

Learning Guide to Accompany **Manatees**

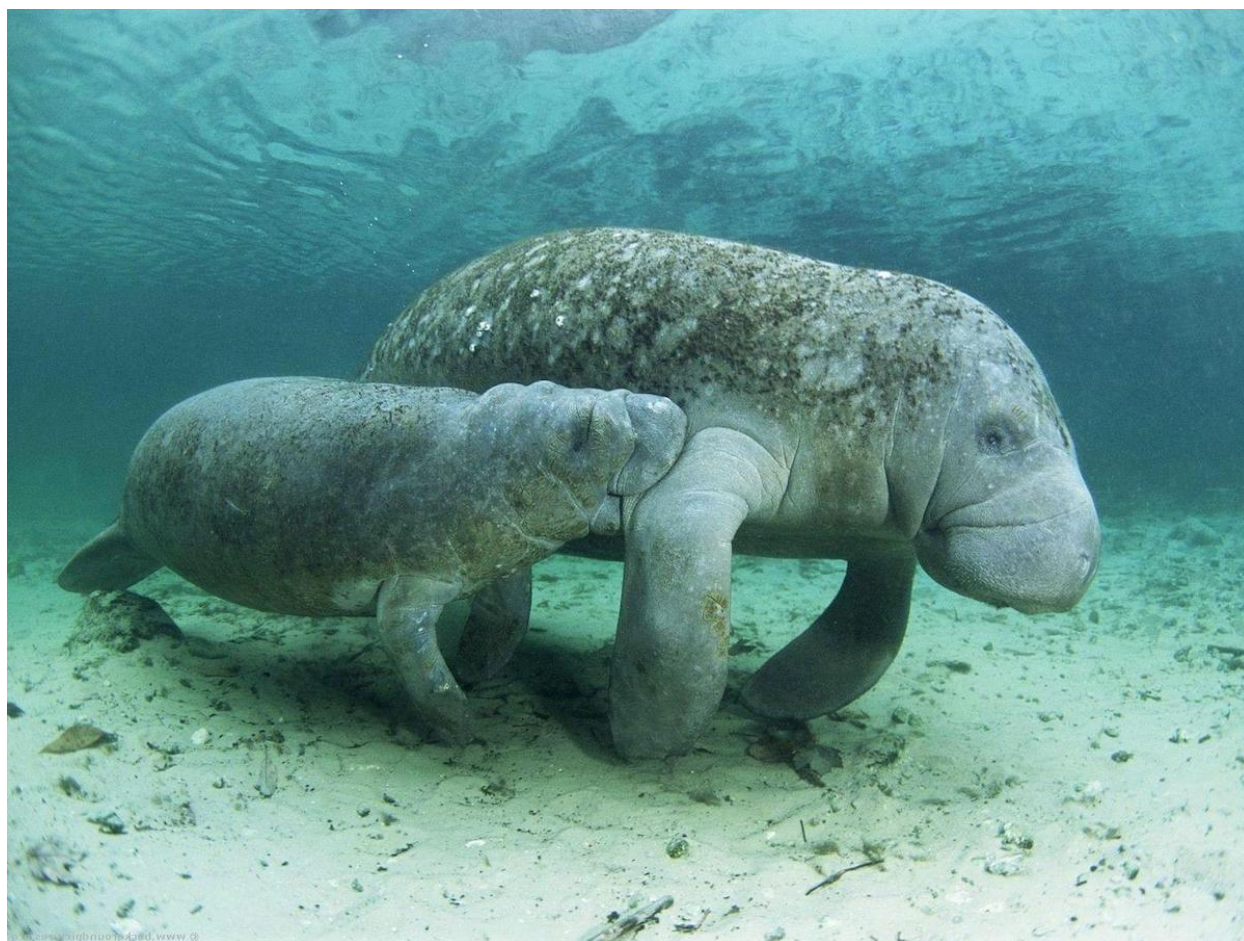
The Children's Hour radio show podcast

<https://www.childrenshour.org/manatees/>



We hope you enjoyed listening to our interview with Andrea Herman from the Clearwater Marine Aquarium. Check out the aquarium's website at <https://www.cmaquarium.org/>.

This guide will help you to understand manatees. Also, it will link you to some resources where you can learn more. [Connect to Curriculum here.](#)



What do you know? After listening to the radio show, answer these questions:

1. What is one new fact you learned about manatees?
2. What is one new question you have about them?
3. What is an important thing about manatees that you think everyone should know?

About Us

The Children's Hour Inc is a New Mexico-based non-profit organization that produces an award-winning children's radio program that is educational, entertaining, and engaging, and includes kids who participate in its creation. The program is internationally syndicated broadcasting on more than 120 public radio stations worldwide. Program themes focus on civics, STEM, culture, and music education, featuring New Mexico children as co-hosts and lead interviewers. Katie Stone has been the executive producer of *The Children's Hour* for 20 years.

For more information, contact: Katie Stone | (505) 850-3751 | katie@childrenshour.org

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Tell us about you!

We at the Children's Hour would like to know:

1. How old are you?
2. Was this your first time listening to a radio show or podcast for kids?
3. Was this radio show less fun or more fun compared to other things you do for fun, like playing video games or watching TV?

☐ Less fun ☐ More fun

4. Would you listen to a radio show again if you could?
5. Of everything you heard in the radio show, what will you remember most?

If you would like to draw a picture about anything you learned on the radio show, you can do so below, or on a blank page. Scan and email it to us, and we may display it on our online space.

If you would like to tell the creators of this radio show something in your own voice, you can send a voice message to *The Children's Hour* here: <https://www.childrenshour.org>. Look for the orange button and click to record.



Hunting for Words

There are so many wonderful songs about manatees in this episode. We wrote out just a few lyrics from five of the songs. **Can you match the lyric to the song it comes from?** Listen closely, and when you hear the lyric, draw a line from the lyric to the title of the song.

Get creative. Pick one of the lyrics and **draw a picture to represent what the words are saying.** Or draw a picture to show something from any of the songs in this episode.



Lyrics

- “And they eat and they eat and they eat eight hours a day, and they swim and they swim and they swim through warm water ways.”
- “I look just like a chubby brown bananatee, as I nose along the cozy ocean floor. Immune from human folly and inanity – that’s why a manatee is such a happy herbivore.”
- “Just look at these scars on my back they were made by somebody’s power boat propeller blade!”
- “Once I thought you were the mermaids in the sea – manatee!”
- “They grow so very large and round that some people call them sea cows. I think it’s funny but they say it’s true, although I never heard a manatee moo.”

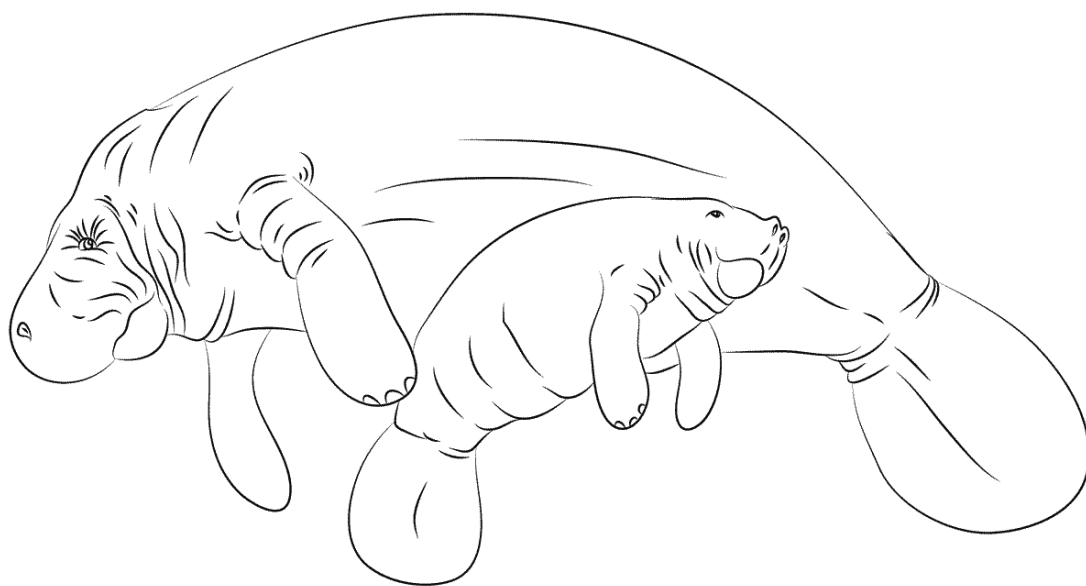
Manatee Songs (playlist)

1. **Manatee** by The Whizpops
2. **Be in the Sea** by Caspar Babypants
3. **Hugh the Manatee** by Magpie
4. **Manatee** by Fire Dog
5. **See Cow** Joanie Leeds and the Nightlights
6. **Manatee Bay** by Splash’N Boots
7. **Manatee Demanding a Pickle** by Parry Gripp
8. **I’m a Manatee** by John Lithgow
9. **Mary Manatee** by Dorothy Cresswell
10. **Manatee** by Farmer Jason and Hank Williams III
11. **Manatee** by Captain Bogg & Salty
12. **Manatee** by Battersby Duo

What is a manatee?

The manatee is a large **marine mammal** with an egg-shaped head, two **flippers**, and a flat tail called a **fluke**. They can live to be 50-60 years old. Manatees are also known as sea cows, perhaps because they seem slow and mellow, perhaps because they are always **grazing**.

Manatees often swim alone or in pairs. They are not territorial, so they have no need for a leader or followers. When manatees are seen in a group, it is either a mating herd or an informal meeting of individuals to share a warm area that has a food supply. A group of manatees is called an **aggregation**.



Are they big?

At birth, a manatee is about 4-4.5 feet (1.2-1.4 m) long and average 60-70 pounds (27-32 kg). A full-grown manatee weighs between **800 to 1,200 pounds** (360-545 kg) and reaches **10 feet** (3.0 m) in length. They can grow to be as large as 3,500 pounds (1,590 kg) and 13 feet (4.0 m) long.

Are they fast?

Although manatees have a slow, **lolling** nature, they can swim quickly and gracefully. Their large, strong tails **propel** them. Manatees usually swim about **5 mph** (8 km/h), but they can swim up to 15 mph (24 km/h) in short bursts when they feel a need for speed.

Where do they live?

Manatees live in shallow, calm rivers, estuaries, saltwater bays, canals, and coastal areas. Manatees move from fresh water to salt water with no problem. Manatees can suffer from **cold stress** in water colder than 68 °F (20 °C). In preparation for winter, manatees travel to areas with warm water such as natural hot springs or human-made power plants.

There are three species of manatee, living in distinct regions: the **African manatee** (*Trichechus senegalensis*); the **Amazonian manatee** (*Trichechus inunguis*); and the **West Indian manatee** which is divided into two subspecies – the **Florida manatee** (*Trichechus manatus latirostris*) and the **Antillean manatee** (*Trichechus manatus manatus*).

View and print a **color poster: The Sirenians of the World** (includes a map):

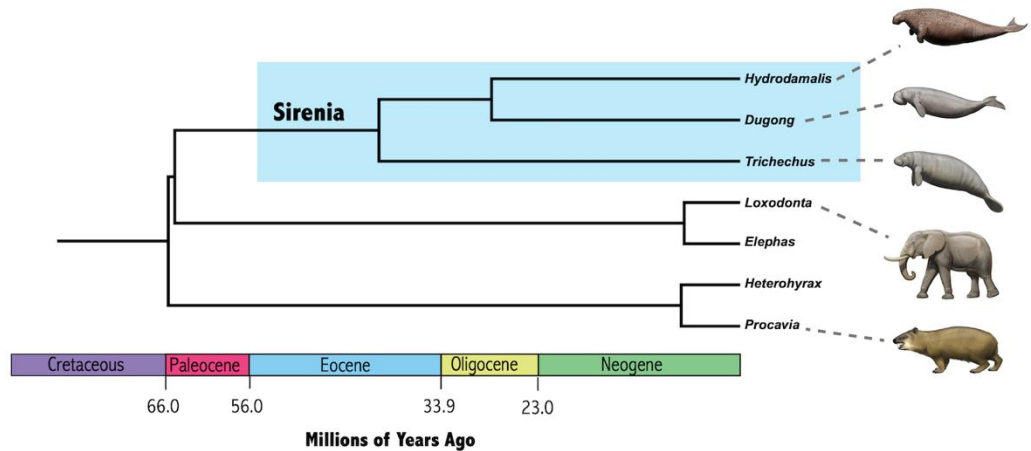
<https://www.savethemanatee.org/wp-content/uploads/2021/10/Sirenia-Poster-8x10-1.pdf>

What animals are related to manatees?

In the Animal Kingdom, manatees are related to the elephants. Both manatees and elephants have tough skin, bristle-like hair, **prehensile** facial structures, teeth that are continuously being replaced, and “toe” nails on each forelimb.

An animal that is similar to the manatee is the **dugong**. These manatee cousins are found in the Indian and Pacific oceans. They have a notch in their tails, as well as tusks. A dugong that is now extinct is **Stellar’s Sea Cow**.

These dugongs were discovered in 1741 living in Arctic waters, and humans hunted them for their meat, blubber, bones, and hide. They became extinct 27 years later. Dugongs and manatees are classified together in the same Order: **Sirenia**.

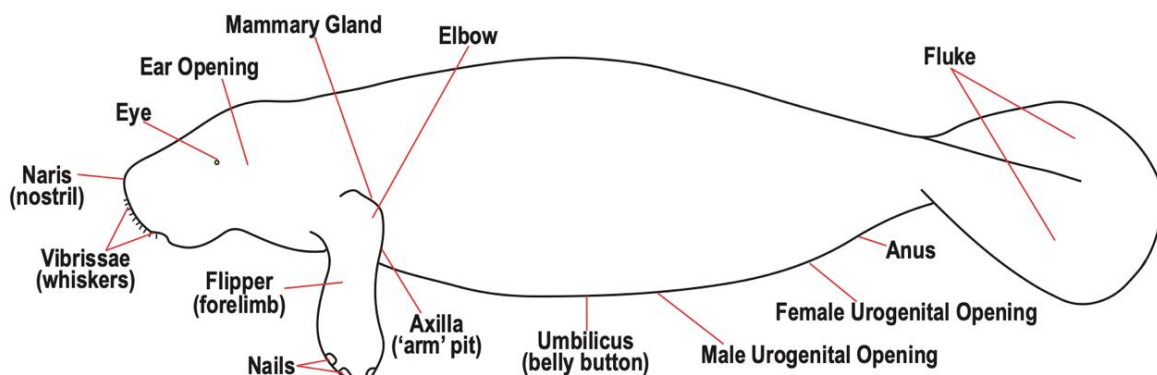


What do manatees eat?

Manatees are **herbivores**. At sea, they tend to prefer sea grasses. When they live in rivers, they consume freshwater vegetation. Manatees also eat algae. A manatee can eat a tenth of its own weight in 24 hours. That can equal up to 130 lbs. (59 kg). A baby manatee feeds on its mother’s milk.

What’s special about a manatee’s ears, eyes, nose, and mouth?

Although a manatee’s eyes are small, their eyesight is good. They have a special **nictitating membrane** that can be drawn across the eyeball for protection, like goggles. Although a manatee doesn’t have outer ear structures, their hearing is good because they have large **inner ear bones**. A manatee’s only teeth are called **marching molars**. Throughout a manatee’s life, the molars are constantly replaced — an adaption to their diet of abrasive vegetation. A manatee’s snout has and stiff whiskers on it. The whiskers, called **vibrissae**, are very sensitive, almost like human fingers. These fine hairs enable the manatee to sense vibrations.



How do manatees breathe?

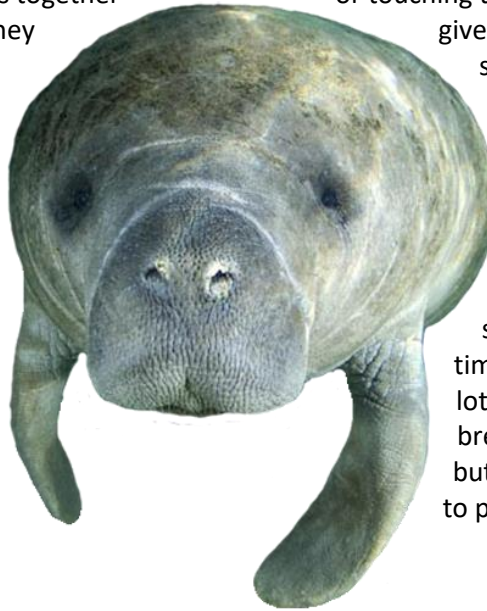
Like all mammals, manatees have lungs, but they don't need to breathe constantly. As they swim, they poke their nose up above the water's surface to catch a few breaths every few minutes. If they are resting, they can stay under the water for 15-20 minutes without taking a breath.

How do manatees communicate?

Manatees are **tactile** animals – they touch each other and things in their environment. They greet one another by pressing their snouts together or touching tails. They swim together by holding each other's flippers. They give each other friendly bumps, like kids on the playground. Using sound, they chirp, grunt, squeak, squeal, and whistle. They groan when they stretch.

Why does algae

A manatee has thick, tough, sparse hairs. **Algae**, a kind of often grows on a manatee's mammals that spend a lot of Algae thrive in wet areas with manatee's back an ideal look uncomfortable to us, the slimy stuff. Algae may help out harmful rays from the sun.



grow on manatees?

spongy, wrinkled skin with **photosynthetic** organism, skin. Manatees are slow moving time near the water's surface. lots of sunlight, which makes the breeding ground for algae. It may but manatees don't seem to mind to protect the manatee by blocking

How do manatees care for their young?

The relationship between a mother and offspring is the strongest social bond created by manatees. A mother manatee will carry her baby for about 12 months before it is born. A baby manatee is called a **calf**. The calf is born underwater, and the mother pushes her baby to the surface of the water to get their first breath. A calf swims next to their mother and sleeps under her flipper, back, or tail. Mother teaches the young one which plants to eat. She disciplines the calf with a swat of her tail. The calf will stay close to the mother for one to two years to learn travel routes and the location of food, rest areas, and warm water **refuges**.

Are manatees related to mermaids?

Manatees might not look like **mermaids** to us, but long ago some sailors may have mistaken manatees and dugongs for mermaids – mythical sea monsters or nymphs who were **sirens**. These sirens sang mesmerizing songs that lured sailors to steer their ships onto treacherous rocks. Part of the mermaid legend remains in the name of manatees' animal Order, Sirenia.

Video: Have you ever watched a real live manatee? Underwater Manatee-Cam at Blue Spring State Park: <https://youtu.be/ofub9xtWAvM>

Video: What's it like to swim with manatees? Watch 7-year-old Elizabeth swim with the Florida manatees on Jonathan Bird's Blue World: <https://youtu.be/GoyvFWTA4zk>

How do boats harm manatees?

Most Florida manatees are scarred from being hit by boat propellers. Propeller scars are so common that scientists use scar patterns to identify individual manatees. Some manatees are killed from boat collisions. Jet skis can also harm or kill manatees.



This photo shows severe harm done to manatee's tail by a boat propeller.

Do humans do things to protect manatees?

There are two US laws – the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973 – that protect manatees. It is illegal to **harass**, hunt, kill, capture, or collect manatees. In 1978 Florida legislature established the Florida Manatee Sanctuary Act that helped to establish speed zones and sanctuary areas. Today there are manatee wintering sites in Florida that aid in the protection of this species by not permitting boats, swimmers, or divers in these areas.

Why are manatees tagged?

To protect manatees, we have to know where they are and how they travel. It is sometimes necessary to **tag** and track them. The tag is connected around the base of the tail and designed to break free if it becomes entangled or caught. There are two types of tags: radio and satellite. Radio tags are used for short term, local tracking. With a radio tag, humans can track the manatee to a place where it is safe to rescue. Satellite tags are used for long-term, possibly distant tracking. By satellite tagging manatees, biologists can study and observe the traveling patterns and health of manatees.

How does climate change affect the manatees?

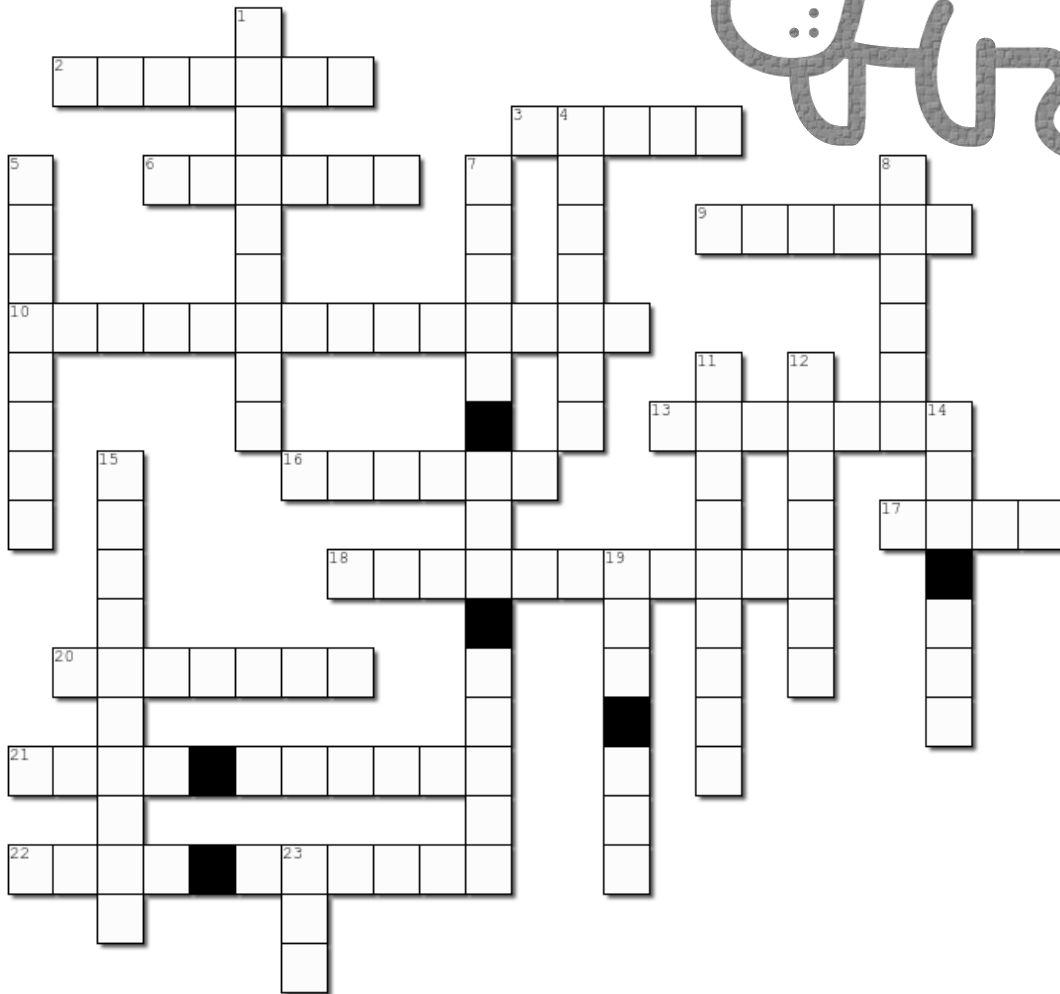
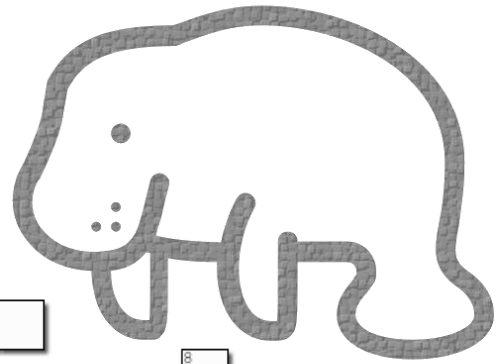
As the sea level rises, seagrass beds may die off or shift locations, making it more difficult for manatees to find food. Also, with harsher and more frequent storms, such as hurricanes, manatees may be killed, displaced, or have difficulties reproducing. Moreover, with storms comes more intense rainfall and more human-made fertilizers will runoff into coastal waters. This can cause a red tide event. **Red tide** is a population explosion, or **bloom**, of a naturally occurring single-celled marine organism called a **dinoflagellate**, which produces a neurotoxin that can kill manatees and other marine life. Red tides can be fatal to large numbers of manatees.

Video: Why was last year was the deadliest on record for manatees? What are people in Florida doing to try to save them? PBS News: <https://www.pbs.org/video/in-peril-1644533632/>

Save the Manatee Club provides a wealth of **free education materials** for students and educators:
<https://www.savethemanatee.org/manatees/education-materials/>

Manatees: Crossword Puzzle

Hint: Words used in this puzzle appear in **boldface** in this learning guide.



Created using the Crossword Maker on TheTeachersCorner.net

Horizontal

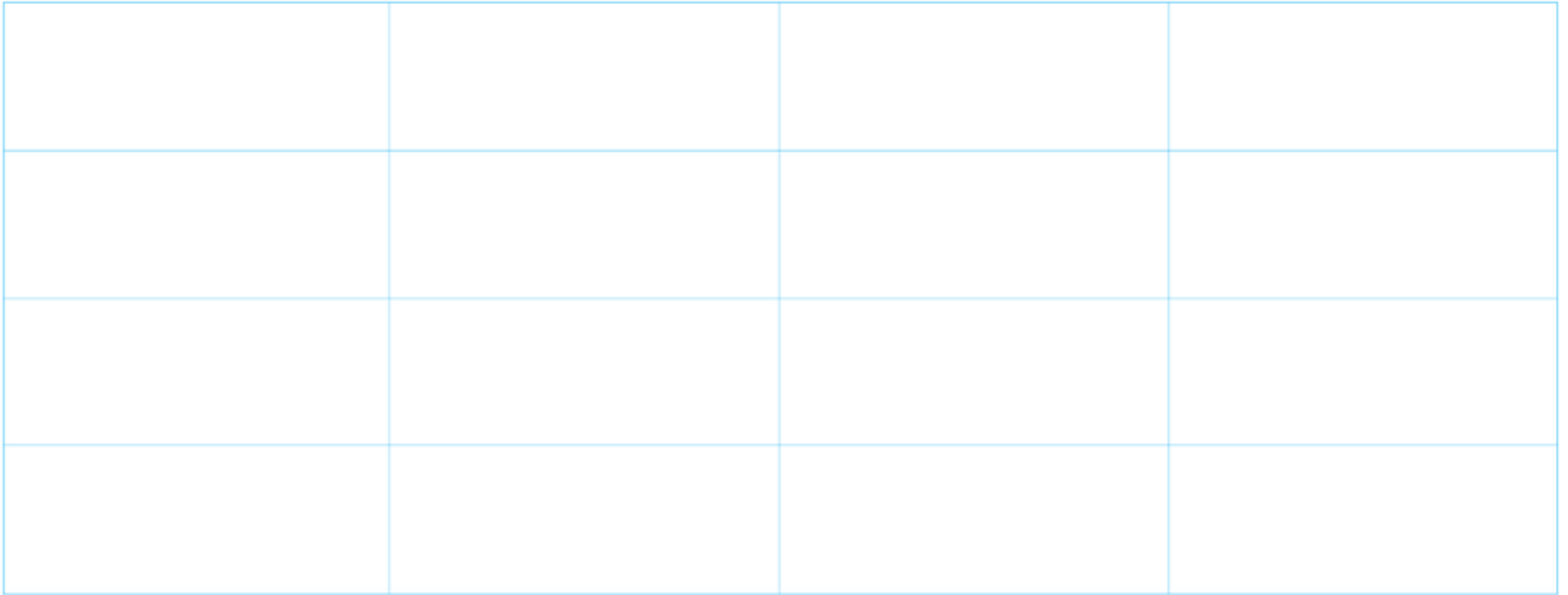
2. feeding on grass
3. tail
6. In the USA it is illegal to _____, hunt, kill, capture, or collect manatees.
9. an animal that is fed with its mother's milk
10. an organism that makes food from sunlight
13. places that provide safe shelter
16. to thrust or push
17. baby manatee
18. a group of manatees
20. mythical sea creature; a siren
21. The Florida manatee is one subspecies of the _____ manatee.
22. Manatees can suffer from _____ in water with a temperature of 68 degrees F or less.

Vertical

1. sensitive whiskers
4. slouching and sagging
5. on manatees this is where you find toenails
7. A manatee's hearing is good because it has large _____.
8. lives in the sea
11. an animal that eats only plant matter
12. Manatees and _____ belong to the order Sirenia.
14. A Sirenian that was hunted to extinction was called Stellar's _____.
15. capable of grasping; like a monkey's tail, an elephant's trunk, and a manatee's lips
19. Baby manatees get milk from the mother at the axilla or _____.
23. a label for tracking manatees

How to Draw a Manatee

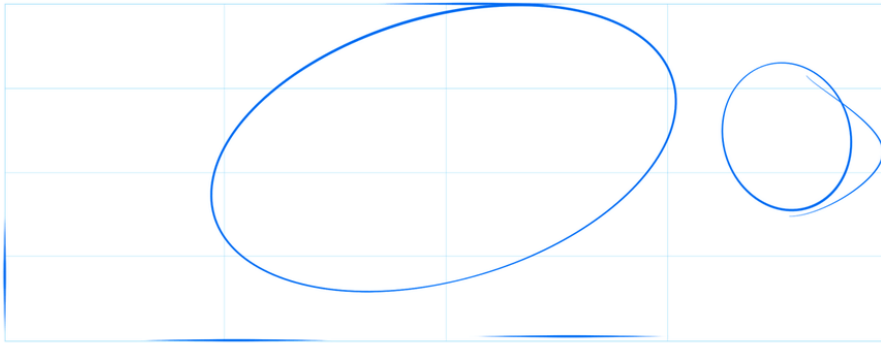
Adapted from Lena London: <http://www.supercoloring.com/drawing-tutorials/how-to-draw-a-manatee> [Creative Commons Attribution-Share Alike 4.0 License]



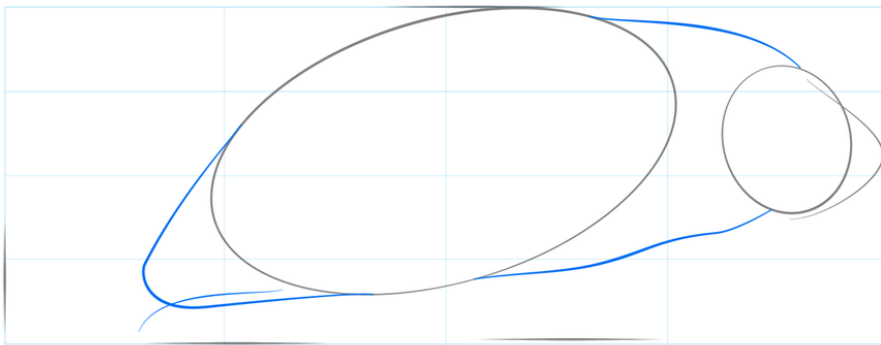
SUPERCOLORING

Print this page and use the grid above; or on a blank sheet of paper, make a grid of your own by dividing a rectangle into 16 small rectangles.

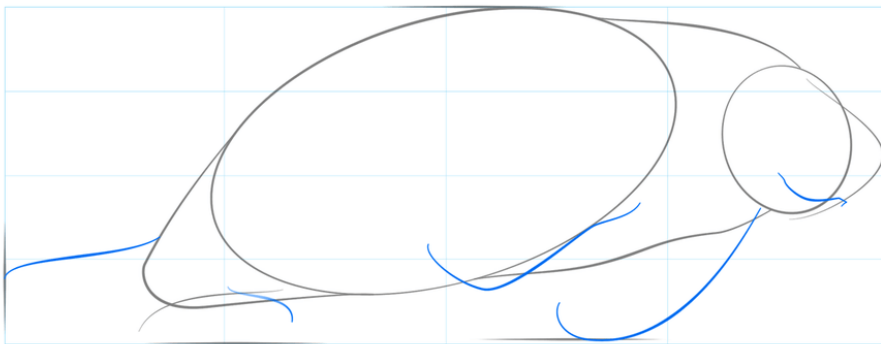
Follow the steps on the next page. Use pencil so you can erase and adjust your lines.



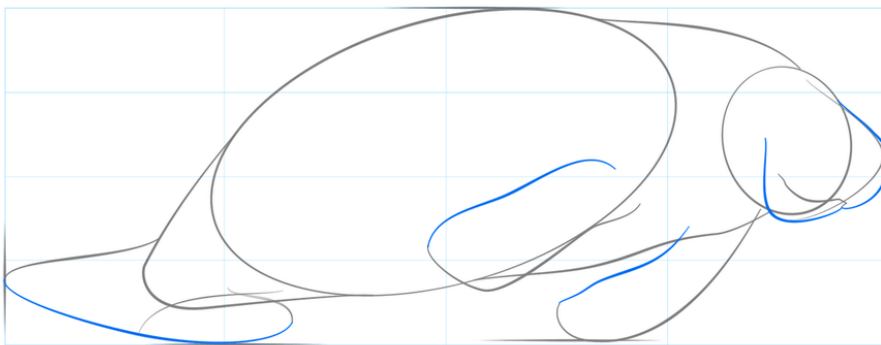
STEP 1. Draw two ovals: one is the head, and the other is the body. Draw a curved line, which will act as the center of its head.



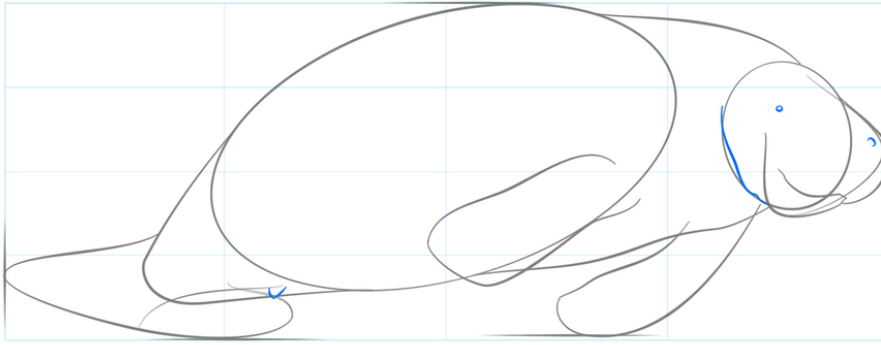
STEP 2. Draw lines to connect the head and body, and to outline the hind end.



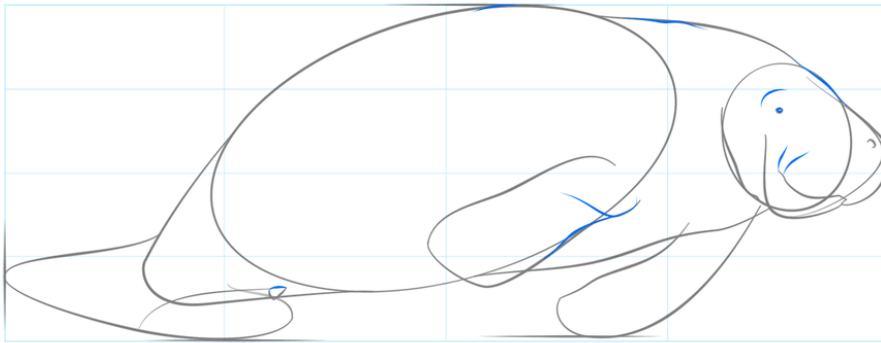
STEP 3. Add guidelines for the fluke, flippers, and mouth.



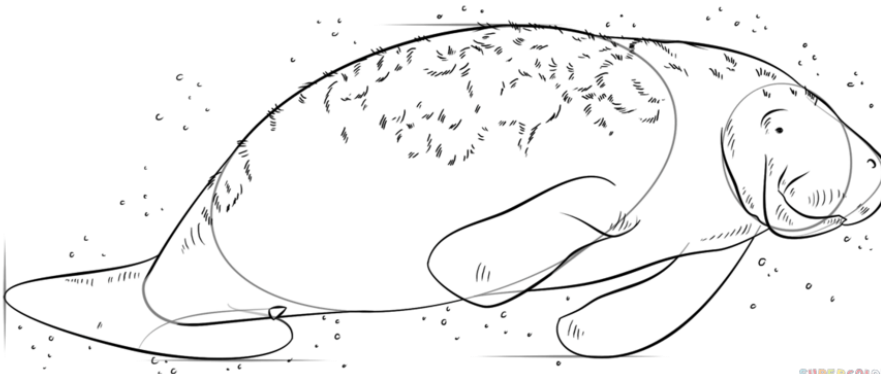
STEP 4. Draw shapes of the flippers, fluke, and snout of the manatee.



STEP 5. Add the eye, nose, and facial contour.



STEP 6. Work on the whole figure, adding details.



STEP 7. Show the contours of by adding lines. Darken the outlines. Draw whiskers and algae.

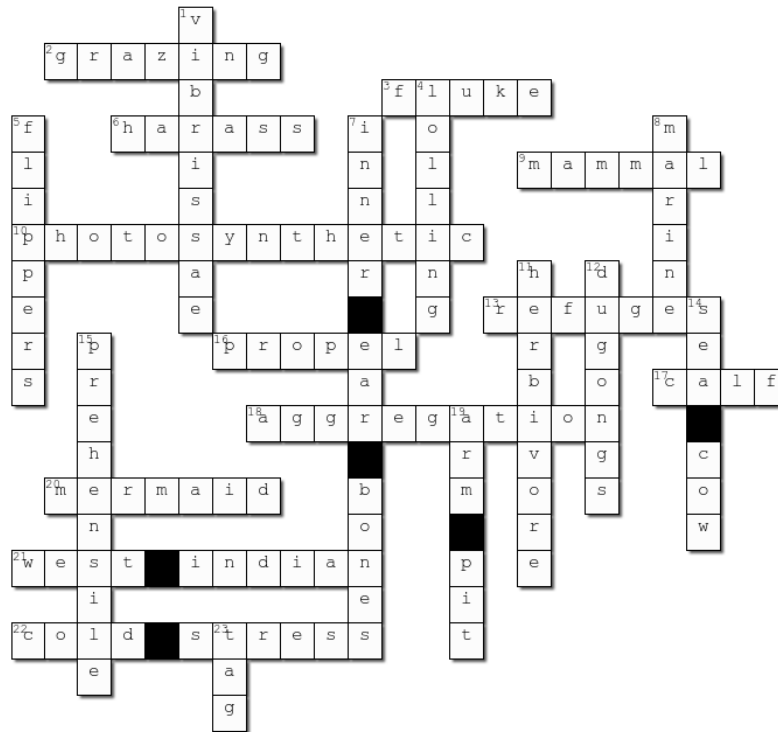


STEP 8. Erase all guidelines.

Add a caption, if you like.

Sign your work!

Crossword Answer Key



Created using the Crossword Maker on TheTeachersCorner.net

Horizontal

2. feeding on grass (**grazing**)
3. tail (**fluke**)
6. In the USA it is illegal to _____, hunt, kill, capture, or collect manatees. (**harass**)
9. an animal that is fed with its mother's milk (**mammal**)
10. an organism that makes food from sunlight (**photosynthetic**)
13. places that provide safe shelter (**refuges**)
16. to thrust or push (**propel**)
17. baby manatee (**calf**)
18. a group of manatees (**aggregation**)
20. mythical sea creature; a siren (**mermaid**)
21. The Florida manatee is one subspecies of the _____ manatee. (**west indian**)
22. Manatees can suffer from _____ in water with a temperature of 68 degrees F or less. (**cold stress**)

Vertical

1. sensitive whiskers (**vibrissae**)
4. slouching and sagging (**lolling**)
5. on manatees this is where you find toenails (**flippers**)
7. A manatee's hearing is good because it has large _____. (**inner ear bones**)
8. lives in the sea (**marine**)
11. an animal that eats only plant matter (**herbivore**)
12. Manatees and _____ belong to the order Sirenia. (**dugongs**)
14. A Sirenian that was hunted to extinction was called Stellar's _____. (**sea cow**)
15. capable of grasping; like a monkey's tail, an elephant's trunk, and a manatee's lips (**prehensile**)
19. Baby manatees get milk from the mother at the axilla or _____. (**arm pit**)
23. a label for tracking manatees (**tag**)

Connect to Curriculum

<http://www.corestandards.org>

<https://artinaction.org/standards/>

<https://www.nextgenscience.org/>

<https://www.positiveaction.net/blog/sel-competencies>

Information/Activity	Core Idea	Learning Standards
p.3 Hunting for Words	Recount or describe key ideas or details from (a text read aloud or) information presented orally or through other media.	Common Core ELA SL 2
	Add drawings (or other visual displays) to descriptions as desired to provide additional detail.	Common Core ELA SL K
p.4, 5, 6, 7 Basic information about manatees	Read and comprehend informational texts, including history/social studies, science, and technical texts...	Common Core ELA RI 10
	(Plants and) animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction.	LS1.A (4-LS1-1)
	Animals engage in characteristic behaviors that increase the odds of reproduction.	LS1.B (MS-LS1-4)
	Populations live in a variety of habitats and change in those habitats affects the organisms living there.	LS4.D (3-LS4-4)
p.7 Video	Growth of organisms [manatees]... are limited by access to resources.	MS-LS2.A3
p.4 Coloring p.9, 10, 11 How to Draw a Manatee	Create art that represents natural and constructed environments. Describe what an image represents.	NCAS Creating #2 K Responding #7 K
p.8 Crossword Puzzle	Use precise language and domain-specific vocabulary to inform about or explain the topic.	Common Core ELA WHST 2 (6-8)