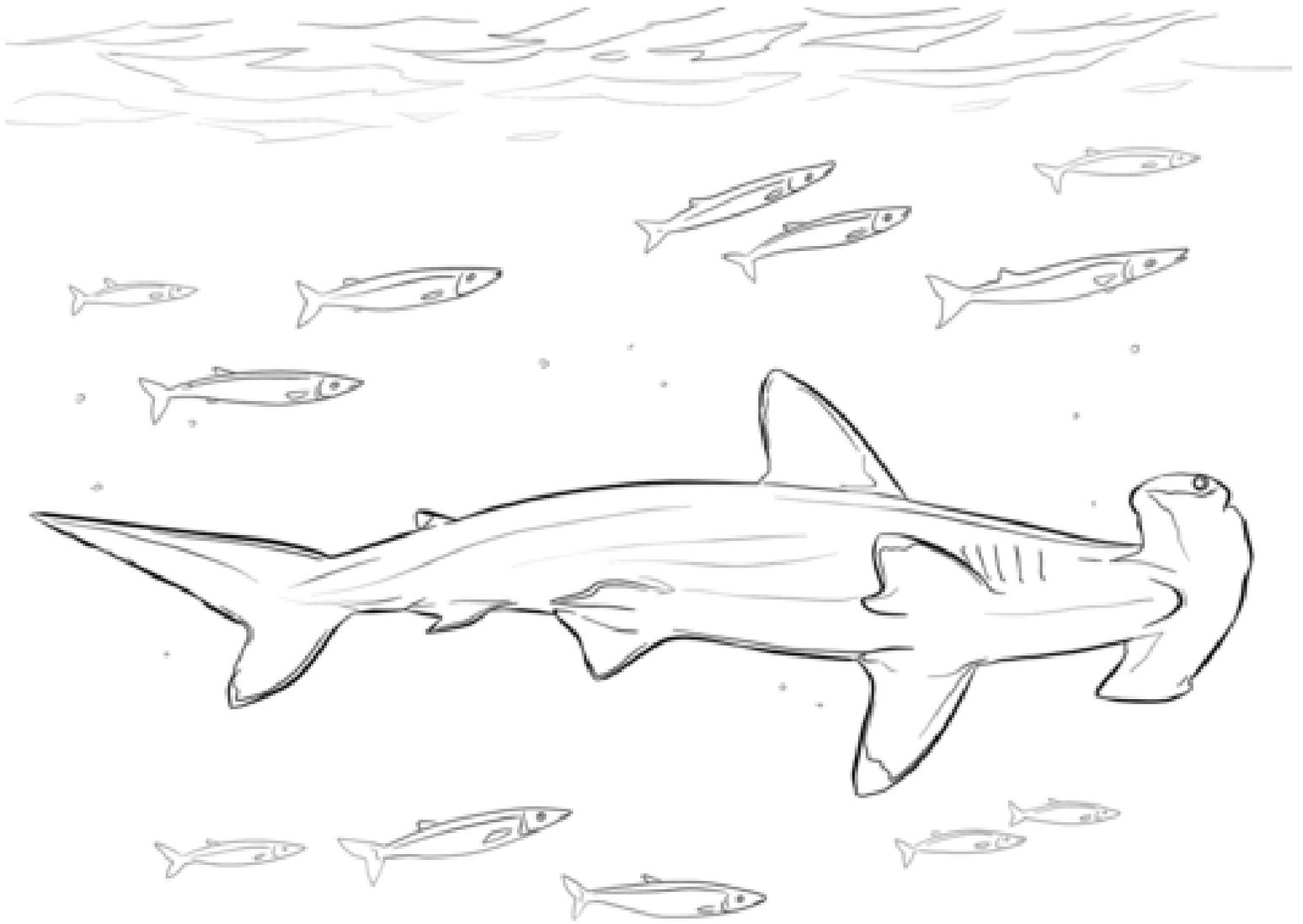


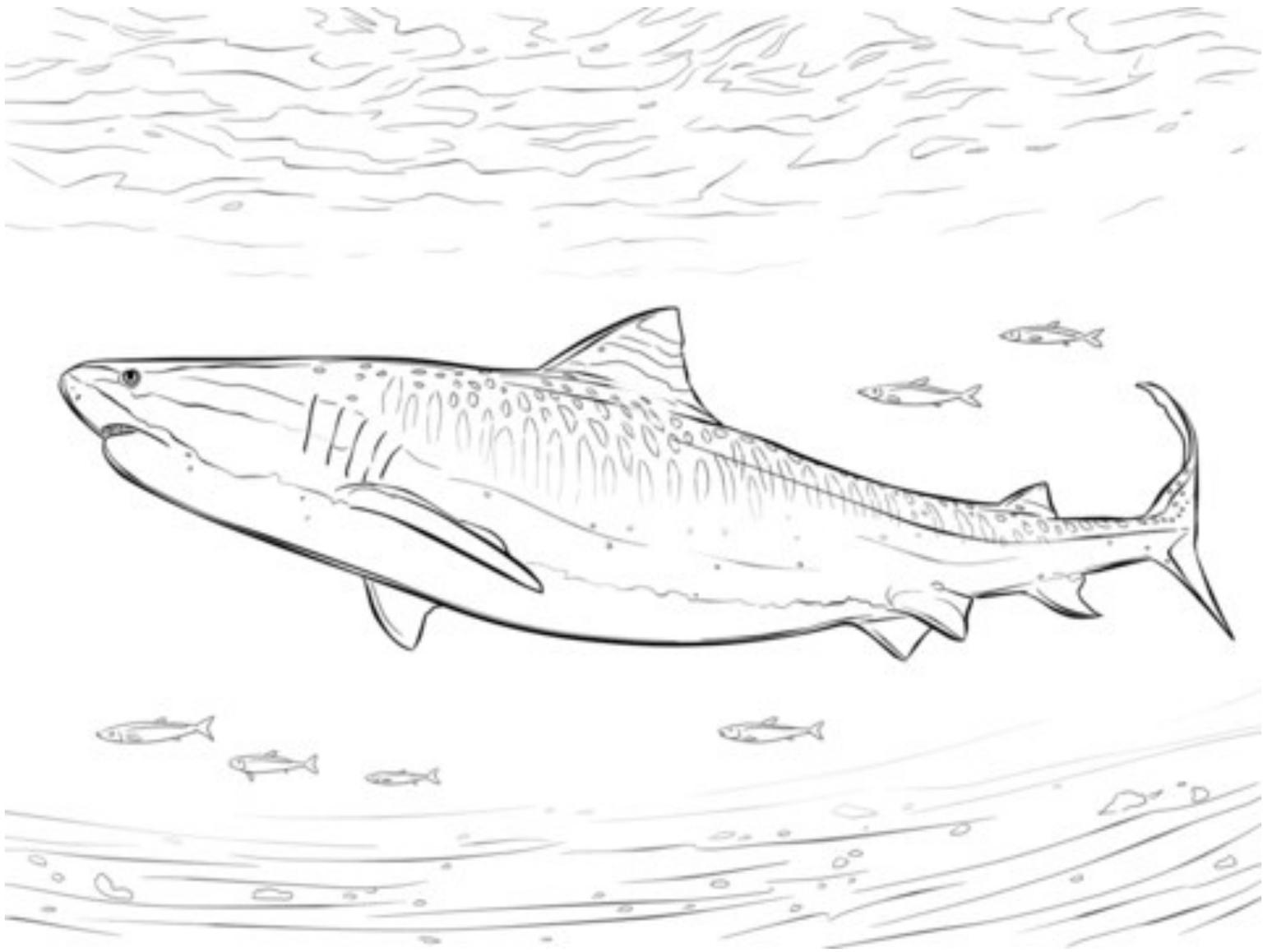
## Great White Shark

- There are more than 400 living species of sharks, taxonomically grouped into 14–30 families. Several larger species can be dangerous to humans.
- Numerous sharks are fished commercially. However, overfishing in the late 20th and early 21st centuries substantially reduced the populations of some shark species.
- White shark populations are found in temperate coastal waters, such as off the coasts of the northeastern and western United States, Chile, northern Japan, southern Australia, New Zealand, southern Africa, and the Mediterranean.
- White sharks are large bulky fishes with a body shaped like a blunt torpedo. Only the belly of white sharks is whitish. They have a contrasting pattern of dark blue, gray, or brown on their back and sides.
- The largest fully grown white sharks do not exceed 6.4 metres (21 feet) in length. Most weigh between 680 and 1,800 kg (1,500 and 4,000 pounds), but some weighing more than 2,270 kg (about 5,000 pounds) have been documented.



## Hammerhead Shark

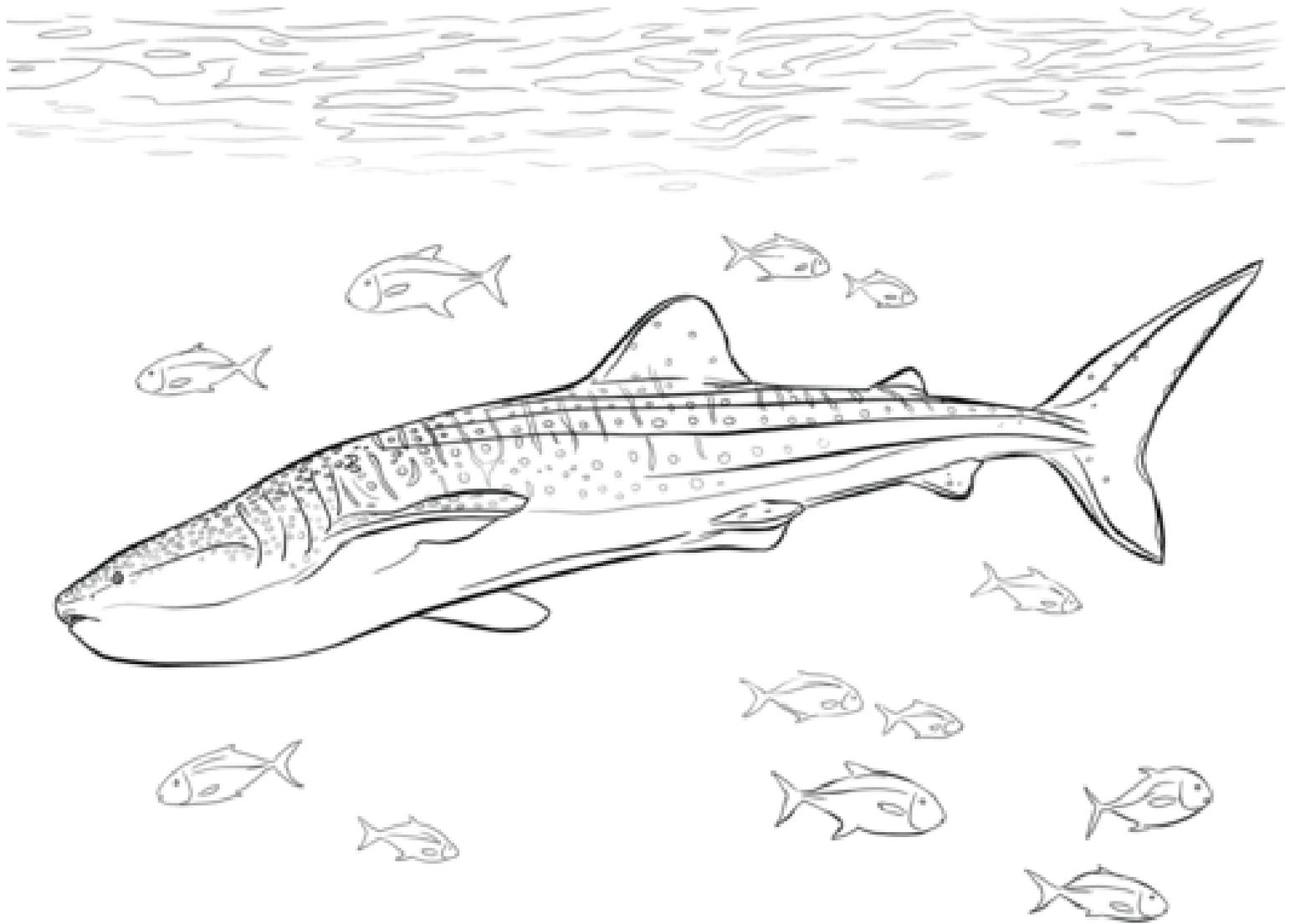
- Hammerhead shark is a name used to identify any of 10 shark species belonging to the genera *Sphyrna* and *Eusphyrna*, which are characterized by a flattened hammer- or shovel-shaped head, or cephalofoil.
- Hammerhead sharks vary in size; the small scalloped bonnethead measures only 90 cm (35 in) long, whereas the great hammerhead grows to over 6.1 metres (20 ft) in length.
- Hammerhead sharks are widely distributed in tropical and temperate marine waters near the coasts and above the continental shelves. They may migrate seasonally, moving equatorward during the winter and poleward during the summer.
- Hammerhead sharks prey on a wide array of fish, cephalopods, and crustaceans, but specific prey varies between the different species.



## Tiger Shark

- The tiger shark is found worldwide in warm oceans, from the shoreline to the open sea.
- They can grow to a maximum of about 5.5 metres (18 feet) long.
- They are grayish and patterned, when young, with dark spots and vertical bars. It has a long, pointed upper tail lobe and large, saw-edged teeth that are deeply notched along one side.
- the tiger shark eats fishes, other sharks, sea turtles, mollusks, seabirds, carrion, and garbage. It has also been known to swallow coal, tin cans, bones, and clothing.

<https://www.britannica.com/animal/tiger-shark-species>



## Whale Shark

- Whale sharks are found in warm marine environments worldwide but mainly in tropical oceans.
- The whale shark is enormous and reportedly capable of reaching a maximum length of about 18 metres (59 ft). Most specimens that have been studied weighed about 15 tons and averaged about 12 metres (39 ft) in length.
- The body coloration is distinctive, light vertical and horizontal stripes form a checkerboard pattern on a dark background, and light spots mark the fins and dark areas of the body.
- The whale shark is one of three large filter-feeding sharks. As the shark swims with its mouth open, seawater enters the mouth cavity and filters through the gill slits. The meshlike tissue of the internal gill slits acts like a sieve, catching plankton and other small organisms while allowing the water to pass through and return to the sea. Periodically the shark will close its mouth to swallow the trapped prey.
- Since 2016 the whale shark has been listed as endangered by the International Union for Conservation of Nature.

# How Sharks Float Experiment's

How can an animal that weighs thousands of pounds float through the ocean? These science experiments show a big part of that answer!

All sharks will sink if they stop moving, and some choose to sink to rest on the bottom of the ocean. There are 3 things that help sharks float in the water

1- Sharks' cartilage skeletons weigh a lot less than bones! The lighter weight makes floating easier, but it isn't the whole answer!

2- Sharks' fin shape is amazing! Just like an airplane wing creates lift by forcing air over the top faster than under the wing, a shark fin creates lift by forcing water over the top of the fin faster than under it. The faster moving water is less dense (Bernoulli's Principle) and creates an upward force!

3- Sharks' oily liver is the third key in how sharks float! Oil will float on water because it is less dense. Sharks' huge oil-filled liver can be 30% of their body weight!

By itself, each of these would not be enough to lift up the entire shark, but all combined the light skeleton, the fin shape, and the boyant liver, is enough to make the shark float as it swims!



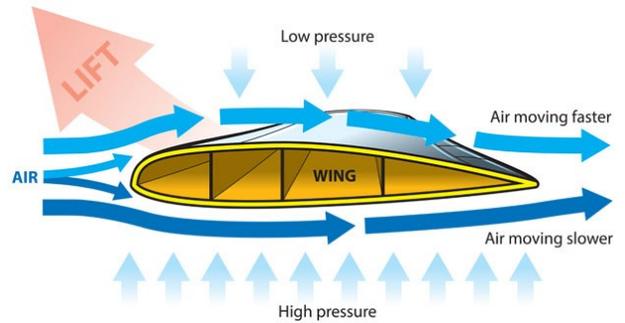
## Experiment 1 - Shark Fin Experiment

### Supplies

- Piece of Tissue Paper

### Instructions

- Hold one end of the tissue right underneath your mouth. The other end will hang down by your chin. Blow across it as hard as you can!
- You are creating a low-pressure zone as the air in front of your mouth moves faster than the air down by your chin. This creates a lift force that will move the tissue up so it is "hanging" straight out!
- This experiment mimics how a shark fin creates lift by forcing water over the top of the fin faster than under it.



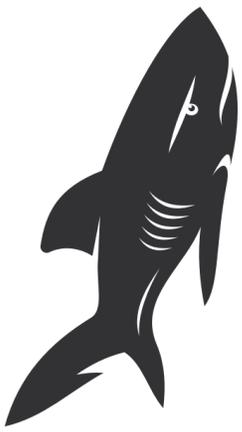
## Experiment 2 - Buoyancy

### Supplies

- 3 Balloons
- Water
- Oil
- Tub or Bucket
- Sharpie marker

### Instructions

- Fill one balloon with water, one balloon with oil and one balloon with air. You only need to partially fill the balloons, not inflate them. You will need about 1/4 cup of liquid. (Note: Be careful not to get very much air in your water-filled balloon. Air will make your water-balloon float, which will confuse your experiment!)
- Draw sharks on the balloons
- Place both balloons in the tub of water and see which floats!
- **Let your child predict what will happen and perform the entire process, or show them the prepared balloons, don't tell your kids what is in them, let them feel them and guess whether they will float or sink, then experiment. When they are surprised, tell them what you did and how it relates to sharks!**

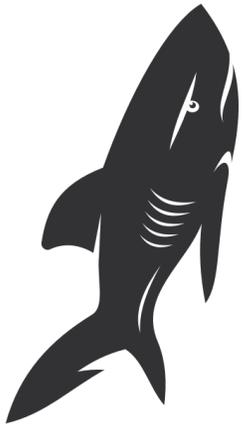


## Attend Virtual Story Time!

If you watched the Mansfield Free Public Library's Summer Library Program Story & Craft Time video you can put this ticket towards a prize or towards the programs raffle.

Name\_\_\_\_\_ Age\_\_\_\_\_

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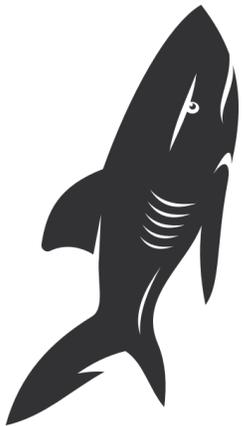


## Made The Craft!

If you made the craft from the Mansfield Free Public Library's Summer Library Program Story & Craft Time video you can put this ticket towards a prize or towards the programs raffle.

Name\_\_\_\_\_ Age\_\_\_\_\_

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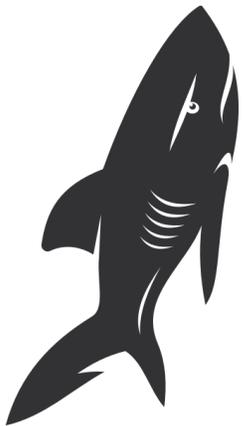
## Read for 15 Minutes!

Take some time to read by yourself or with a parent/guardian.

Title\_\_\_\_\_

Name\_\_\_\_\_ Age\_\_\_\_\_

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## Read for 15 Minutes!

Take some time to read by yourself or with a parent/guardian.

Title\_\_\_\_\_

Name\_\_\_\_\_ Age\_\_\_\_\_