



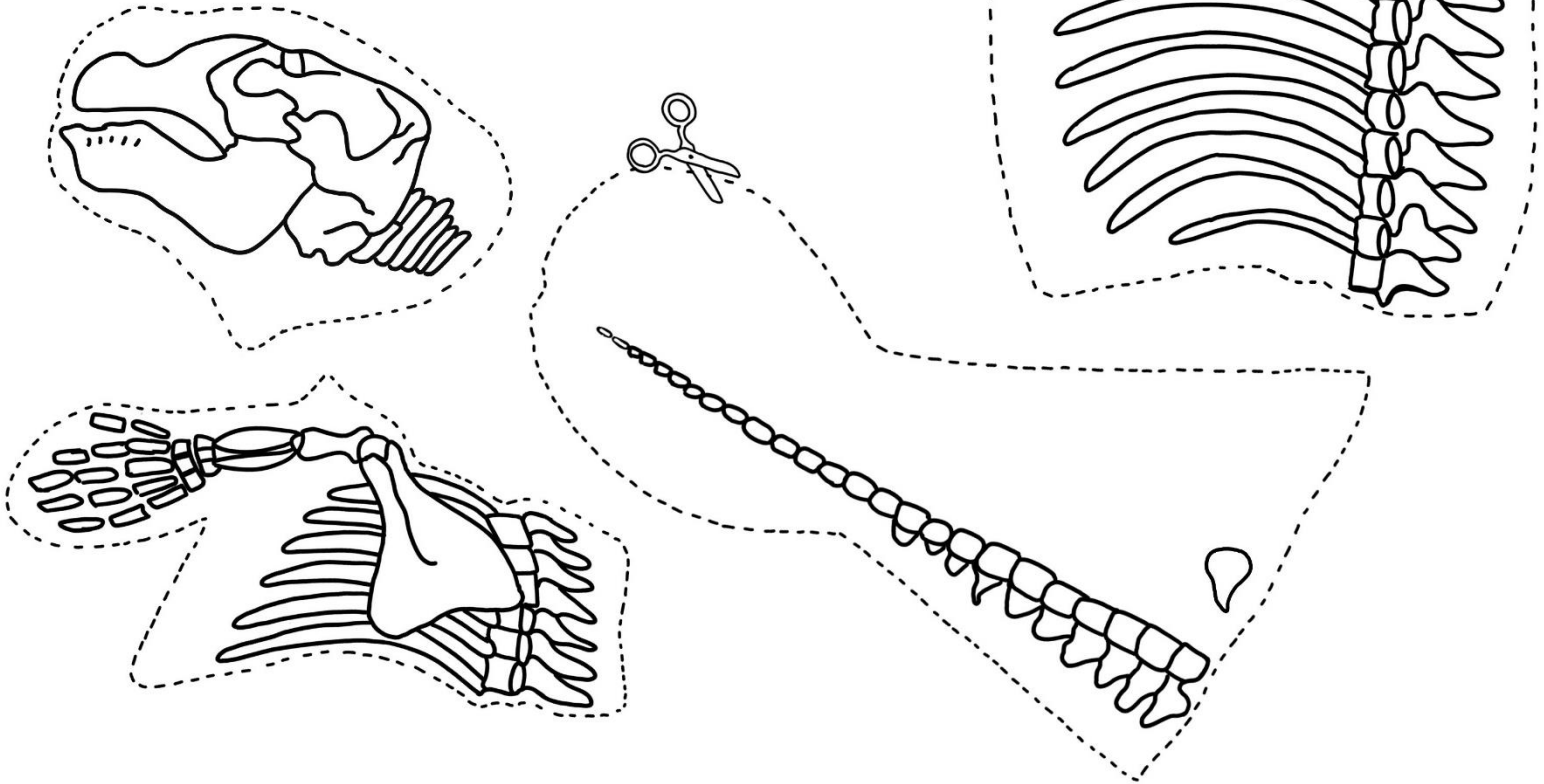
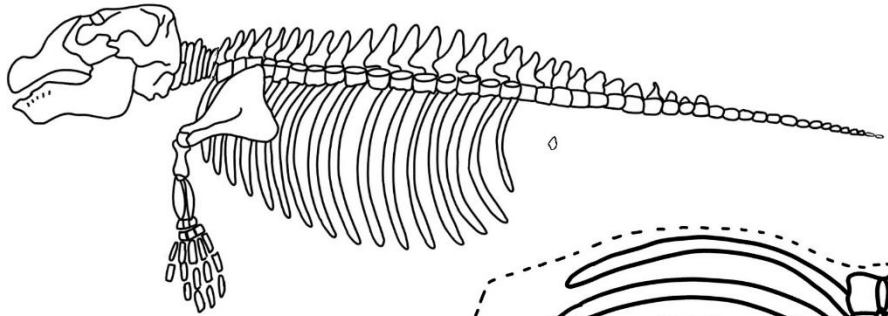
# MANATEE LAGOON

AN FPL ECO-DISCOVERY CENTER®

## Make a Manatee Bone Puzzle

# Make a Manatee

Cut along the dotted lines  
and put together the  
manatee



## Manatee Buoyancy Lesson



### Key Words

- Buoyancy – the ability to float in a fluid, such as water.

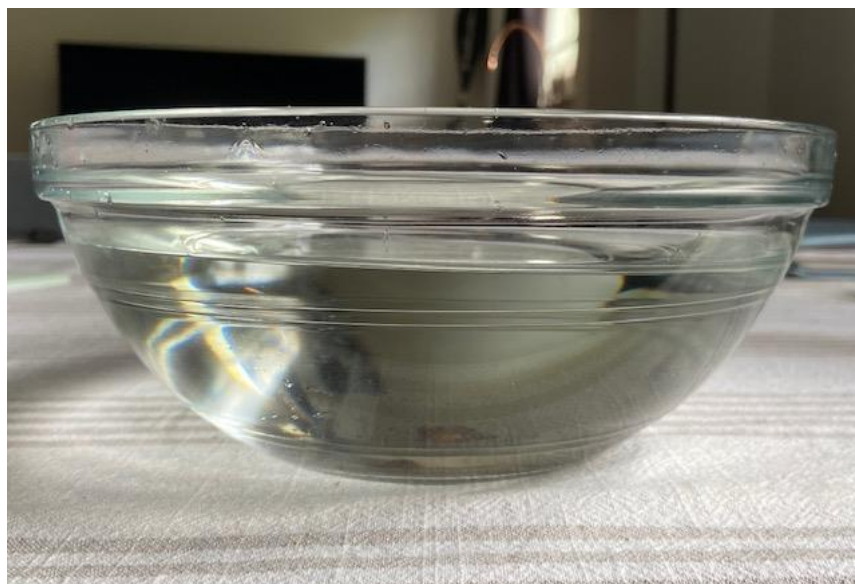
### Materials Needed

- Paper towel roll or toilet paper roll (no paper needed!)
- Tape
- Coins
- Baggie with zip lock top
- Scissors
- Stapler
- Large bowl full of water (around 8 cups)
- Writing/drawing utensils (optional)

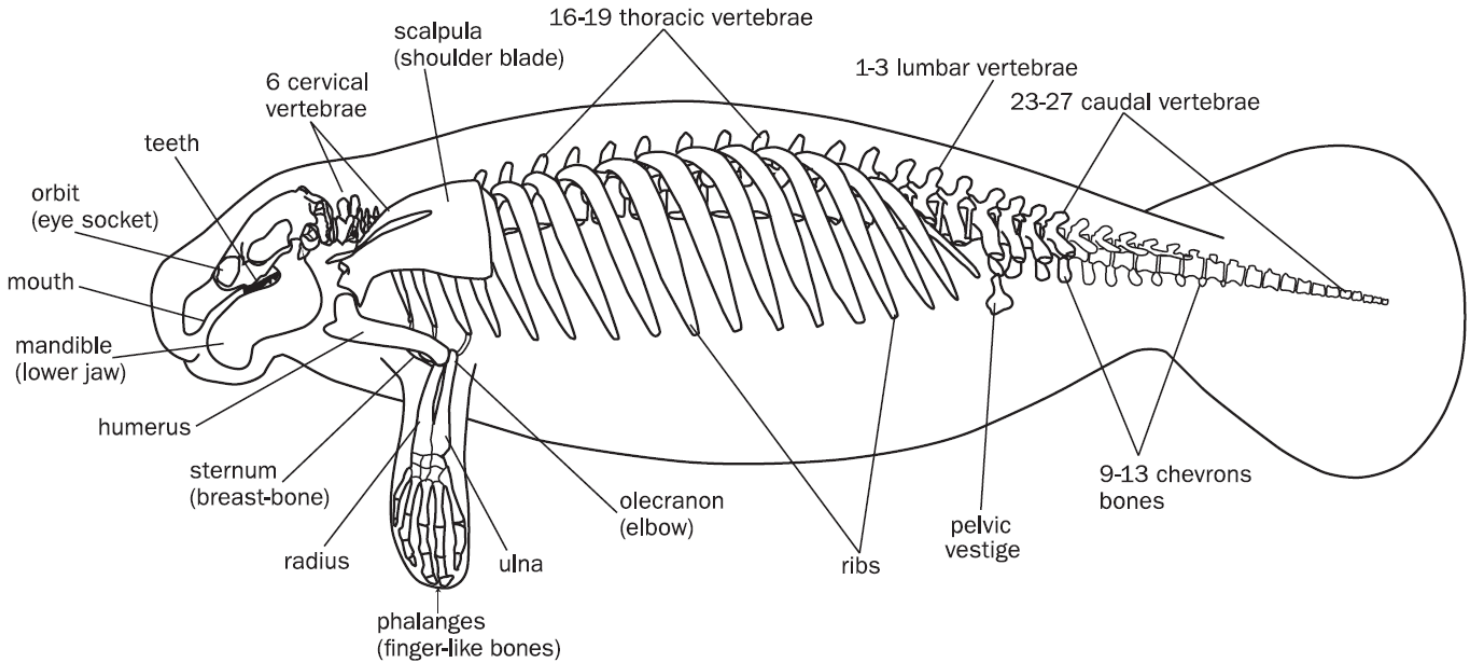
## Manatee Buoyancy Lesson – Page 2

### Step 1

If you are using a paper towel roll, cut it so you have a piece that is about 4 – 5 inches long. This roll represents your manatee. You can decorate your roll to look like a manatee! Then fill a large, deep bowl full of water.



## Manatee Buoyancy Lesson – Page 3



Credit: Florida Fish and Wildlife Conservation Commission

### Step 2

We will now look at how a manatee’s solid, dense bones affect their buoyancy. Manatees have solid bones, unlike our human bones which are hollow because they are filled with a spongy tissue called marrow. This makes manatee bones very heavy.

How do you think having heavy bones can affect a manatee’s buoyancy?

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## Manatee Buoyancy Lesson – Page 4



### Step 3

Tape four or five coins to your “manatee” and staple the tape to the roll. Place the roll with coins attached in the water.

What happens? \_\_\_\_\_

Do the coins make the manatee heavier or lighter? \_\_\_\_\_

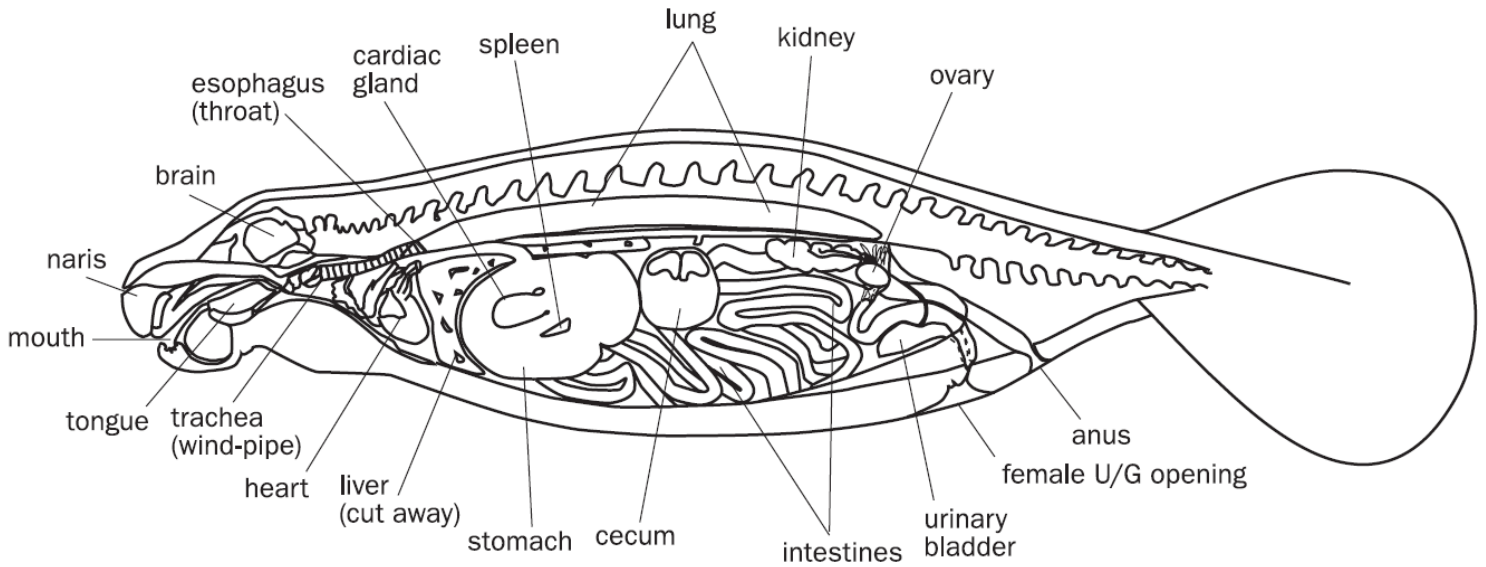
How do they affect its buoyancy? \_\_\_\_\_

\_\_\_\_\_

These coins represent the bones of the manatee.

Was your guess about what would happen correct? \_\_\_\_\_

## Manatee Buoyancy Lesson – Page 5



Credit: Florida Fish and Wildlife Conservation Commission

### Step 4

Now let's look at how a manatee's large lungs affect its buoyancy. Manatees have very long lungs, over three feet long in an adult! They can take deep breaths to fill these lungs with air so they can stay underwater for up to 20 minutes when resting.

How do you think having big lungs can affect a manatee's buoyancy?

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## Manatee Buoyancy Lesson – Page 6



### Step 5

Leaving the coins on the manatee, blow up a small baggie and seal its top. It should look like a balloon. Place it inside the roll. Place roll with baggie in the bowl of water.

What happens? \_\_\_\_\_

Does the air in the bag make the manatee heavier or lighter? \_\_\_\_\_

How does it affect the buoyancy? \_\_\_\_\_

\_\_\_\_\_

This bag represents the lungs of the manatee.

Was your guess about what would happen correct? \_\_\_\_\_

## Manatee Buoyancy Lesson – Page 7

### Step 6

Play around with the amount of air in the bag. See if you can get your manatee to hover in the middle of your bowl without touching the bottom or the surface.

By balancing the density of their bones with the air in their lungs, manatees can hover gracefully in the water.

