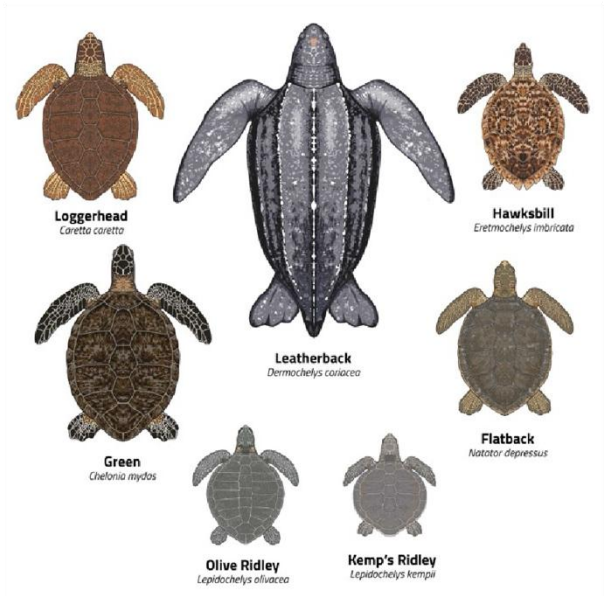
WILDTRUST™



SEA TURTLES

SESSION PACK

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MATERIALS REQUIRED FOR SESSION

- Paper
- Colouring pencils

INFORMATION PAGES: SEA TURTLES

DESCRIPTION:

Sea turtles have roamed the ocean for millions of years. There are seven species of sea turtles in the world, five of which are found in our waters and two of which nest on our beaches namely the leatherback and loggerhead turtles. The green turtle is a non-breeding resident in our waters, while the hawksbill forages in our waters and the olive ridley turtle occurs as vagrant occasional migrating species in our waters. The flatback and Kemp's ridley turtles are not found in SA waters.

CHARACTERISTICS:

The leather back turtles favorite food is a jellyfish, and like all turtles, the leatherback has no teeth. It uses it's strong, sharp beak to catch its food. They often mistake plastic packets in the water as their food, and this has contributed to their massive decline in numbers.

The loggerhead is named for its large head with strong jaws used for crushing its favorite food which includes crabs, bivalves, and conch shells. They also eat fish, algae and jellyfish.

Green turtles are the only herbivorous species of sea turtle. Their diet mainly consists of algae and seagrasses, though they may also forage on sponges, invertebrates, and discarded fish.

FACTS:

- Turtles spend almost their entire lives in the ocean. It is only adult females that leave the water and crawl up onto the beach to lay their eggs during the nesting season, which in South Africa falls over summer months from October to January.
- At iSimangiliso wetland park there are two species that nest on the beaches, the loggerhead and leatherback turtles.
- The adult female turtles, eggs and hatchlings are the most vulnerable over the nesting season.
- The female turtles lay eggs which are wet and pliable, about the size of a ping pong ball. Female turtles dig deep holes in the sand with their back flippers and then lay and bury their eggs in these holes. The females also make more than one visit to the beach to nest in a single season, sometimes coming back up 8 times per season depending on the species. So, several hundred eggs may be laid in a single season. Once the eggs are buried and the nest is camouflaged in the sand, the female returns to the sea.

- The eggs remain hidden in the nest for about 2 months during which time they are vulnerable to predation from crabs, red ants, feral dogs, honey badgers and humans called ‘poachers’, although nests on South African beaches are well protected.
- It is the temperature of the nests that determines the sex of the hatchlings (baby turtles). The warmer the nest, the more girls will hatch and when the nest is cooler, more boys will hatch.
- The eggs which survive will hatch and the baby turtles dig their way up through the sand and crawl down the beach to go out to the sea. You can witness this at iSimangaliso from Jan to March.
- The hatchlings' journey across the sand is dangerous as they are predated by crabs, red ants and sea birds. Once they make it to the water their struggle is not over as fish, sharks and sea birds find them to be a tasty snack.
- Other threats they face in the ocean include nets, oil spills and boats. Only about 5% of sea turtles survive the first year in the ocean. It takes about 20 years before they mature and can reproduce, depending on the species.
- Humans contribute to the death of turtles for several reasons including: disruption of nesting sites by vehicles, specimen hunters, beach development, fishing nets, food source, pollution, products (leather, jewellery) etc.
- The leatherback turtle does not have a hard top shell but instead has thick leathery skin with seven long ridges hence the name. They are the largest sea turtle species, with adults weighing up to 900kg and growing up to 2 m and can live for over 50 years. They are super swimmers and can reach depths of a 1000m easily.
- The loggerhead turtle is much smaller than the leatherback and has a hard shell, like all other sea turtle species besides the leatherback. Adult loggerheads usually weigh about 80-100 kgs and are just under 1 m in length.
- Our leatherback turtles are Critically Endangered, and our loggerhead turtles are Near Threatened on the IUCN Red List of Threatened Species. Globally, South Africa has the second longest running beach turtle monitoring programme to help protect them. There are about 70 female leatherback turtles and over 1000 female loggerhead turtles nesting in the iSimangaliso Wetland Park annually. Due to conservation efforts the loggerhead population have made a successful recovery.

SESSION PLAN: SEA TURTLES

SESSION OBJECTIVES:

Learners able to identify specific mortality factors related to sea turtles and make inferences about the effects of limiting factors on sea turtle populations.

INTRODUCTION ACTIVITY:

- Play the Turtle True and False game *(see GAMES provided below)*
- Present the five species of sea turtles found along the South African coast *(see PRESENTATION poster provided below)* and see if the learners can spot any differences in the species.

MAIN ACTIVITY:

- Play the Turtle Hurdle game *(see GAMES provided below)*
- After playing the game have the learners write a diary entry from the viewpoint of a turtle, explaining the dangers he / she faces, the learners can include drawings in the diary entry.

CLOSING ACTIVITY:

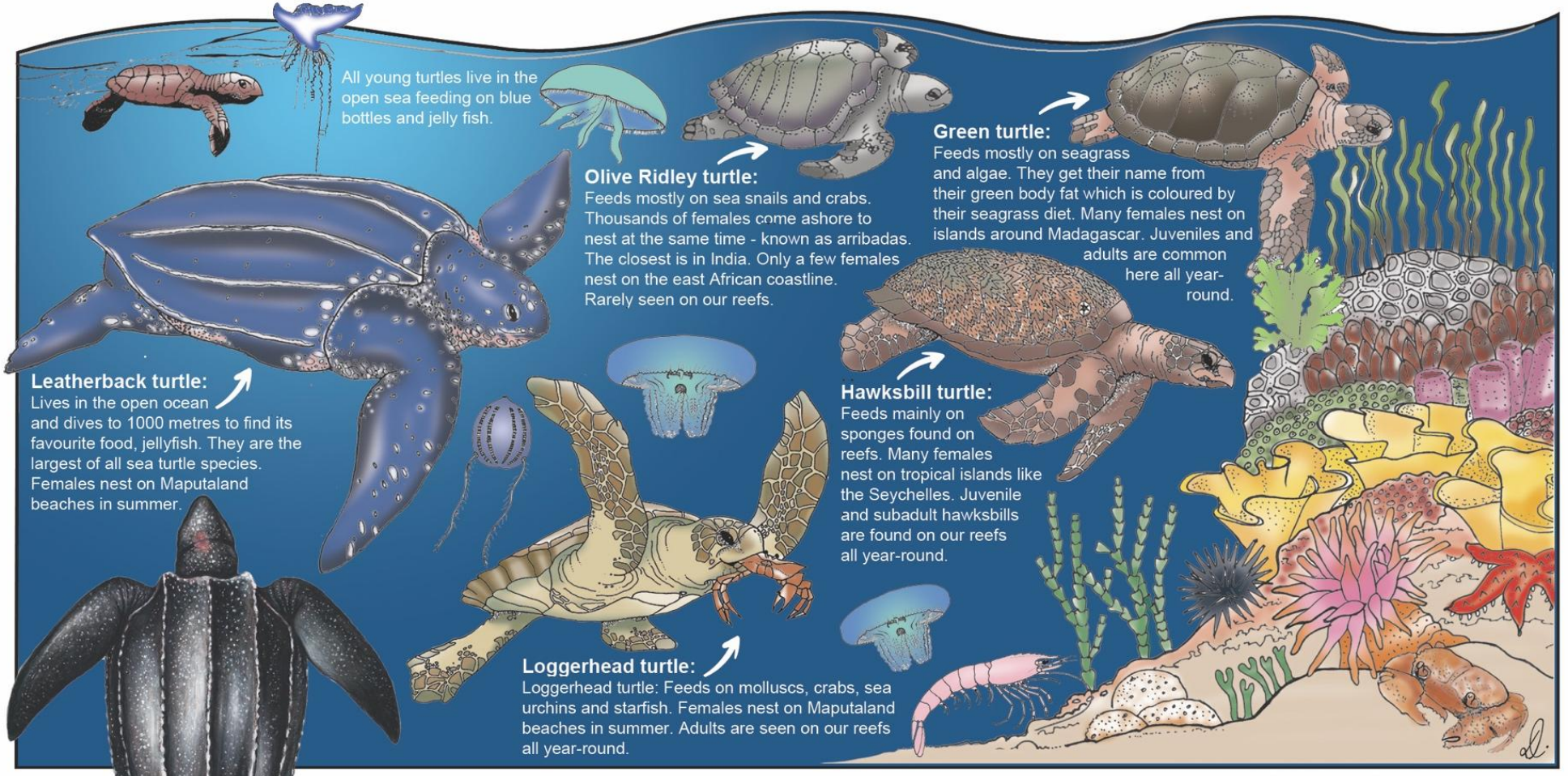
- Provide each learner with a printed copy of the ‘’five species of sea turtles along the South African coast’’ activity sheet (see ACTVITY sheet provided below) to read, colour-in and keep.

FOLLOW UP SUGGESTIONS:

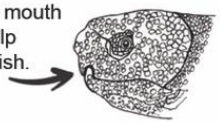
- Learners expand on their turtle dairy to include recommendations for ways to minimize the factors which contribute to the possible extinction of sea turtles

PRESENTATION POSTER:

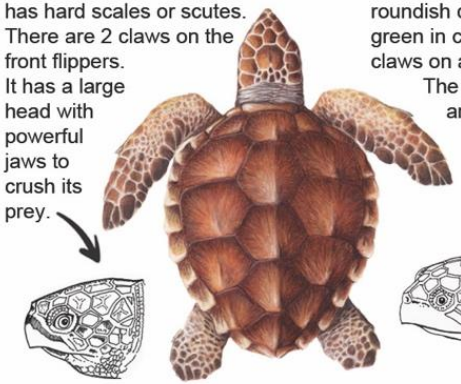
Five Species of Sea Turtle are Found Along the South African Coast



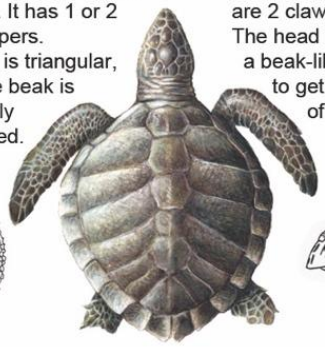
The **leatherback turtle** has a leathery carapace with no scales. There are 5 ridges down its back. The head is large with two fang-like cusps in the upper jaw and a sharp point on the lower jaw. Spines in the mouth and throat help swallow jellyfish.



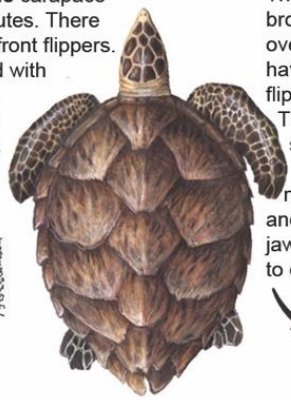
The **loggerhead turtle** carapace has hard scales or scutes. There are 2 claws on the front flippers. It has a large head with powerful jaws to crush its prey.



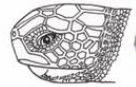
The **Olive Ridley turtle** has a roundish carapace that is olive green in colour. It has 1 or 2 claws on all flippers. The head is triangular, and the beak is slightly hooked.

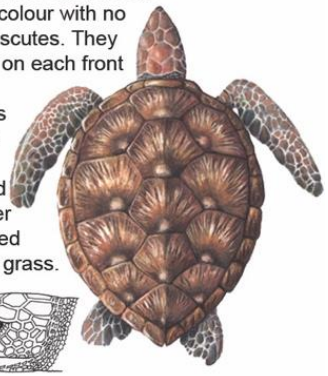


The **hawksbill turtle** carapace has overlapping scutes. There are 2 claws on the front flippers. The head is pointed with a beak-like mouth to get food out of crevices.



The **green turtle** carapace is brownish in colour with no overlapping scutes. They have 1 claw on each front flipper. The head is small, the beak is not hooked and the lower jaw is serrated to chew sea grass.





GAMES: SEA TURTLES TRUE AND FALSE

How to play the game:

1. Have the learners stand in the middle of the field or classroom
2. Explain that the one side of the field / classroom is False and the opposite side True
3. Read out a Question to the learners, if the learners think the answer is True then they run to the True side and if they think it is False then they go to the false side.
4. Once all the learners have decided then you can provide the correct answer and discuss it briefly
5. Have the learners keep their own score in the game for correct answers

Questions and answers

1) There are 10 different types of turtle species in the world.
   - False - There are 7 different types of turtle species
2) Of the 7 turtle species – 5 species occur in South Africa's waters
   - True - Namely: Leatherback, Loggerhead, Green, Hawksbill, Oliver Ridley
3) There are 2 turtle species that nest in South Africa – up on the beaches in iSimangaliso
   - True - Namely: Leatherback and Loggerhead turtles
4) The leatherbacks turtle favourite food is Jellyfish
   - True - Unfortunately turtles often mistake plastic bags for jelly fish and end up eating plastic and can die as a result.
5) Beach driving is band in South Africa
   - True - Only officials with permits can drive on the beach when necessary – beach driving crushes turtle eggs amongst other animals such as crabs etc and is illegal in SA.
6) The Flatback turtle is a non-resident (does not live here all the time) foraging (feeding) species in our waters
   - False - This species does not occur in our waters but both the Green and Hawksbill turtles do occur as foraging species in our water
7) All turtles are herbivores
   - False - Green turtles are the only herbivorous species of sea turtle. Their diet mainly consists of algae and seagrasses, though they may also forage on sponges, invertebrates, and discarded fish
8) When turtles lay their eggs the temperature of the nest determines the sex of the hatchlings (babies)

- True - The warmer the nest, the more girls will hatch and when the nest is cooler, more boys will hatch.

9) Both male and female turtles rest on the beach

- False - Turtles spend almost their entire lives in the ocean. It is only adult females that leave the water and crawl up onto the beach to lay their eggs during the nesting season, which in South Africa falls over summer months from October to January.

GAMES: TURTLE HURDLES

Activity Description:

Learners take on roles of **sea turtles and predators** to explore threats turtles face. Through discussion, students learn about **limiting factors** on turtle populations and discuss **ways to minimize these threats**.

Materials Required:

- Rope (to mark the playing area).
- 10 Turtle cards/tokens per player (or bread tags as substitutes).
- Labels for **limiting factors (e.g., pollution, predators, fishing nets)**.
- 100+ beads or pebbles (representing annual survival).
- 2 containers (for "mortality zones").

Game Setup:

1. **Mark the playing field** with zones:
   - **Nest Zone:** Where turtles hatch.
   - **Beach Zone:** Hatchlings cross to reach the sea.
   - **Sea Zone:** Turtles grow and survive.
   - **Year Zones:** Safe spaces where turtles collect survival beads.
   - **Seagrass Zone:** Safe until turtles reach 5 years old.
   - **Mortality Zones:** Where life tokens are placed when lost.

Game Rules:

- Turtles must **cross the sea** and collect **one survival bead per round**.
- If tagged by a **predator/limiting factor**, they lose a turtle token.
- **Predators must obey rules:**
  - Cannot tag the same turtle twice in a row.
  - Must deposit tokens in the "mortality container" before continuing.
- Turtles that lose **all 10 life tokens "die"** and move to the mortality zone.
- Turtles that collect **10 survival beads "survive"** and return to the nest to reproduce.
- The game ends when all turtles **either survive or die**.

Post-Game Discussion:

- What were the biggest threats?
- How did different predators affect survival rates?

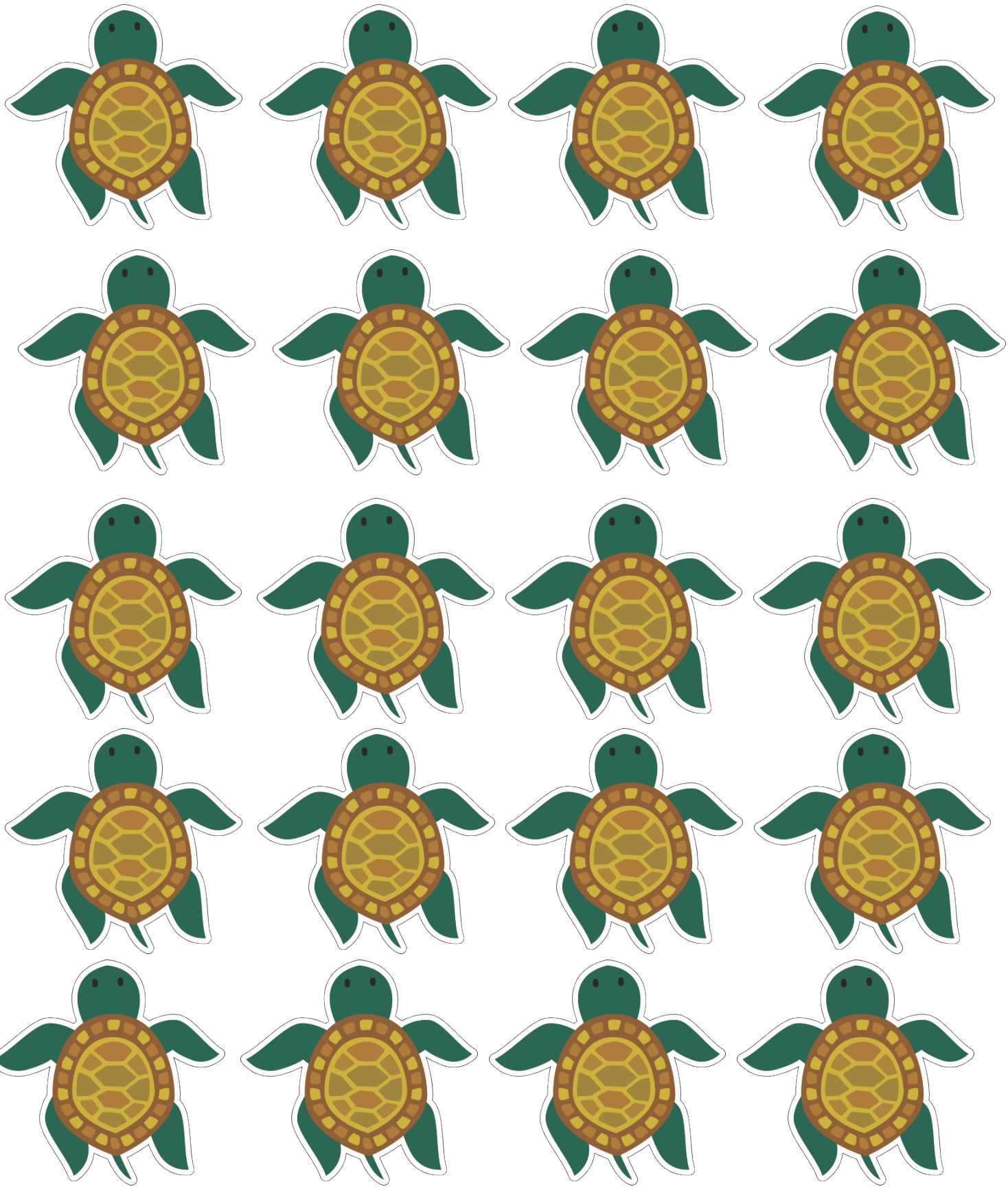
- How do conservation programs help?
- What would happen if all eggs hatched and survived?

BEACH ZONE
YEAR ZONE
YEAR ZONE
Year beads / tokens
Monitored by an adult
SEA ZONE
MORTILITY ZONE
LIMITING FACTOR
LIMITING FACTOR
SEAGRASS
LIMITING FACTOR
LIMITING FACTOR
MORTILITY ZONE
BEACH ZONE
NEST
ZONE
Year beads / tokens
Monitored by an adult

Turtle hurdle game – Limiting factors labels.

SEA BIRD	CRAB
OIL POLLUTION	EGG HARVESTER
SHELL HARVESTER	COMMERCIAL FISHING VESSEL
OTHER MARINE POLLUTION	FISHING LINE
PLASTIC BAG	SHARK

Turtle hurdle game - Turtle cards / tokens – 10 per player



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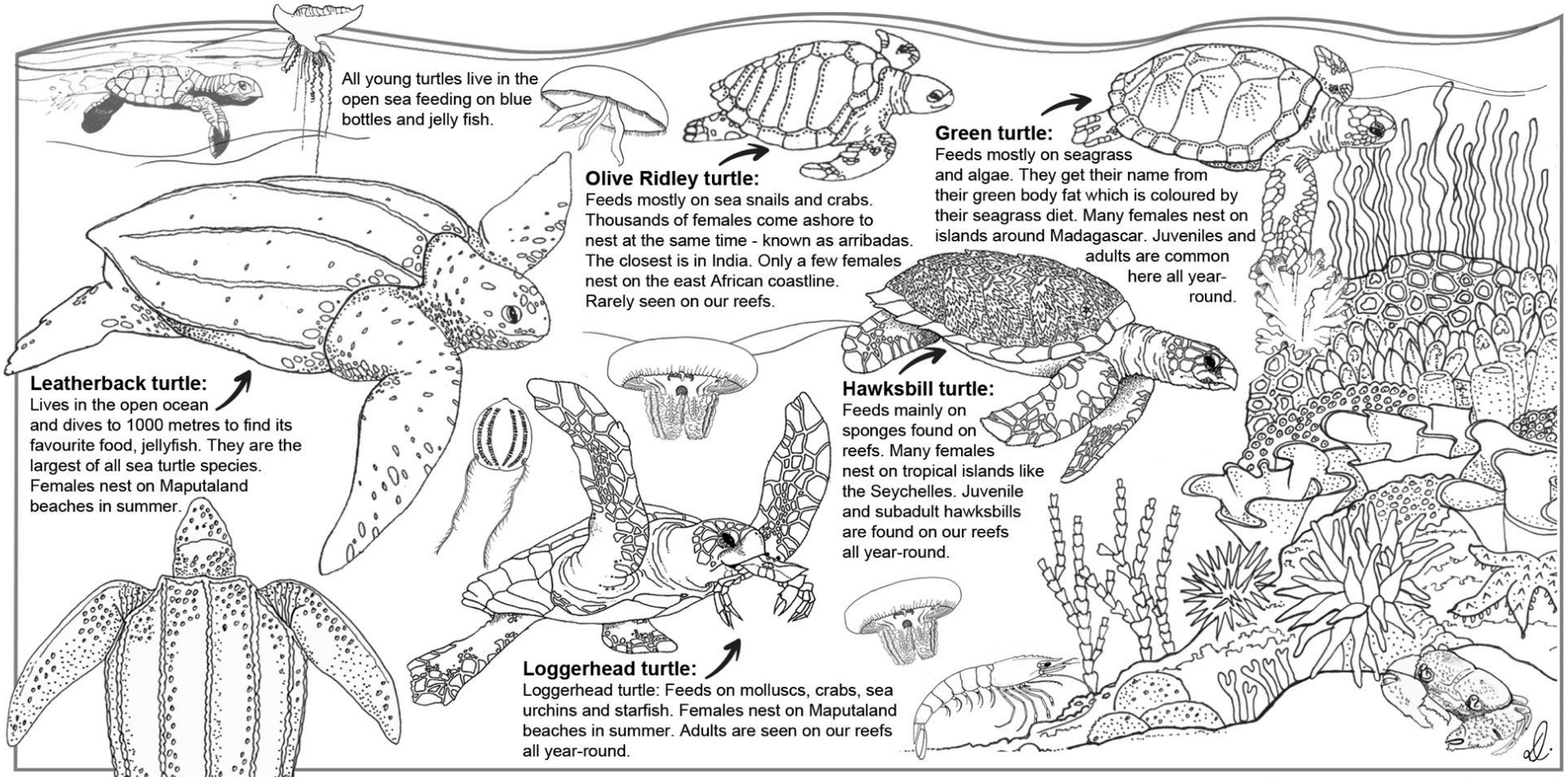

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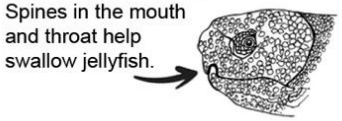

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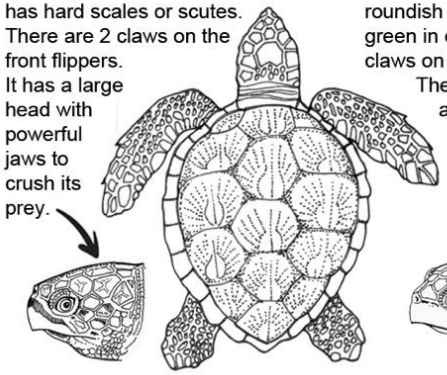

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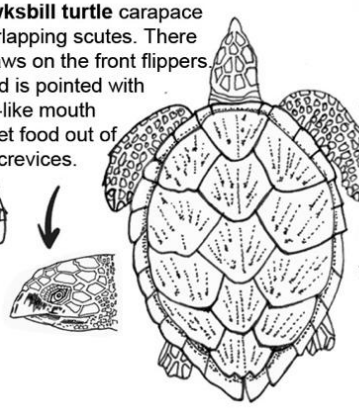

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ANNEXURE 1

Associated session plan breakdown for relevant reading and colouring in pages for “Harry the hammerhead” volume one – uThukela community

Session Title	Harry the Hammerhead Shark Spreads the good news (volume 1) reading page numbers	Colouring in page numbers
Intro to oceans session (pre survey)		None
Harry the Hammerhead session	Read pages 1-32	1, 2 & 3
Coelacanth session	Read pages 1-7	4 & 5
Sea Turtle session	**Read pages 8-11**	**6**
Coral Reefs session	Read pages 12-15	7
What makes uThukela special session	Read pages 16-19	8 & 9
Marine food webs session	Read pages 20-23	10, 11 & 12
Shark session	Read pages 24-27	13 & 14
Whale session	Read pages 28-29	15
Benefits of MPA's session (post survey)	Read pages 30-32	16

ANNEXURE 2

Session plan - Curriculum and Assessment Policy Statement alignment

WILDTRUST Session plan	Section	Grade	Subject	Strand	Topic	Content & Concepts
Sea turtle session	Senior Phase	Grade 7	Natural Science & Technology	Live & living	Variations exist within species	Variations exist within species