

Fintastic

Marine Mammals and Where to Find Them ?



A fun learning activity book for kids

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MareCet is a non-governmental organization dedicated to the research and conservation of marine mammals and their marine habitats in Malaysia. Established in 2012, MareCet is committed to increasing scientific knowledge and public awareness of marine mammals and their habitats through research and conservation-based educational outreach, strengthening national policies and management plans for the marine environment, and building local capacity for research and conservation leadership. MareCet (pronounced *ma-rei-set*) is derived from the combination of the words 'Mare' (which means ocean in Latin) and 'Cetacean' (the scientific grouping of whales, dolphins and porpoises). The name signifies the two main focus of the organization: (1) The ocean, in general and (2) marine mammals, in particular.

Illustrated by Kok Ching Ying

Ching Ying has always had an affinity for whales. Nature and life are her inspiration to create art. She integrates elements of life into her artwork, in the form of drawings, paintings, crafts and writing. Based in Batu Pahat, Johor, Ching Ying established her own handcraft brand, '牛勿 niuwu anything' in 2015, where she fulfilled her dream of creative work. She finds contentment in handcrafting personalized gifts for people and their loved ones and providing warmth to people through her creations.



Supported by The ERM Foundation Malaysia

The ERM Foundation was established in 1995 to enable ERM and its employees to provide grant funding and professional support for non-profit organizations and social enterprises that share its commitment to creating a more sustainable and equitable world, supporting environmental and social causes across the globe. In Malaysia, The ERM Foundation has partnered with MareCet since 2018 to support conservation actions on marine mammals by providing pro bono support, arranging fundraising activities and helping raise awareness of MareCet's efforts and Malaysia's marine conservation issues.

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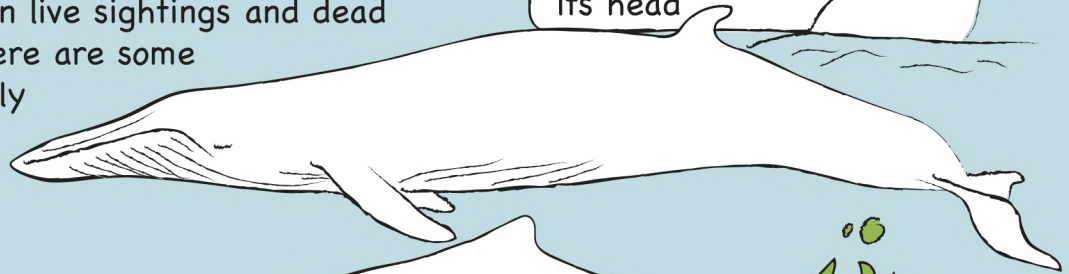


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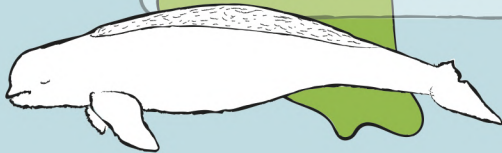
We have marine mammals in Malaysia!

There are at least 27 species of marine mammals in Malaysia. These are whales, dolphins, porpoise and dugong, based on live sightings and dead stranding records. Here are some of the more commonly seen species.

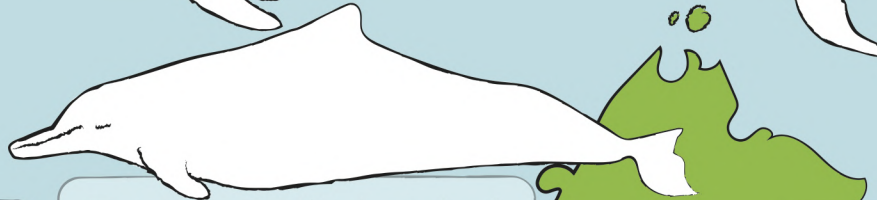
The Bryde's whale is identifiable by the three rostral ridges on top of its head



The Indo-Pacific finless porpoise is the only porpoise species found in Malaysian waters



The Indo-Pacific humpback dolphin is the only pink dolphin species in Asia



The Irrawaddy dolphin spits water to help it feed on fish



The Indo-Pacific bottlenose dolphin has a tall and falcate (curved) dorsal fin



The dugong produces a high-pitched sound known as a "chirp"



Marine mammal species commonly sighted around Malaysia



Irrawaddy dolphin
(*Orcaella brevirostris*)



Bryde's whale
(pronounced as 'broo-ders' whale)
(*Balaenoptera edeni*)



Dugong
(*Dugong dugon*)



Indo-Pacific humpback dolphin
(*Sousa chinensis*)



Indo-Pacific finless porpoise
(*Neophocaena phocaenoides*)



Spinner dolphin
(*Stenella longirostris*)



Indo-Pacific bottlenose dolphin
(*Tursiops aduncus*)



Pantropical spotted dolphin
(*Stenella attenuata*)



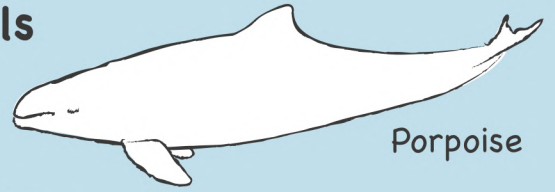
Long-beaked common dolphin
(*Delphinus delphis tropicalis*)



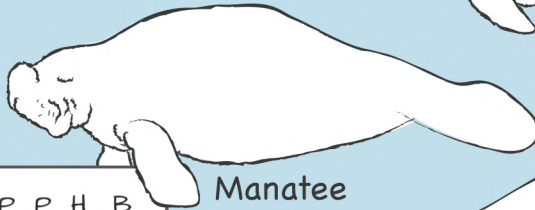
False killer whale
(*Pseudorca crassidens*)

The different types of marine mammals

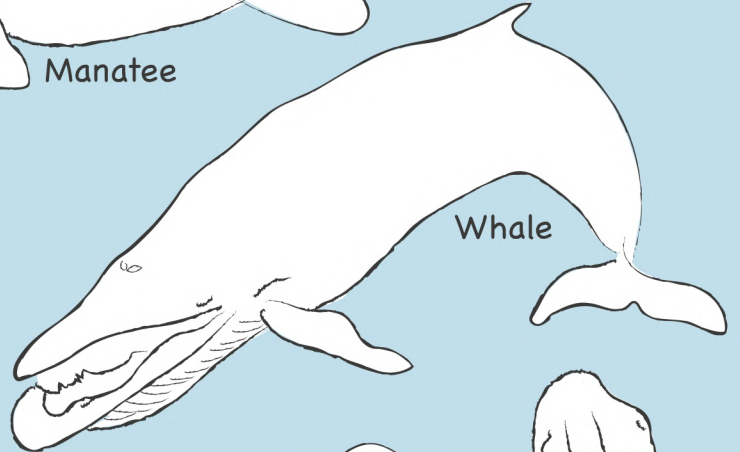
There are different types of marine mammals around the world. Can you find all the different marine mammals in the word search puzzle?



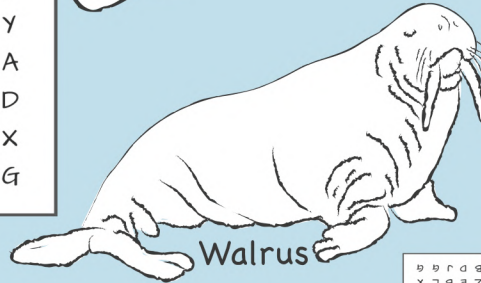
Porpoise



Manatee



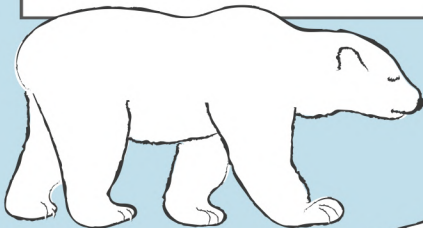
Whale



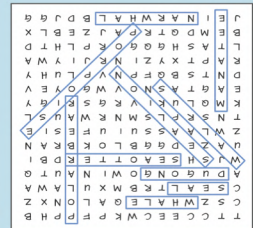
Walrus



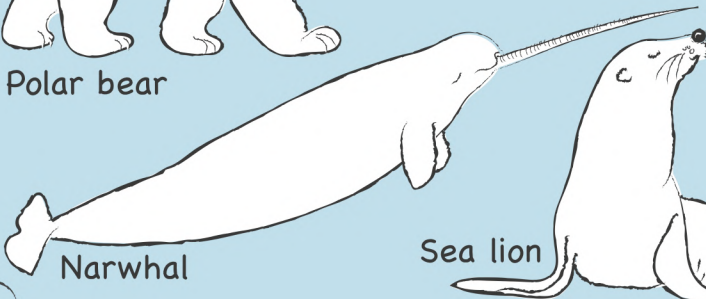
Dugong



Polar bear



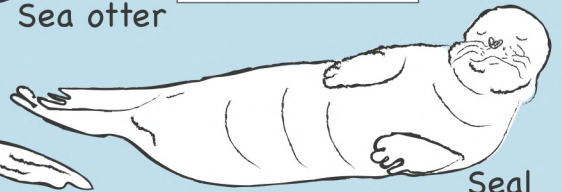
Sea otter



Narwhal



Sea lion

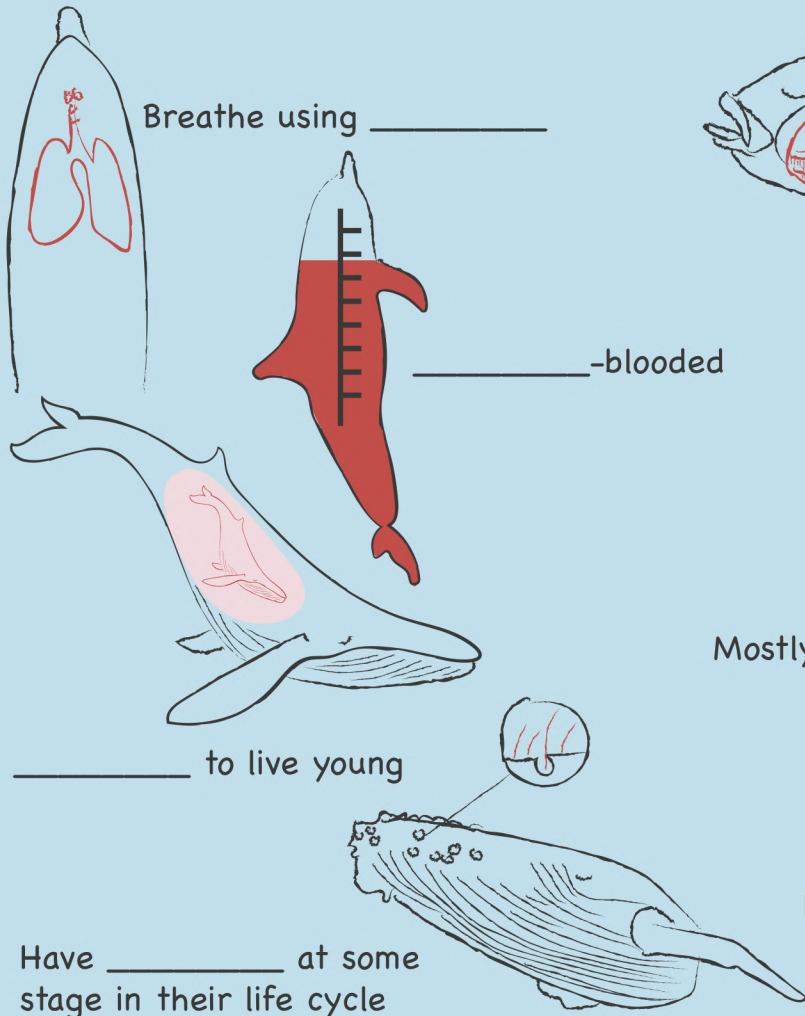


Seal

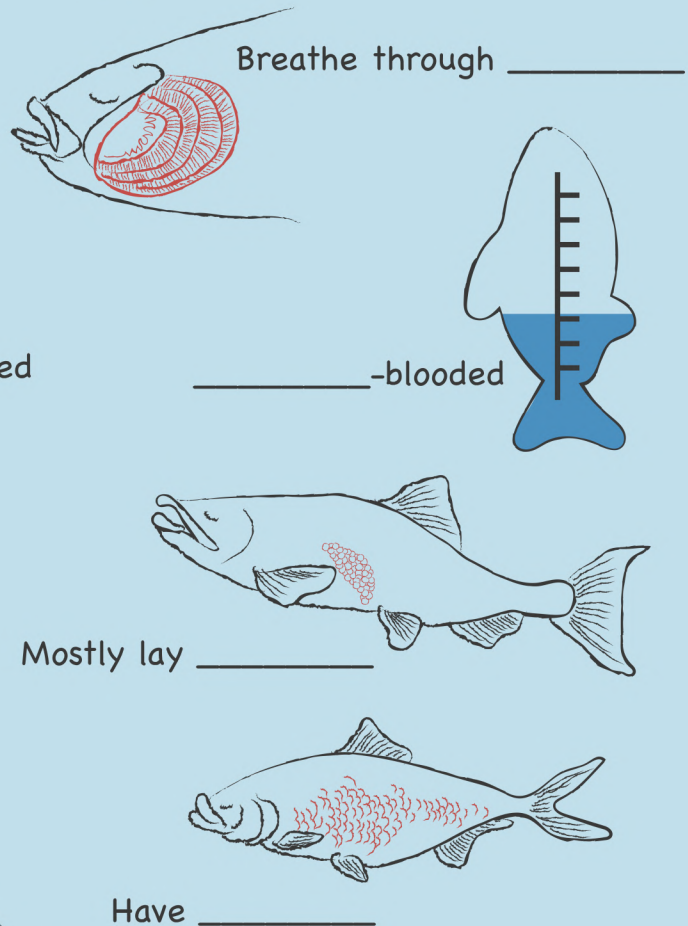
What are marine mammals?

Marine mammals are mammals that have adapted to live completely or partly in the marine or aquatic environment. Eventhough marine mammals spend all or most of their life in the marine/aquatic environment, there are still differences between marine mammals and fish. Fill in the blanks below.

MARINE MAMMAL



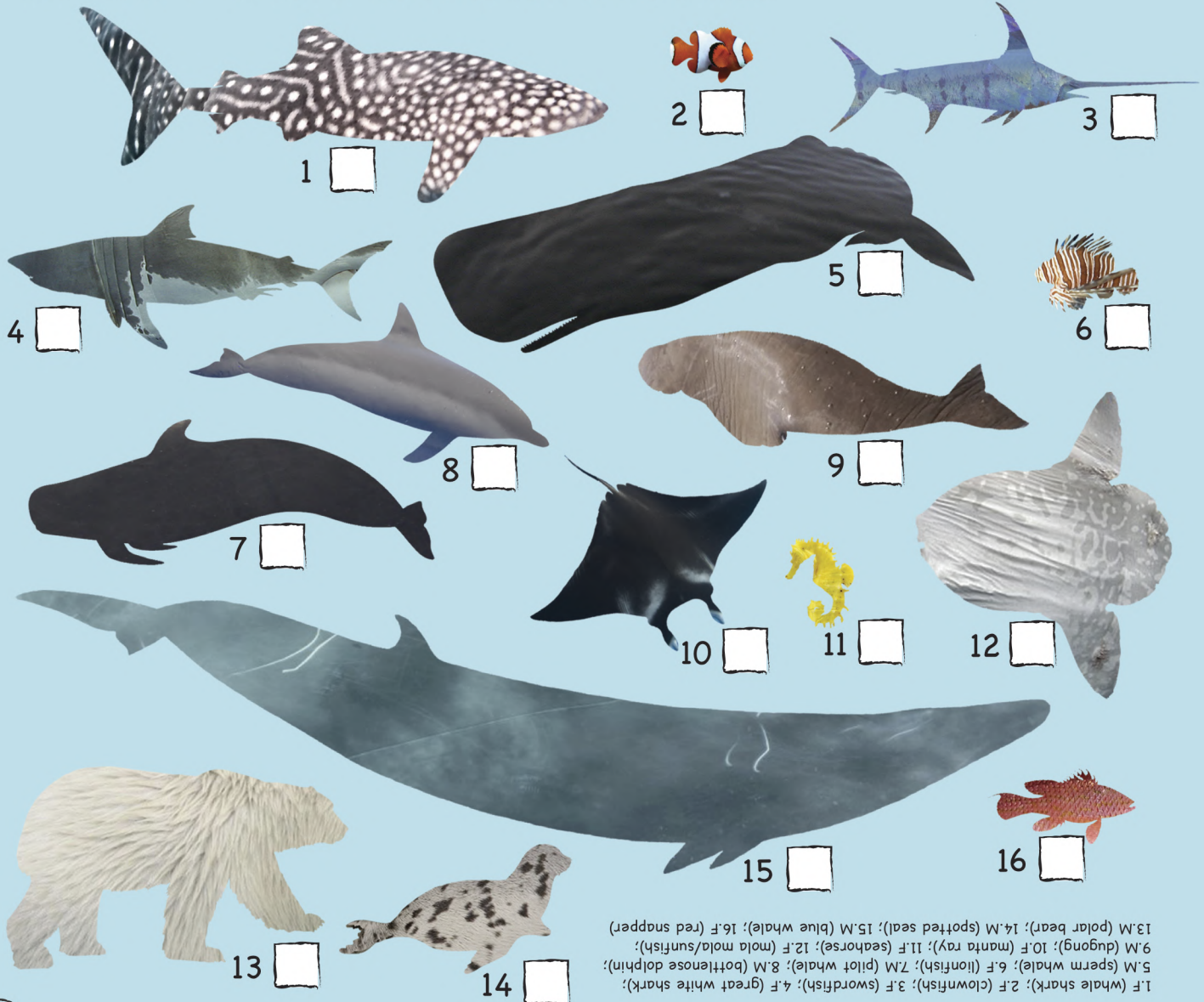
FISH



Marine mammal: lungs; warm; give birth; hair
Fish: gills; cold; eggs; scales

Am I a Marine Mammal or Fish?

Which of these are marine mammals and which of these are fish? Put 'M' for marine mammal or 'F' for fish in the boxes next to the animals.



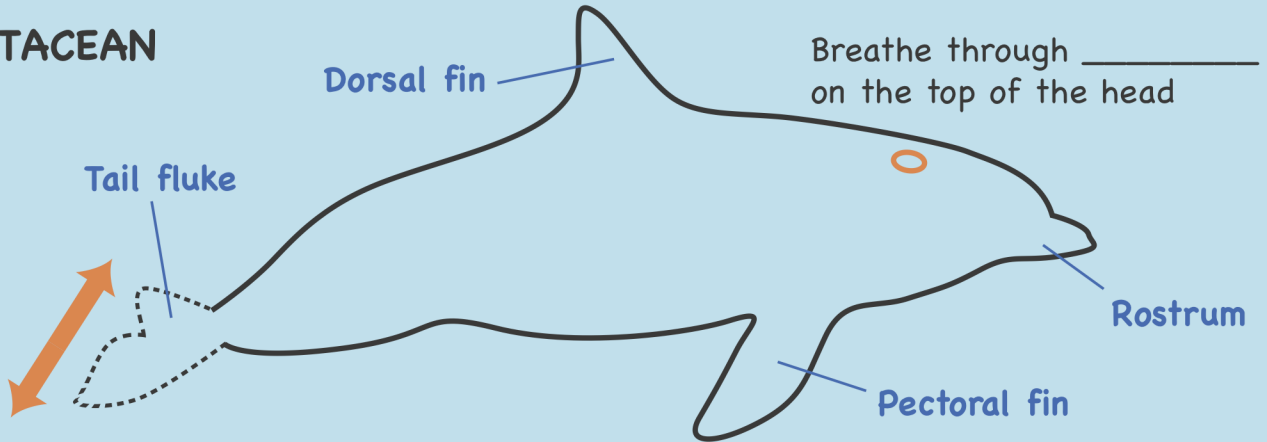
1.F (whale shark); 2.F (clownfish); 3.F (swordfish); 4.F (great white shark); 5.M (sperm whale); 6.F (lionfish); 7.M (pilot whale); 8.M (bottlenose dolphin); 9.M (dugong); 10.F (manta ray); 11.F (seahorse); 12.F (mola mola/sunfish); 13.M (polar bear); 14.M (spotted seal); 15.M (blue whale); 16.F (red snapper)

Cetacean versus Fish

Dolphins, porpoises and whales belong to the group named Cetacean (*se-tei-shen*). However, cetaceans are often mistaken as fish when in fact they are marine mammals!

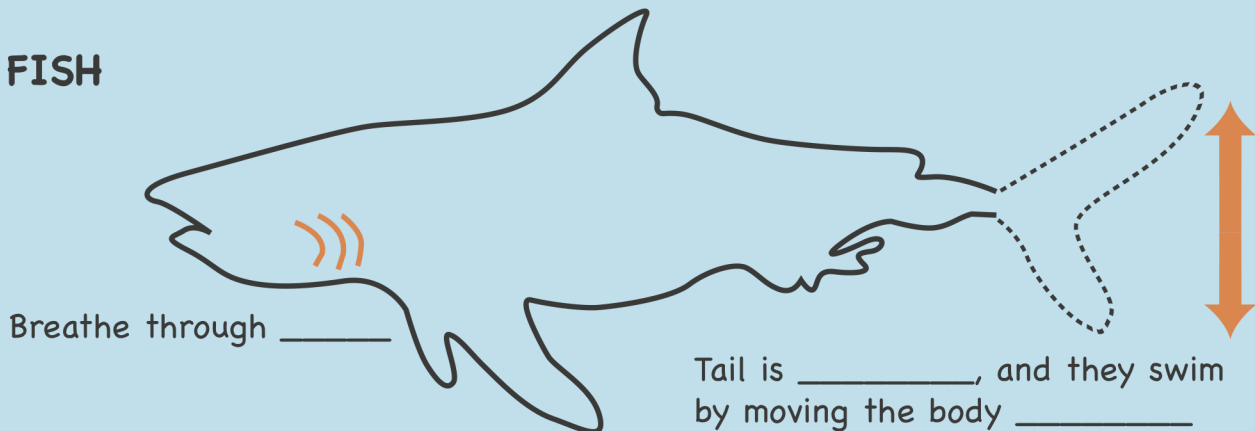
There are two simple ways to differentiate between a cetacean and a fish.

CETACEAN



Tail is _____, and they swim by moving the body _____

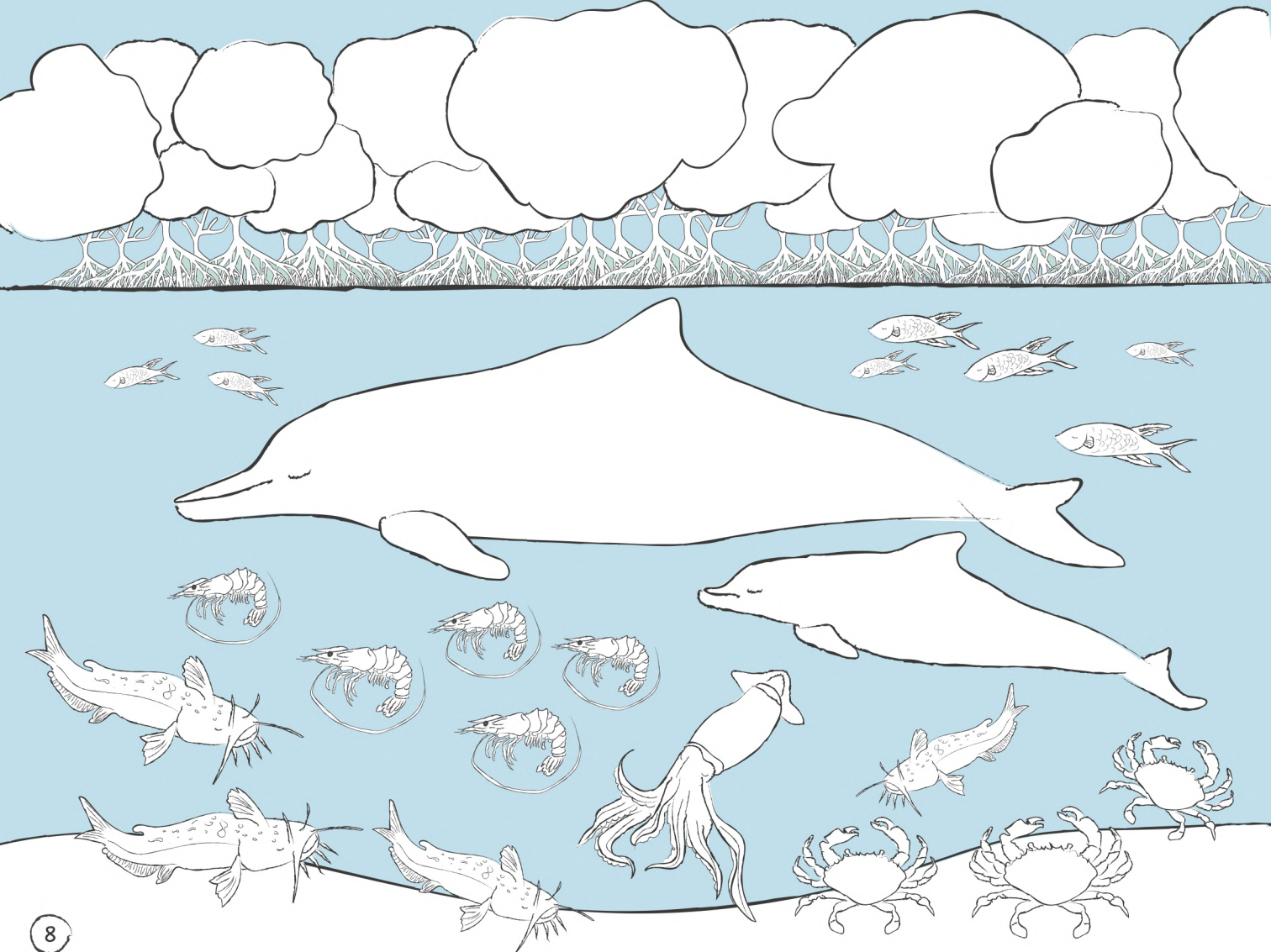
FISH



Cetacean: blowhole; vertical; up and down
Fish: gills; vertical; side to side

Indo-Pacific humpback dolphin

Indo-Pacific humpback dolphins are born grey, and they gradually lose their grey pigmentation on their bodies and turn mottled grey and pink or completely pink when they become adults. In Malaysia, these dolphins are usually found in nearshore areas where there are mangroves. Bring this page to life with some colours!



I'm a dolphin researcher!

Researchers are able to identify adult dolphin and whale individuals of most species by looking at the different shape and/or colour pigmentation of their dorsal fins. Below is a selection of Indo-Pacific humpback dolphin dorsal fins sighted in Langkawi.



Can you spot which dorsal fins belong to the same dolphin individual here?



1



2



3



4



5



6



7



8



9



10



11



12



13



14



15



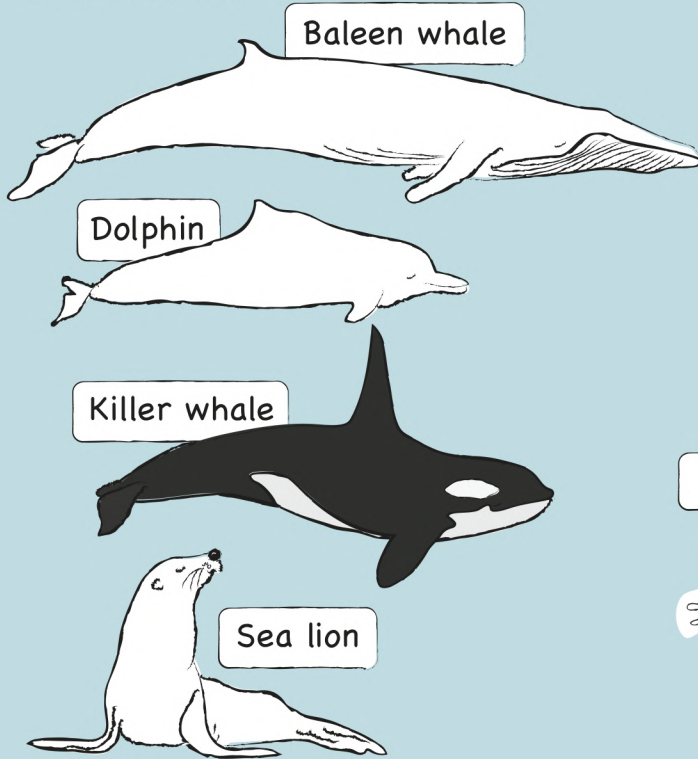
16

Hint: Try to match the dotted and pink colour patterns on the dorsal fins

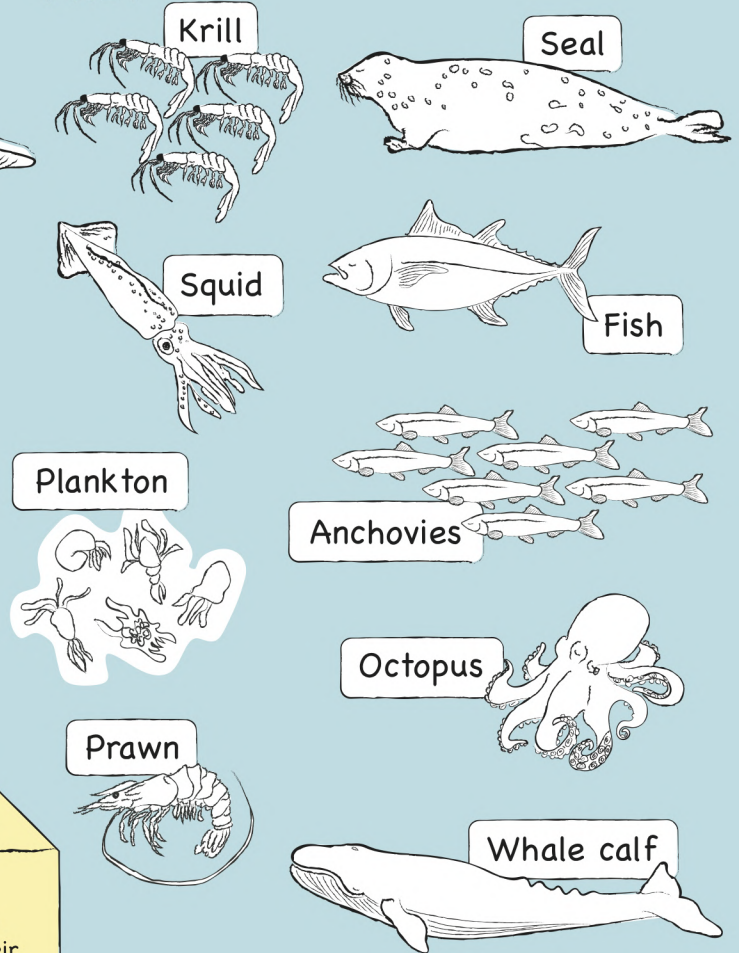
What do marine mammals eat?

Different marine mammals have different diets. Can you match the marine mammals below to the food that they feed on? *(Hint: some marine mammals eat other marine mammals too)*

PREDATOR



PREY



FUN FACT:



Indo-Pacific humpback dolphins love eating catfish. Some catfish species have sharp spines on their heads, so the dolphin only eats its body and leaves the head behind.



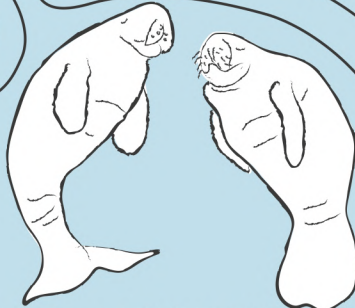
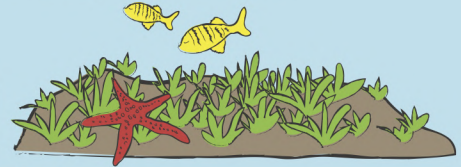
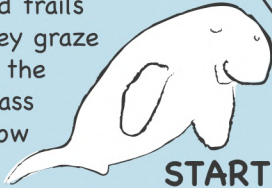
Scan here to see how the humpback dolphin hunts and feeds on catfish!

Baleen whale > krill, plankton, anchovies
 Dolphin > fish, squid, prawn, octopus
 Killer whale > fish, seal, whale calf
 Sea lion > fish, squid, octopus

Dugongs and their seagrass trails

Dugongs are herbivores and feed mainly on seagrass, hence they are often known as the "sea cow". Help the hungry dugong find its way to the seagrass meadow!

Dugongs leave behind trails as they graze along the seagrass meadow



Dugongs have a forked tail whereas manatees have a rounded tail



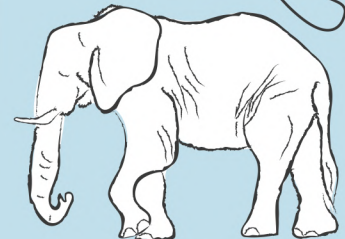
Dugongs can live up to 70 years!



Just like elephants, dugongs also have tusks that are located inside their mouths



Dugongs eat up to 50kg of seagrass per day!



Dugongs are more closely related to elephants than to other marine mammals

Importance of the ocean

The ocean is the largest ecosystem on Earth, covering more than 70% of Earth's surface. It provides countless benefits to our planet and all creatures that live here, including human beings. We are dependent on the ocean for living support. Can you name all the different services that the ocean provides? Fill in the blanks.

HABITAT, OXYGEN, SEAFOOD RESOURCES,
COASTAL PROTECTION, LIVELIHOOD,
RECREATION, DAILY PRODUCTS, TRANSPORTATION

S _ F _ _ _ RE _ _ _ _ C _ S

D _ _ _ Y P _ _ _ U _ TS

TR _ _ S _ _ _ T _ _ _ _ N

L _ _ _ LIH _ _ D

CO _ ST _ _ PR _ T _ C _ _ _ N

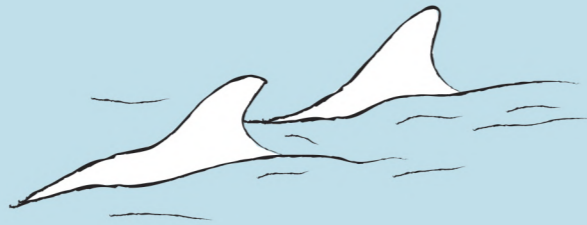
O _ YG _ _

H _ B _ _ _ T

R _ CR _ _ TI _ _

Crossword Puzzle Time!

Test your knowledge about marine mammals by completing the puzzle on the next page.



ACROSS

5. What do dugongs eat?
7. Dugongs and manatees are closely related to _____.
9. A dolphin calf is born with _____ which will eventually fall out as they grow.
12. Researchers identify most dolphin individuals based on their _____.
13. A group of dolphins is known as a _____.
14. The grouping name for dolphins, porpoises and whales is _____.
15. Marine mammals breathe air using their _____.
16. What is the main difference between a dolphin and a porpoise?
18. The largest fish in the world that is often mistaken as a marine mammal.
19. The ocean supplies more _____ than the forest.
20. What is the one unique feeding tactic that Irrawaddy dolphins use to stun prey?

DOWN

1. The Indo-Pacific _____ is the only species of porpoise found in Malaysia.
2. Heavy vessel traffic increases the risk of _____ to many marine wildlife.
3. Seagrass is a true plant whereas seaweed is an _____ (not a plant).
4. Plastic _____ is one of the main threats to our marine life.
6. The ocean is an important _____ for all marine life.
8. There are at least _____ species of marine mammals in Malaysia.
10. Apart from practicing '3R' (Reduce, Reuse, Recycle) in our daily lives, we should also remember to 'Refuse' single-use plastics and '_____ our planet.
11. What's the largest animal on Earth?
17. Bryde's whales filter feed through _____ plates.

1.FINLESS PORPOISE; 2.BOAT STRIKES; 3.ALGAE; 4.POLLUTION;
 5.SEAGRASS; 7.TELEPHANT; 9.WHISKERS; 12.DORSAL FINS; 13.POD;
 14.CETACEAN; 15.LUNGS; 16.TEETH; 18.WHALE SHARK; 19.OXYGEN;
 20.WATER SPITTING
 DOWN
 1.FINLESS PORPOISE; 2.BOAT STRIKES; 4.POLLUTION;
 6.HABITAT; 8.TWENTY SEVEN; 10.RESPECT; 11.BLUE WHALE; 17.BALEEN

What's in the ocean?

Our ocean is facing many threats nowadays. One of the major threats is marine pollution. Every minute, plastics amounting to a full garbage truck are dumped into the ocean. This pollution causes damage to marine ecosystems and can lead to serious injuries and even death of marine wildlife when they accidentally eat or get entangled in the trash.

Let's check out what the fisherman caught in his net today. Cross out the objects that are not supposed to be in the ocean, and colour the seafood catch of the day!

We are responsible for taking care of our ocean and making sure that it is always clean and healthy!



Fanbelt is a dolphin in Langkawi and also a victim of marine trash. It got stuck with a discarded fan belt from a boat engine which cut through its dorsal fin and scratched and injured the side of its body.



Oceans are NOT YOUR INFINITE DUMPSTERS!

Estimated decomposition rate of some common marine debris



Paper towel
2 - 4 weeks

Banana/orange peel
2 - 5 weeks



Newspaper
6 weeks

Apple core
2 months



Cigarette butt
1 - 10 years*

Plastic bag
10 - 20 years*



Styrofoam cup
50 years*

Aluminium can
200 years



Disposable diaper
450 years*

Plastic bottle
450 years*



** Items made from a type of plastic, which will break down into invisible microscopic pieces known as "microplastics" over time, but many scientists believe plastics **NEVER** entirely vanish in the environment.*

Source: NOAA, Ocean Conservancy, Woods Hole Sea Grant

You can be an everyday ocean hero!

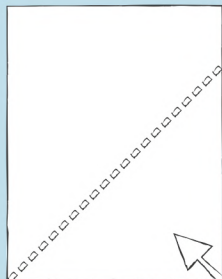
Which of the following actions help to protect the ocean? Put a tick (✓) to the actions below.

- Bring my own reusable bags everytime I go grocery shopping
- Dump my trash into the ocean because the ocean is so big
- Order my drink at the restaurant without a straw
- Bring my own reusable water bottle and refill at water stations everytime I go out
- Serve disposable/single-use plates, cups and cutleries during my house party as they are so convenient and easy to dispose
- Join beach cleanup activities during my free time
- Bring my own reusable food containers whenever I need to takeaway food or when I want to buy all the yummy foods at the night market (*pasar malam*)
- Avoid buying snacks that are individually packed



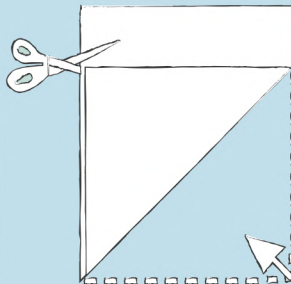
'Whale' you fold this origami?

Supplies needed:
A4 paper
Scissors
Markers or crayons



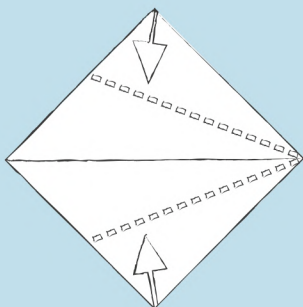
1

Start by making a square piece of paper. To start making the square, fold one corner of a piece of paper over to the adjacent side.



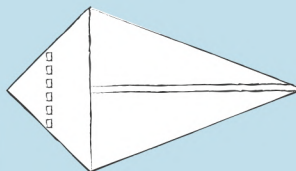
2

To finish making the square, cut off the small rectangle, forming a square (which is already folded into a triangle).



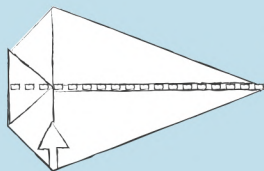
3

Fold two opposite sides over so that they meet at the fold.



4

Fold the tip over to just meet the other folds.



5

Fold the piece in half along the central axis.



6

Fold the tail up.



7

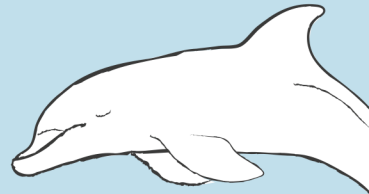
Make a short cut through the end of the fold in the tail. Fold the edges of the tail outwards.



8

Draw eyes, fins, and any other patterns you like, and there you have it, a whale!

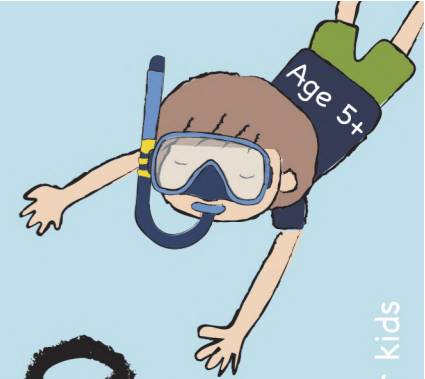
Glossary



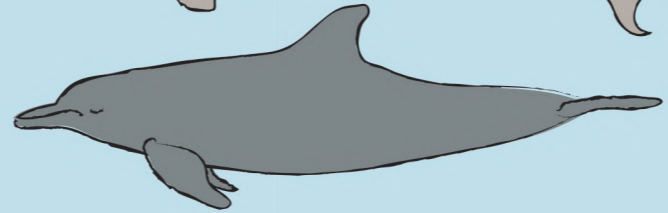
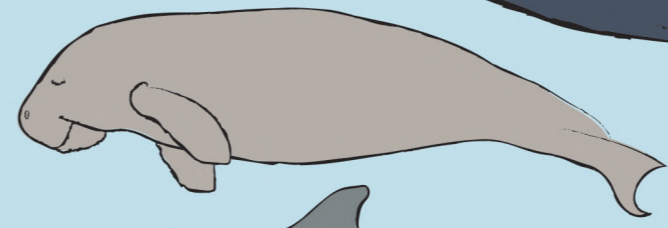
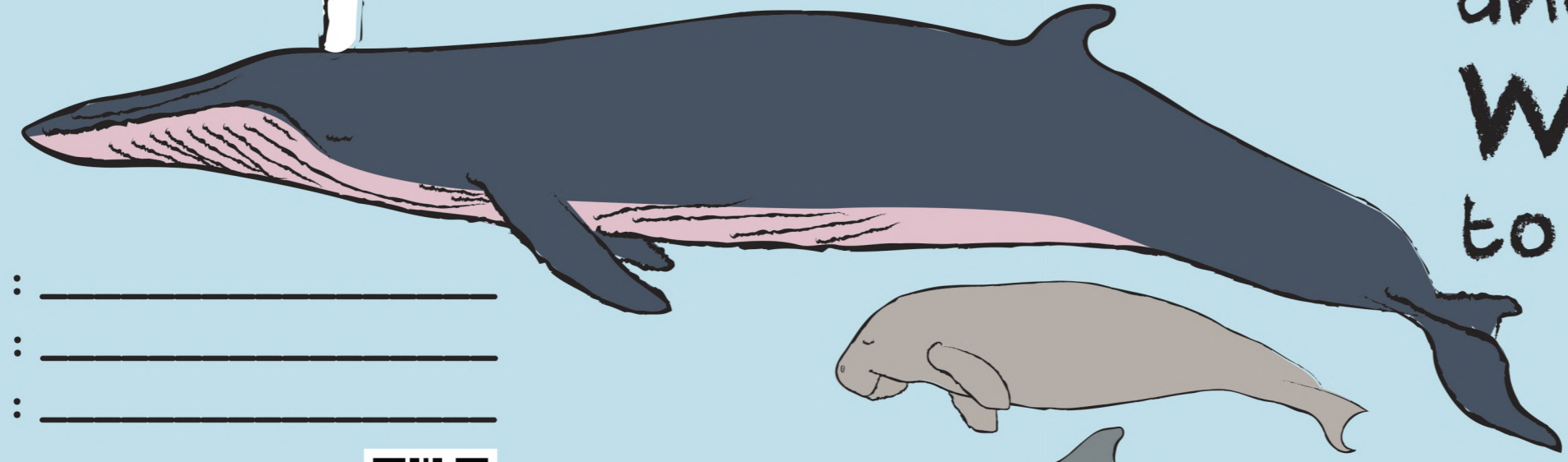
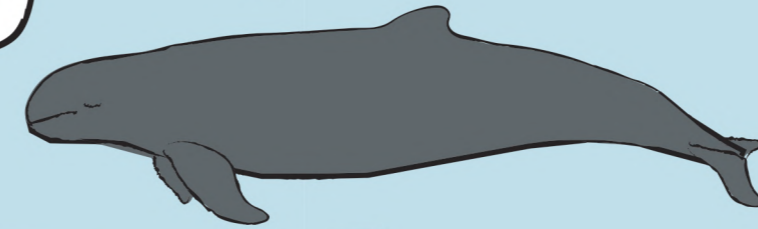
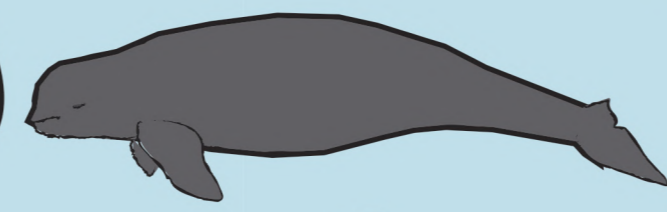
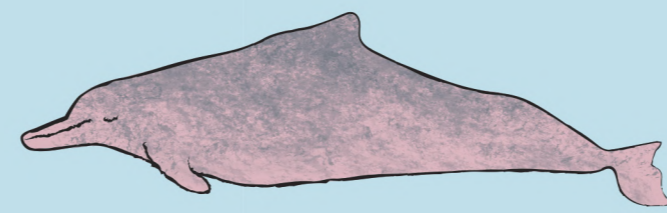
Word

Definition

baleen	a filter-feeding feature found on the upper jaw inside the mouth of some species of whales (i.e. baleen whales such as humpback whales, blue whales, and Bryde's whales)
coastal	land area close to or by the sea
debris	trash, litter or waste
decomposition	the action/process of decaying or breaking down
ecosystem	a community of living organisms and non-living components that live/exist in a specific environment and interact with each other as a system
habitat	the natural living environment (home) of an animal, plant or other organism
livelihood	a way of making a living/earning money
mangrove	tropical vegetation that grows in coastal salt or brackish (mix of salty and fresh) water
marine	sea or ocean-related
pigmentation	the natural colouration pattern of a living organism
pollution	presence or introduction of harmful materials into the environment
recreation	activity of leisure done in one's free time
sighting	(in the marine mammal context) an occasion of spotting one or more marine mammals in the wild
species	a group of living organisms which share similar characteristics to each other and can breed with each other
stranding	(in the marine mammal context) a situation whereby one or more marine mammals are found in distress (e.g. washed ashore or trapped in shallow water), dead or alive
threat	a danger that may kill, hurt or cause problems to a person or a living organism



Leave a nice message for marine mammals and the ocean here:



Fintastic
**Marine
 Mammals**
 and
**Where
 to Find
 Them ?**

Name : _____
 Age : _____
 Date : _____

To learn more about MareCet, visit us at

