 	
Key words (8 min)	<p>Explicit teaching – key words (post-hatchling)</p> <ul style="list-style-type: none"> Continue working on worksheet – ‘Turtle life cycle - Hatchling Stage’ Explicitly teach the meaning of each word on the worksheet on slides 14 - 16: <ul style="list-style-type: none"> Juveniles (child): The stage of life the first few years after hatching, up until they are about 50cm shell length. This is about 4 – 6 years. Sub-adult (teenager): The stage of life when a turtle is between 50 cm long and 80 cm long, called the “lost years” as they swim very far out in the ocean and are often not seen. Adult: When turtles are of reproductive age about 16 – 24 years old and they return to the beaches to nest, beginning the life cycle again. They might nest for 50 years! Play video on slide 17 to demonstrate the behaviours of adult turtles when they’re in the water. 	<ul style="list-style-type: none"> ‘NWSFTCP From Sand to Surf PPT’ (slides 14 - 16)
Review (2 min)	<p>Review</p> <ul style="list-style-type: none"> Show key words on slides 18 and 19 from worksheets and use random questioning techniques to assess student understanding. 	<ul style="list-style-type: none"> ‘NWSFTCP From Sand to Surf PPT’ (slides 18 - 19)