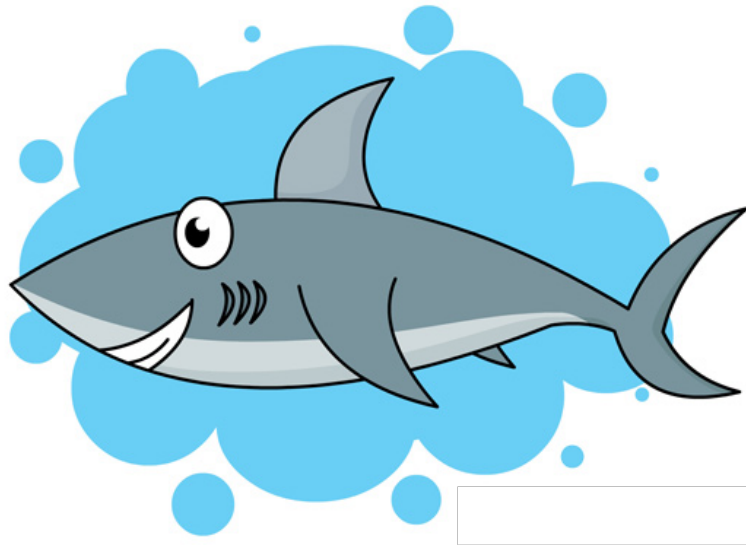




# Manō: Sharks of Hawai'i

— Virtual Project #2 —



NAME: \_\_\_\_\_

GRADE: \_\_\_\_\_

SCHOOL: \_\_\_\_\_

TEACHER: \_\_\_\_\_

FAVORITE SHARK: \_\_\_\_\_



Don't forget to have the digital copy  
of this project ready to go on your  
computer.

You'll need it to click on all of the  
links to the videos!

[www.digitalbus.org](http://www.digitalbus.org)



# Manō: Sharks of Hawai'i

## Welcome



Aloha!

My name is Kumu Dav, welcome to our project about the Manō (that's 'Olelo Hawai'i or Hawaiian for shark). I hope you'll join me on this learning adventure and help me answer some questions!

OK! So what are we going to do???



We're going to go over some facts about sharks! We'll learn about their anatomy, behavior, population, and myths. We'll also do a dissection! Our goal is that you'll be able to share all this information with your classmates, teacher, and family!

When you complete everything, you'll get a Digital Bus goodie bag!

So what do... I have to do?



You'll watch some videos, look up facts and information on the internet, answer some questions, and come up with your own questions to ask me or your teacher!

Uh, ok. But how do I ask you questions??



At some point during this project we'll either meet on a virtual call or I'll come to your classroom! Your teacher will know how to contact me :)

What do you know about all this stuff anyway? Why should I do all this with you?



Good questions, I'm both a scientist and a teacher! And for my job here in Maui I make cool science projects for students all around the island. From 1st grade all the way to 12th grade. It's called The Digital Bus! If you want to see pictures, [CLICK HERE](#).

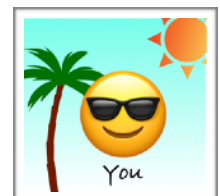
We do things like use microscopes, learn to fly drones, figure out how the oceans are polluted, things like that. Some of our projects are in person, and others (like this one) are all virtual. So you'll need a computer and the internet for this project.

I guess that sounds ok. I hope this isn't going to be booorrrrinngggg.

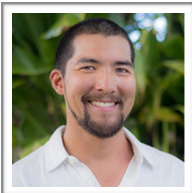


If you ever think it's boring, find out something about sharks that you're actually interested in and tell me about it!

Ok, I'll give it a try!





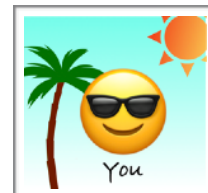


Great! Let me explain a little bit about things you'll find in the lessons. I'll put links to online videos and facts right into our conversation.



Let's give it a try. Here is your first video:  
[CLICK HERE](#)

Haha! That's silly



I love bears!! Ok, here are some more things you'll find throughout the lessons:

#### YELLOW BOX

##### — RESOURCES —

In here you'll find links and information with additional resources for you to explore. Sometimes I'll ask you questions about this stuff. Sometimes I'll just put cool stuff in here.

#### PURPLE BOX

##### — RESEARCH —

In here you'll find the directions for your little research project! I'll also put a list of materials you might need. You'll always have to share your research with your family!

#### ORANGE BOX

##### — TANGENT —

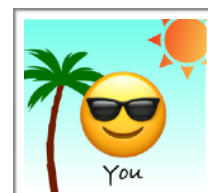
In here you'll find information that is related to our conversation, but it covers a different topic. For example I might ask you to try some math about the volcanoes we are learning about.

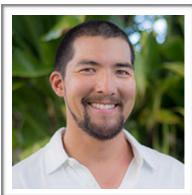
#### PINK BOX

##### — VOCABULARY —

In here you'll find all the words you should look up and understand. Maybe you'll already know a bunch of them, but maybe some will be new. The words will also be underlined in the lesson.

Ok, this seems pretty easy so far!

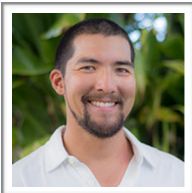




During the lesson I'll ask you questions too. They will be in big red letters. Like this:

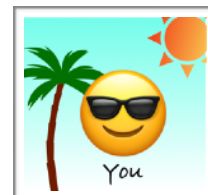


**What is your favorite food?**



Mine is pizza. But I try not to eat too much of it; it's not very healthy!  
Your answers can go in your blue bubble! Like this:

ANSWER: \_\_\_\_\_



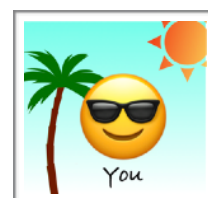
Video X.1



Finally, you can always click on my picture to hear me reading these text bubbles! And sometimes my picture will have a pink frame. Click on the video icon to see me explaining things in detail! I'll either be inside the Digital Bus or taking a field trip.

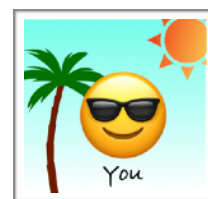
Go ahead, try it out!

Got it!



Before we start our lesson, do you have any questions for me?  
Maybe you want to know more about me, or more about what we're going to do?  
I can't wait to hear from you!

Questions and things I want to talk about





# INTRODUCTION

This part includes:

- ✓ **8** Pages
- ✓ **11** Questions
- ✓ **1** Tangent
- ✓ **4** Digital Bus Videos
- ✓ **18** Vocabulary Words
- ✓ **1** Introduction Quiz

DATE ASSIGNED: \_\_\_\_\_

DATE DUE: \_\_\_\_\_

my notes... my drawings... my thoughts... my ideas...

# Manō: Sharks of Hawai'i

## Introduction



Video 2.1



Hey again! Ready to begin!?  
Can you please answer a few questions just to see  
what you already know about sharks?  
It's just a game so don't worry if you're aren't  
sure of the answers, you'll be able to try again  
later! [CLICK HERE](#)  
Let's continue by finding out some basic facts  
about **Sharks**! Here is a short movie for you to  
watch: [CLICK HERE](#)



Ok, here are some questions from the movie just to  
warm up our brains:



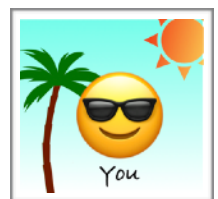
**1. What is the name of the biggest  
living shark today?**

ANSWER: \_\_\_\_\_



**2. What is the name of the biggest  
shark ever?**

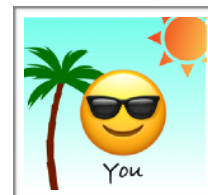
ANSWER: \_\_\_\_\_





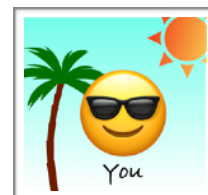
3. How many teeth can a shark loose in its lifetime?

ANSWER: \_\_\_\_\_



4. What is the fastest shark?

ANSWER: \_\_\_\_\_



I'm sure you already knew how awesome sharks are, but it's always nice to see a short video about it.

Before we really start with our lesson, here is the outline on what we are going to cover:



Video 2.2



1. Is a shark a fish?
2. What is the shark population?
3. How do we identify sharks?
4. The shark dissection!



Let's get started with the first super important question! I know it's going to sound silly.



What is a fish?

What do you mean, what is a fish? I know what a fish is!



Video 2.3



I mean, what makes a fish a fish? Can you come up with 5 things that make a fish a fish?



Check out some of these pictures of fish we find in Hawai'i, then try to come up with the answer to what makes a fish... a fish!



Butterfly Fish



Jack



Unicorn Fish



Cleaner Wrasse



Eel



Pet Goldfish

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



### TANGENT: 'Ike Hawai'i

The names of the fish above are in English, however, since we are learning about animals in Hawai'i, we must learn their 'Olelo Hawai'i (Hawaiian) names. Get a piece of paper, draw those six fish and do some research to find their Hawaiian names. Write them nice and big on the paper!





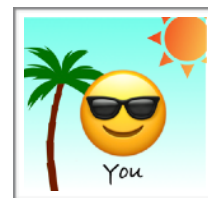
Awesome! You should have come up with something like this:

A fish is an animal. It lives in the water. It has gills to breath. It has fins. It has scales.

Maybe you also put down things like this:  
Some can be big, some small. Some eat meat, some eat plants. Some lay eggs. It can be cold blooded.

There are a lot of answers you could have written down, but those five that are in yellow are the ones I want you to remember!

Got it! I'll go back and double check everything.



Ok, so now that we know how to explain what a fish is, check out these pictures and answer this:

**Is a shark a fish?**



Whale Shark

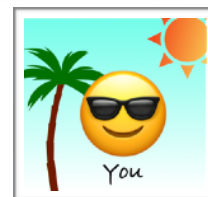


Tiger Shark



White Tip Reef Shark

ANSWER: \_\_\_\_\_



I'm going to give you the answer on the next page, don't peek! Just think about your answer one more time!

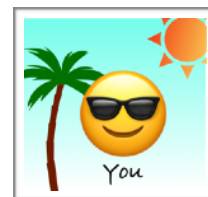




Sharks are fish! People seem to think they are some other type of animal, but they're fish!  
**How can you explain why sharks are fish?**

\_\_\_\_\_

\_\_\_\_\_



Even though sharks are fish, there is something that makes them different from a lot of the other fish! Let's compare these two animals:

List of all fish in the shark group!  
[CLICK HERE](#)



**Tiger Shark**



**Jack**

List of all fish in the other group!  
[CLICK HERE](#)



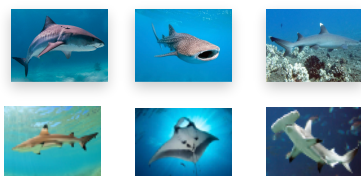
We know that both of these animals are fish. All of the common fish can be separated into two different groups of fish!



In one group there are all the fish that we commonly think of when talk about fish, like the jack and butterfly fish. In the other group we have the sharks and their cousins, the rays!

### GROUP 1

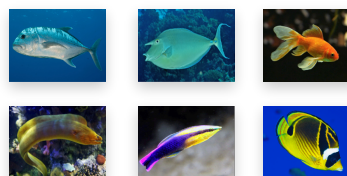
THE \_\_\_\_\_



### ALL FISH IN THE WORLD

### GROUP 2

THE \_\_\_\_\_

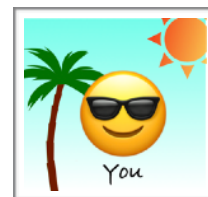




Can you come up with a few more examples that would go in Group 2 with the Jacks and Butterflyfish? You can think of cartoons too!

\_\_\_\_\_

\_\_\_\_\_

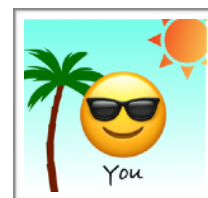


Now here is the crazy part! There is only one big thing that makes all the sharks so different from the other fish that we put them in a different group.



**Can you name the one thing that makes sharks different from all the other fish?**

ANSWER: \_\_\_\_\_



If you're stuck, now is a good time to do a little bit of research on your own to try and find the answer!



Maybe you got it, maybe not... either way I want you to grab your ear. Can you smoosh it around a bit? Can you also give the top of your head a few knocks?



One should be hard and one should be soft. Under your hair and skin on your head is your skull, and your skull is made of bone. Your ear is made of something else...



Video 2.4

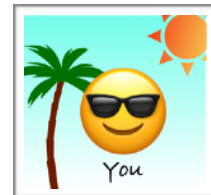


It is made of cartilage.

More information about cartilage compared to bones

[CLICK HERE](#) and [CLICK HERE](#)

What does my ear have to do with sharks?!

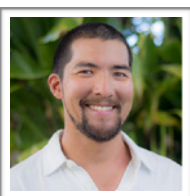
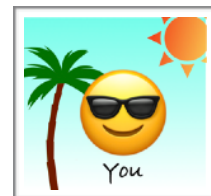


Well, the sharks have a skeleton, like you, but their skeleton is only made of cartilage. They don't have any bones!



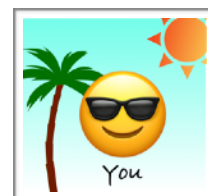
All of the other fish, like that goldfish and the jacks have skeletons too, and theirs are made of bones!

So the one thing that makes sharks different from all the other fish is that they don't have bones?



You got it! They have cartilage skeletons. We call them the cartilaginous fish. Based on that name, what do you think we call all the other fish?

ANSWER: \_\_\_\_\_





You got it again, the **bony fish**! Go back to page 9 and write down the names of the two different groups of fish in the bubbles.

That was a great start to talking about sharks. I hope you have some questions, and maybe some things you'd like to share about sharks! Write them down to talk about it with your class, teacher, and me!

Questions and things I want to talk about



#### VOCABULARY

Shark

Fish

Population

Identify

Dissection

Animal

Gill

Fin

Scale

Skull

Bone

Cartilage

Cartilaginous Fish

Bony Fish

**REVIEW YOUR KNOWLEDGE WITH A  
SHORT QUIZ ABOUT THE INTRO**  
[CLICK HERE](#)



# PART 1: Population

This part includes:

- ✓ **8** Pages
- ✓ **7** Questions
- ✓ **2** Tangents
- ✓ **1** Research Project
- ✓ **4** Digital Bus Videos
- ✓ **13** Vocabulary Words

DATE ASSIGNED: \_\_\_\_\_

DATE DUE: \_\_\_\_\_

my notes... my drawings... my thoughts... my ideas...

# Manō: Sharks of Hawai'i

## PART 1: Population



Video 2.5



Welcome back! Last time we figured out that sharks are just another kind of fish, but there is one huge thing that is different... Their skeleton is made of cartilage.

I remember; got it!



Now that we know this, we can focus more on the sharks. In this lesson we'll talk about how many sharks there are: their population; and we'll talk about things that are affecting their populations and how we are protecting sharks: threats and conservation.



Check out this map of the world, the light blue represents the oceans. Let's try to find out how many different kinds of sharks live in all the oceans in the world.





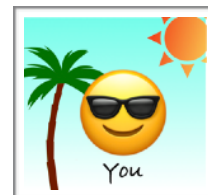


First of all, can you find Hawai'i on that map?



Ok good. I want you to come up with 3 different kinds of sharks (different species) that you already know. Don't look it up!  
*Example: The black-tip reef shark*

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_



I bet you came up with those three pretty quickly.



**How many different species of sharks live in the entire world?**

Take a guess without looking on the internet!

**SPECIES OF SHARKS  
IN THE ENTIRE  
WORLD**

My  
guess is:

The  
correct answer is:



Ok, but what about here in Hawai'i?  
**How many different species of sharks live in the ocean around Hawai'i?**

**SPECIES OF SHARKS  
IN HAWAI'I**

My  
guess is:

The  
correct answer is:





Try to find the correct answers on the internet!  
Was it tricky to find one constant answer to these questions from different websites?



It's really hard to find an exact number! Some resources will say 392 species in the world, some say over 400, some say 421... so who is correct?



Well, we don't have an exact number, and many scientists disagree if some species are actually new ones or just variations of existing species.



So for our lesson, we are going to make sure we include the word "ABOUT" in our answer.  
There are **ABOUT 400** species of sharks in the world.



And there are **ABOUT 40** species of sharks found in Hawai'i.

Make sure you go back to the previous page and write these answers down! (Don't forget "about")

Spend some time exploring some of the sharks on these websites below!

**What is your favorite shark so far and why?**

**SHARKS OF THE WORLD**

[CLICK HERE](#) and [CLICK HERE](#)

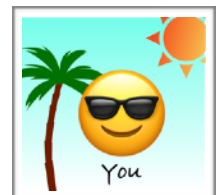
**SHARKS OF HAWAII**

[CLICK HERE](#)

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Video 2.6



My favorite shark here in Hawai'i is the Tiger Shark. But recently I've been fascinated by the Greenland Shark (it doesn't live in Hawai'i)!



Did you know that scientists are still discovering new species of sharks. Just this year (2020) they found some amazing new ones.

[CLICK HERE](#)

### RECENT SHARK SPECIES DISCOVERIES

[CLICK HERE](#) and [CLICK HERE](#) and [CLICK HERE](#) and [CLICK HERE](#)

Can you find more?



Now that we know how many species there are, we can start to discuss the problems some of these sharks are facing.



Did you know that many of the sharks around the world are threatened or even endangered?



Many scientist estimate that the population of sharks have declined by over 90% in the past 50 years.



Humans kill around 100 million sharks every year.

[CLICK HERE](#)

Woah, that's a lot.  
But why should we care? Aren't they super dangerous to people too, so less sharks is good, right?





No way! We'll get into why sharks aren't as dangerous as we think later on. We must understand that sharks are super important!



Video 2.7



Sharks are an example of an apex predator. They are usually on the top of the food chain. So if too many of them are killed, the number of smaller prey that they usually eat will increase, which can completely mess up the food web and ecosystem.  
[CLICK HERE](#)



Video 2.8



You might be asking yourself, why are humans killing so many sharks?

There are many reasons we kill sharks, but the reasons with the most impact are:  
(*CAREFUL: These links show some sad pictures of dead sharks*)

1. For food, specifically shark fin soup.  
[CLICK HERE](#)
2. They are bycatch (caught by accident) through long line fishing.  
[CLICK HERE](#)
3. They are killed because humans are scared of sharks (this is called shark culling).  
[CLICK HERE](#)
4. Their habitats are being destroyed.  
[CLICK HERE](#)

**Tangent:**  
**'Ike Hawai'i**

For many reasons Manō are extremely important to the Hawaiian culture:  
[CLICK HERE](#)

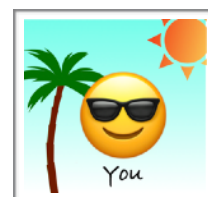
Can you find more reasons and share them with me?



In your opinion, which one of the reasons above do you feel most strongly about, and why?  
There is no wrong answer! This is an opinion.

\_\_\_\_\_

\_\_\_\_\_



## MORE RESOURCES ABOUT SHARK CONSERVATION

The ten most endangered sharks. [CLICK HERE](#)

Shark population in Australia. [CLICK HERE](#)

Shark finning. [CLICK HERE](#)

What if there were no more sharks? [CLICK HERE](#)



There is some good news though!  
[CLICK HERE](#)



On top of everything, another huge problem is that sharks have gotten a very bad reputation. They have been **vilified** (made into bad guys).

While it is true that some sharks can be dangerous to humans, this doesn't mean that sharks just want to eat our brains at every chance they get!

We humans like to be entertained by stories of monsters in the movies, and the shark makes a very good monster.

So people have gotten to know sharks through movies, TV, and other stories as mindless killing machines. But this just isn't true at all!

Sharks are actually very shy, and they can be picky eaters.

In conclusion, people have learned false information about sharks through movies, this leads to people not liking them, which then means people don't care about them.

This has lead to many **myths** about sharks: things people believe that aren't true.



### Tangent: ARTS AND CULTURE

Can you make of  
list of movies  
that show sharks  
as being scary  
monsters?



Can you come up with one myth about  
sharks that you may have heard?

\_\_\_\_\_

\_\_\_\_\_



### MORE SHARK MYTHS!

[CLICK HERE](#) and [CLICK HERE](#) and [CLICK HERE](#) and [CLICK HERE](#)



I think it's time for a little research project.

Not too sure about this! What do I have to do?



You're going to pick one of the main threats to sharks. Maybe it's listed on page 17. (Don't forget that believing false information can also be a threat).



1. Get a big sheet of paper.
2. Include some shark facts.
3. Write the threat you chose.
4. Add some facts, pictures, drawings.
5. Include ways to help
6. Color and make it pretty!
7. BE CREATIVE!



The goal is to create a little presentation that you can share with your family and with me!

I'm sure you'll come up with some awesome work!



Woah. That was a lot of stuff. Take your time. I'm sure you're going to have some questions now. I think this would be a good time to write some down. Don't forget to plan your video call with me!

Questions and things I want to talk about



#### VOCABULARY

Conservation

Species

Threatened

Endangered

Apex Predator

Food Web

Ecosystem

Shark fin soup

Bycatch

Long-line fishing

Habitat

Vilified

Myth

**REVIEW YOUR KNOWLEDGE WITH A  
SHORT QUIZ ABOUT PART 1  
[CLICK HERE](#)**



## PART 2: Anatomy

This part includes:

- ✓ 8 Pages
- ✓ 8 Questions
- ✓ 1 Tangents
- ✓ 4 Digital Bus Videos
- ✓ 11 Vocabulary Words

DATE ASSIGNED: \_\_\_\_\_

DATE DUE: \_\_\_\_\_

my notes... my drawings... my thoughts... my ideas...



# Manō: Sharks of Hawai'i

## PART 2: Anatomy



Video 2.9



Aloha again! So far we've covered some basics about sharks, their population and their threats. Now it's time to focus on the animal itself.

Cool! Is this when we learn about the different kinds of sharks?



Don't worry we'll get there! Before we do that though, we need to learn a bit about their anatomy.

Anatomy, is that the different parts of the body?

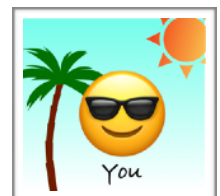


You got it! By learning some the external anatomy (the body parts on the outside), we'll be better able to identify the different sharks.



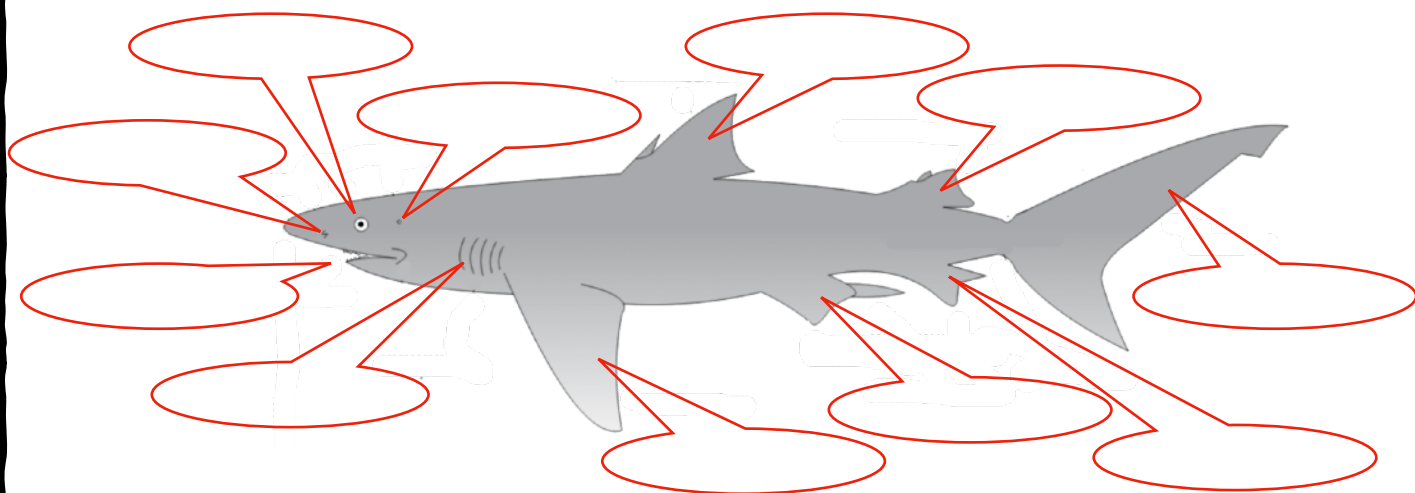
We'll focus on the internal anatomy (the body parts on the inside) a bit later when we do a dissection!

Ok, sounds good!





First of all let's check out this drawing of a shark. There are a bunch of blanks for you to fill out!



Are there any body parts of the shark that you already know?



Here is a list of body parts you can use! It's ok if you aren't totally sure, this is just practice!

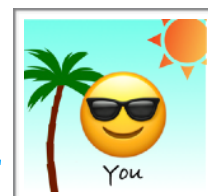
### VOCABULARY

Eye — Caudal fin — Gill slits — Mouth — Pectoral fin — Second dorsal fin — Nostrils — Anal fin —  
First dorsal fin — Spiracle — Pelvic fin



Count the number of fins on the shark,  
how many are there?

\_\_\_\_\_





You should have counted six. Here is something to remember, the fins on their belly side comes in pairs!



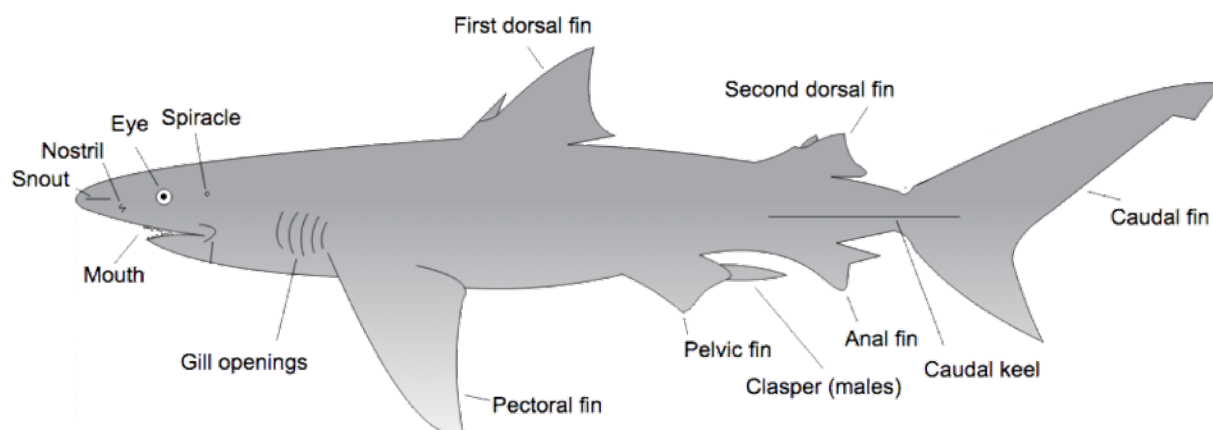
I want you to be totally familiar with the names of three types of fins: *The first dorsal fin, the pectoral fins, and the caudal fin.*



Video 2.10



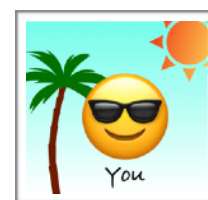
Here is the same drawing with the correct answers for you to compare your answers to! (There are extra body parts here that I did not ask above)



Those three types of fins I had you learn... Each one has a purpose, can you figure out what they are?

### ANSWERS

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



**Shark fin  
purposes**

[CLICK HERE](#)

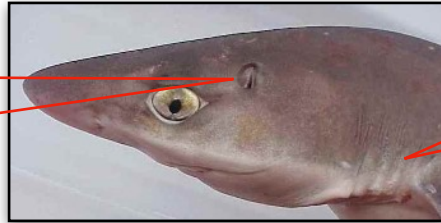


It's important to know these different fins because they are going to help us later when we are trying to identify all of the sharks!



Let's check out some other parts of the shark: The **gills** and **spiracles**.

SPIRACLE



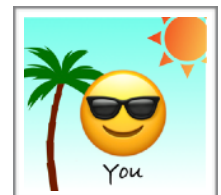
GILLS



What we see on the outside of the shark are just the gill openings (or gill slits), the actual gills are inside of the sharks.

**What is the function of gills?**

\_\_\_\_\_



We humans don't have gills, instead of gills, what body part do we use that serves the same function as gills?

\_\_\_\_\_



The spiracles are small openings behind the eyes that help some species of sharks pump water into their gills.



Just like us, sharks have eyes, nostrils, a mouth, ears (the ears are under the skin though), and skin.

Can you tell me what senses go with each of these body parts?

### ANSWERS

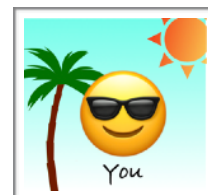
EYES: \_\_\_\_\_

NOSTRILS: \_\_\_\_\_

MOUTH: \_\_\_\_\_

EARS: \_\_\_\_\_

SKIN: \_\_\_\_\_



Sharks have an amazing sense of smell, much better than ours! However, the stories that they can smell a drop of blood from miles away is just a myth. Their smell isn't quite that good.

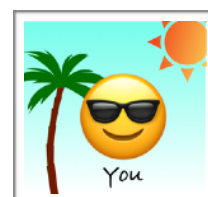


Sharks have the same five senses that we have! But they also have a super amazing sixth sense. It's really like a super hero type of thing.



Sharks (and their cousins the rays) can feel electricity!

What? Like they can feel if there is a lamp close by or something?





Haha, well kind of! Every single animal actually gives off a little bit of electricity! You, your best friend, your dog, a fish, an octopus, all of them.



Now we're not talking about the same amount of electricity that powers a TV. The heart beat of an animal has a tiny bit of electrical current. That's what the shark can feel.



Sharks can do this thanks to special organs called the **Ampullae of Lorenzini**. They are small pores all around their snout filled with a special kind of electric sensing jelly.

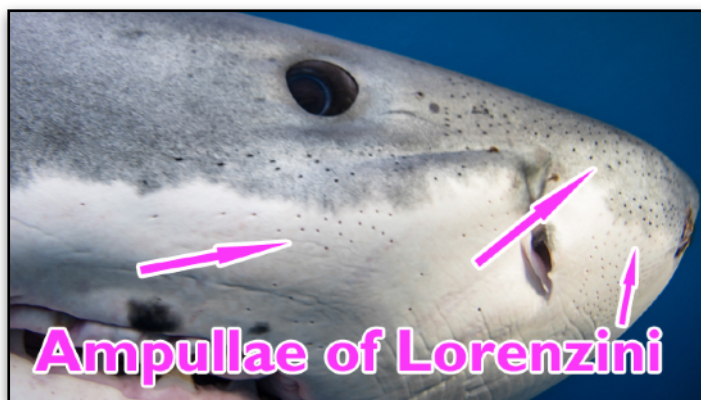


#### Tangent:

#### Science

Many other animals that have special senses that humans don't have.

[CLICK HERE](#)



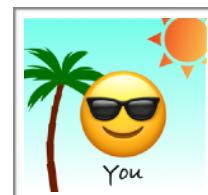
#### The Sixth Sense

[CLICK HERE](#)

[CLICK HERE](#)

In depth:  
[CLICK HERE](#)

Jelly?! Kind of gross. And kind of cool!



Video 2.11



When sharks hunt, they can use this extra sense to find their prey. It helps them out when their other senses are obscured for some reason, like when the water is murky.



Ok, let's move on to the insides of the sharks! Later on, you'll be watching me dissect a shark to better understand the functions of the different parts. For now, let's just do a quick overview of some of the parts.





Video 2.12



We're going to look at three different body systems and learn about some organs in each one. Even though we're learning about sharks, humans also have these body systems!



Can you do a bit of research and find out what each of these three body systems do? Don't forget, they control the same thing for sharks as for humans or dogs, or cats!

**Digestive System**

---



---

**Circulatory System**

---



---

**Nervous System**

---



---



Can you name one organ that is a part of each body system?

### ANSWERS

Digestive System organ: \_\_\_\_\_

Circulatory System organ: \_\_\_\_\_

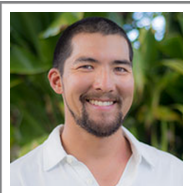
Nervous System organ: \_\_\_\_\_



There are many organs associated with each system. Remember the ones you picked because you'll have to find them during the dissection!



i you now that there is a ro ession o where you must now all o the o y systems an all o the or ans o animals so that i somethin oes wron they can try to hel the animal o you now the name o this ro ession



We'll go more in detail about anatomy during the dissection, so for now, we're all done! I hope you have plenty of questions and comments!

Questions and things I want to talk about



#### VOCABULARY

Anatomy

Eye

Caudal fin

Gill slits

Pectoral fin

First dorsal fin

Spiracle

Senses

Ampullae of  
Lorenzini

Body systems

Organ

**REVIEW YOUR KNOWLEDGE WITH A  
SHORT QUIZ ABOUT PART 2  
[CLICK HERE](#)**





## PART 3: Identification

This part includes:

- ✓ 16 Pages
- ✓ 15 Questions
- ✓ 1 Research Project
- ✓ 3 Digital Bus Videos
- ✓ 12 Vocabulary Words

DATE ASSIGNED: \_\_\_\_\_

DATE DUE: \_\_\_\_\_

my notes... my drawings... my thoughts... my ideas...

# Manō: Sharks of Hawai'i

## PART 3: Identification



Video 2.13



Welcome back! Ok, let's identify some sharks!

Cool! Finally!!

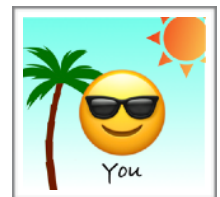


So here is the plan: since we can't identify every single shark species in the world, we're going to identify and learn about some common sharks of Hawai'i.



Do you remember, without looking, about how many different species of sharks are found in Hawai'i?

\_\_\_\_\_



Of those, we're going to pick some of the more common ones! We'll go over 12. Of course, you can always research some of the other ones!



For each shark that we go over, I'll ask you the same set of questions that you'll have to answer. Here are the questions I'll be asking you. Can you practice using yourself (a human)?

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_



Ok, let's get started. Here are small pictures of all of the sharks with their english names in the box below.

**How many can you fill out without looking it up?**

If you're stuck, don't worry, the answers are found later in the lesson!



1.



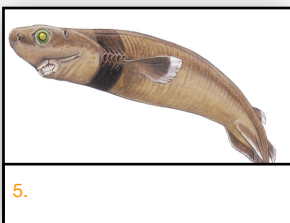
2.



3.



4.



5.



6.



7.



8.



9.



10.



11.



12.

Thresher Shark - Tiger Shark - Hammerhead Shark - Black-tip Reef Shark - Cookie-cutter Shark - Great White Shark - White-tip Reef Shark - Gray Reef Shark - Galapagos Shark - Oceanic White-tip Shark - Sandbar Shark - Whale Shark

# (1) THE GREAT WHITE SHARK



## Resources

### Facts 1

[Click Here](#)

### Facts 2

[Click Here](#)

### Deep blue 1

[Click Here](#)

### Deep blue 2

[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_



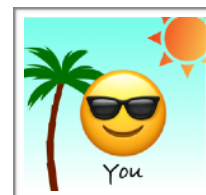
We don't see many great whites close to shore because they usually prefer deeper water, but sometimes they show up! The picture to the left was taken in Molokini Crater, Maui in 2012!



[CLICK FOR VIDEO](#)

Even though this 12 foot shark is a big predator, it didn't bite or eat anyone who was swimming and snorkeling that day. It really doesn't like to be around people at all, so it just quickly swam away.

COMMENTS AND QUESTIONS ABOUT THE GREAT WHITE:



## (2) THE WHALE SHARK

PS: I  
took this  
picture!



### Resources

#### Facts

[Click Here](#)

#### Video

[Click Here](#)

#### Hawai'i Research

[Click Here](#)

#### Hawai'i whale shark

[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_

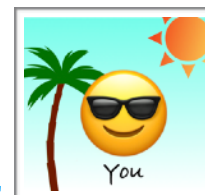


The whale shark is one of my favorites!  
**Can you go outside and measure out the  
length of a whale shark?**



Even though it's the biggest fish in the  
ocean, it only eats little tiny fish and plankton.  
For reasons we don't understand yet, more and more  
have shown up in Hawai'i in the last 10 years!

COMMENTS AND QUESTIONS ABOUT THE WHALE SHARK:





**(3)**  
**THE**  
**THRESHER**  
**SHARK**



**Resources**

**Facts**

[Click Here](#)

**Hunting**

[Click Here](#)

**Tail Smacking**

[Click Here](#)

Hawai'i thresher shark

[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_



These sharks are pretty rare to see because they live out at sea. Every now and again one might be spotted by a boat.  
Do you remember the real name of the tail fin?



I think the coolest thing about the thresher shark is the way it hunts! Check out some of those videos.

**COMMENTS AND QUESTIONS ABOUT THE THRESHER SHARK:**





(4)  
**THE  
HAMMERHEAD  
SHARK**



**Resources**

**Facts**

[Click Here](#)

**Funny Head**

[Click Here](#)

**Video (YouTube)**

[Click Here](#)

**Hawai'i Hammerhead**

[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_

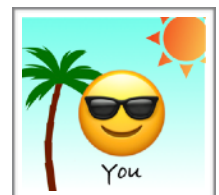


Hammerheads are probably the easiest to recognize. There is a very good reason why their heads are such a funny shape. Can you figure out why?

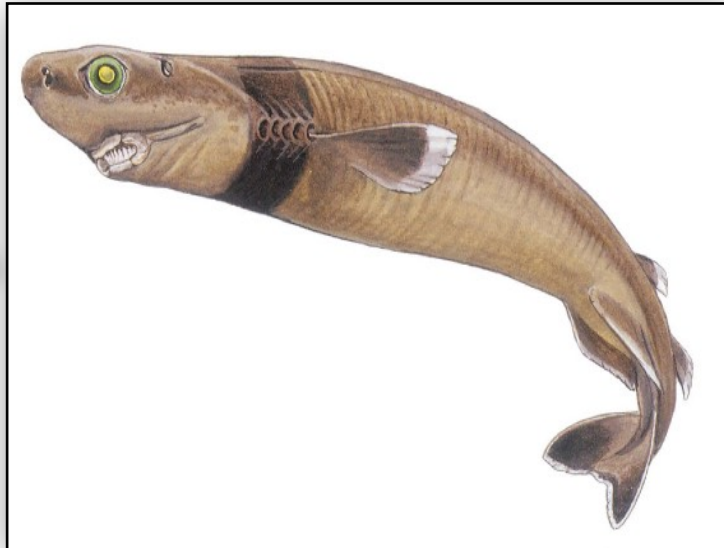


In the north shore waters of Moloka'i, every year hundreds of hammerhead sharks gather. It's quite the sight to see! I bet you can google some cool pictures.

**COMMENTS AND QUESTIONS ABOUT THE HAMMERHEAD SHARK:**



**(5)  
THE  
COOKIE-CUTTER  
SHARK**



**Resources**

**Facts 1**

[Click Here](#)

**Facts 2**

[Click Here](#)

**Video**

[Click Here & Here](#)

**More Info**

[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_

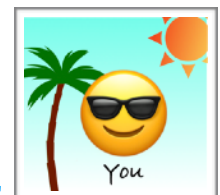


The cookie cutter shark is the weirdest one we'll go over today. Notice how the picture above is actually a drawing? Why do you think I didn't show you a real picture?



We hardly ever see these guys swimming around, but we do see the wounds they leave on other animals, especially dolphins and seals. These sharks will take a cookie shaped bite!

**COMMENTS AND QUESTIONS ABOUT THE COOKIECUTTER SHARK:**



**(6)**  
**THE**  
**SANDBAR**  
**SHARK**



**Resources**

**Facts 1**  
[Click Here](#)

**Facts 2**  
[Click Here](#)

**Video 1**  
[Click Here](#)

**Video 2**  
[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_

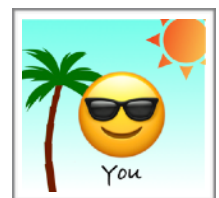


The sandbar isn't seen too much, but they do come into the harbors sometimes! In Lahaina harbor on Maui, they'll come in to see if the fishermen have scraps for them!



At the Maui Ocean Center, they have many sandbars. You can tell them apart by their tall dorsal fin and their cone shaped back.

**COMMENTS AND QUESTIONS ABOUT THE SANDBAR SHARK:**



(7)  
**THE  
OCEANIC WHITE  
TIP SHARK**



### Resources

#### Facts

[Click Here](#)

#### Conservation

[Click Here](#)

#### Video 1

[Click Here](#)

#### Video 2

[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_

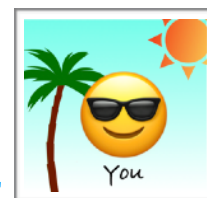


The oceanic white tip is one of my favorites, mostly because they are so elusive and so endangered. Their population is now super low.



This shark has serrated teeth (each tooth has little tiny teeth along the edge). What does this tell us about the way it eats?

COMMENTS AND QUESTIONS ABOUT THE OCEANIC WHITE  
TIP SHARK:



(8)  
**THE  
GALAPAGOS  
SHARK**



**Resources**

**Facts 1**

[Click Here](#)

**Facts 2**

[Click Here](#)

**Video**

[Click Here](#)

**Research**

[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_



The Galapagos shark is one of the species of sharks that give birth to live shark pups! There is another way in which sharks are born, can you figure it out?



Although these sharks are named after the Galapagos Islands in South America, they are found throughout the world.

**COMMENTS AND QUESTIONS ABOUT THE GALAPAGOS SHARK:**





(9)

# THE TIGER SHARK



## Resources

### Facts

[Click Here](#)

### Video 1

[Click Here](#)

### Video 2

[Click Here](#)

### Research

[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

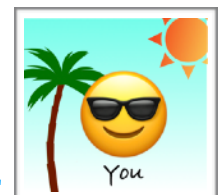
One cool fact you found: \_\_\_\_\_



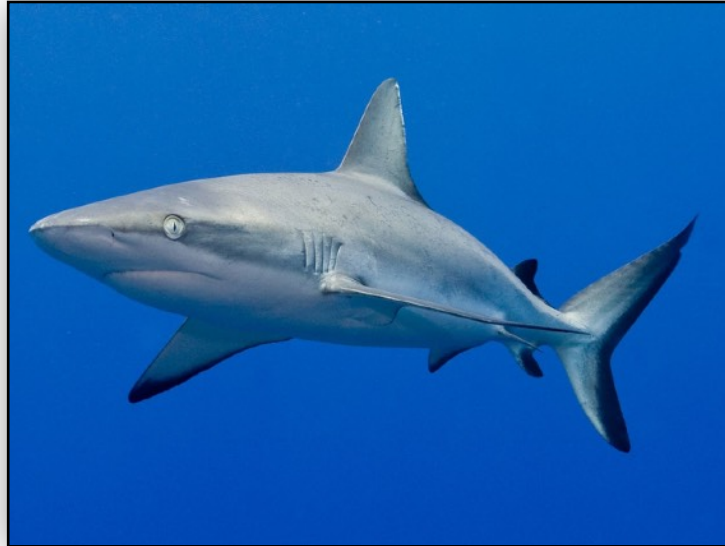
My favorite! There are so many fascinating and unbelievable facts about tiger sharks. It's super important to remember that even though they are huge predators, they are mostly uninterested in humans. Sometime accidents happen and it's usually because the water is murky and they mistake a swimmer for a turtle or another common food. This project is amazing: Hawai'i scientists tagged tiger sharks so we are able to track them!

[CLICK HERE](#)

COMMENTS AND QUESTIONS ABOUT THE TIGER SHARK:



(10)  
**THE  
GRAY REEF  
SHARK**



**Resources**

**Facts 1**

[Click Here](#)

**Facts 2**

[Click Here](#)

**Babies born**

[Click Here](#)

**Video**

[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_

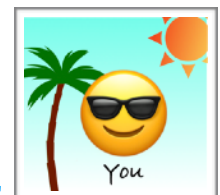


I kept these three reef sharks for last because they are all very common in Hawai'i. These three sharks all live on the reefs, but at different depths.



The gray reef shark is easily confused with the Black-tip. Can you spot the main difference? Use the correct vocabulary!

**COMMENTS AND QUESTIONS ABOUT THE GRAY REEF SHARK:**





**(11)**  
**THE**  
**BLACK-TIP**  
**REEF SHARK**



**Resources**

**Facts 1**  
[Click Here](#)

**Facts 2**  
[Click Here](#)

**Video**  
[Click Here](#)

**Babies!**  
[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

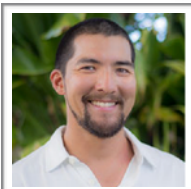
One cool fact you found: \_\_\_\_\_



Video 2.F1

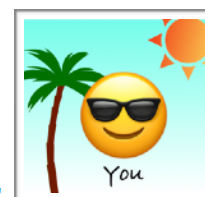


The black-tip is super common! It's one of the smaller sharks that we have in Hawai'i. There are places around Maui where you can see babies from the beach!



Where you able to spot the main difference between the Gray reef shark and this Black-tip?

**COMMENTS AND QUESTIONS ABOUT THE BLACK-TIP REEF SHARK:**



**(12)**  
**THE**  
**WHITE-TIP**  
**REEF SHARK**



**Resources**

**Facts 1**  
[Click Here](#)

**Facts 2**  
[Click Here](#)

**Video 1**  
[Click Here](#)

**Video 2**  
[Click Here](#)

Hawaiian name: \_\_\_\_\_ Scientific name: \_\_\_\_\_

Does it live in Hawai'i? \_\_\_\_\_

Maximum size (length and weight): \_\_\_\_\_

Diet (what does it eat): \_\_\_\_\_

Habitat (what part of the ocean does it live in): \_\_\_\_\_

One cool fact you found: \_\_\_\_\_



Video 2.F2

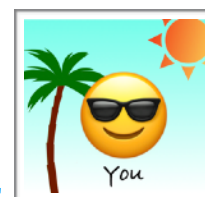


Last but not least... The white tip reef shark. I saved this one for last because it is, by far, the most common shark we'll see in Hawai'i while swimming and snorkeling on the reefs.



It has a special ability that no other shark in Hawai'i can do! Can you figure out what that is?

**COMMENTS AND QUESTIONS ABOUT THE WHITE-TIP REEF SHARK:**

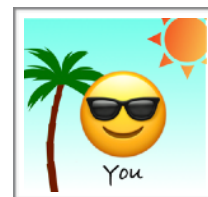




That was a lot of sharks! Now that we covered some of the more common ones, I'd like for you to pick your favorite from those twelve.

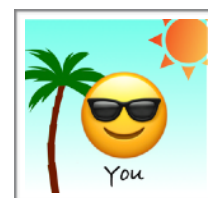
My favorite shark is:

---



I think it's time for a little research project about sharks! With your answer above, you already have the start of the project!

Another one?! Ok...



You have to take your favorite shark you just picked and make a big poster about it! Drawings, pictures, information, facts, myths, population, etc...



1. Get a huge sheet of paper.
2. In the middle draw your shark!
3. Include pictures if you can.
4. Add as much info and facts as you can.
5. Color and make it pretty!
6. BE CREATIVE!



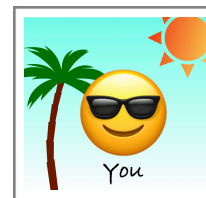
The goal is to create a poster that you can share with your family, your class, and with me!

Can you also ask your family and friends if any of them have seen wild sharks before?



I'll share some of my experiences if you'd like!  
Do you have any other questions or stories that you  
want to share about sharks?

Questions and things I want to talk about



### VOCABULARY

Thresher Shark

Tiger Shark

Hammerhead  
Shark

Black-tip Reef  
Shark

Cookie-cutter  
Shark

Great White  
Shark

White-tip Reef  
Shark

Gray Reef Shark

Galapagos Shark

Oceanic White-  
tip Shark

Sandbar Shark

Whale Shark

**REVIEW YOUR KNOWLEDGE WITH A  
SHORT QUIZ ABOUT PART 3  
[CLICK HERE](#)**



## PART 4: Dissection

This part includes:

- ✓ **7** Pages
- ✓ **25** Questions
- ✓ **3** Tangents
- ✓ **6** Digital Bus Videos
- ✓ **12** Vocabulary Words

DATE ASSIGNED: \_\_\_\_\_

DATE DUE: \_\_\_\_\_

my notes... my drawings... my thoughts... my ideas...

# Manō: Sharks of Hawai'i

## PART 4: Dissection



Video 2.14



Ok, we've reached the final section of this project! The dissection.

Ah! Gross, and cool. At least I don't have to smell it!



Let me explain!



There will be five videos of me doing the dissection that goes along with this lesson. You'll be able to follow along as we cover the different parts of the shark.



On the next pages you'll find questions that go along with the video. Watch each video and answer some questions!

Ok, so far so good!



This dissection guide might also be helpful!  
[CLICK HERE](#)





Video 2.15



Time for the first video (1/5).

Answer the questions when you're done!

### ANSWERS

What species of shark will we be studying?

---

Where do these sharks live?

---

Is this shark male or female?

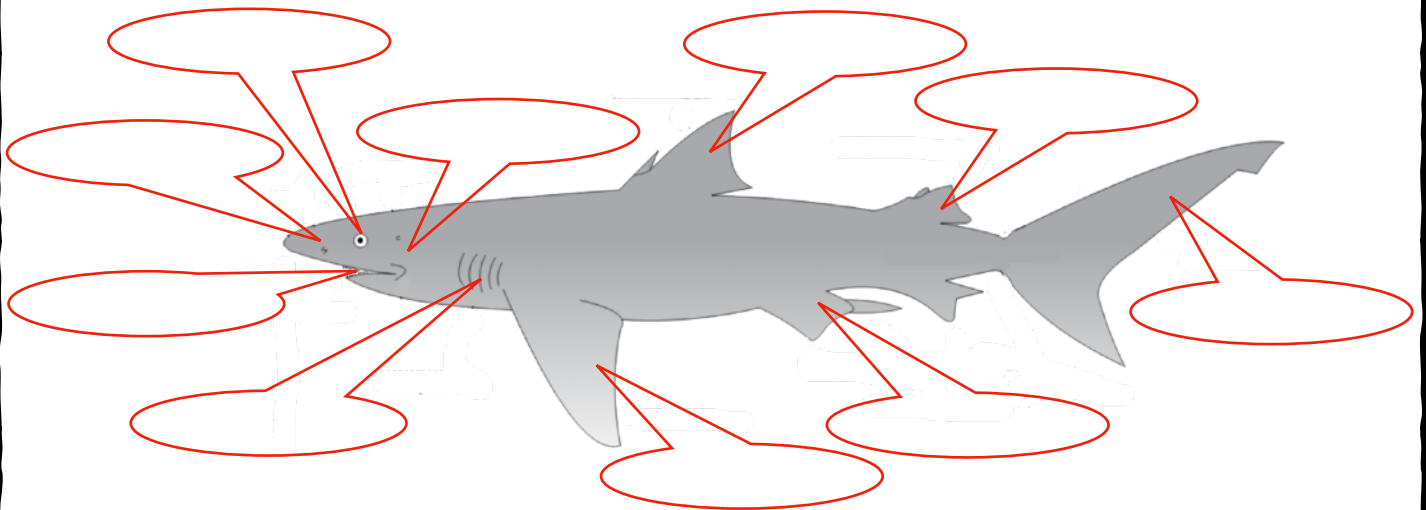
---

What is the maximum size of this species of shark?

---



This drawing should look familiar. Without looking (and without the names of the parts) how many bubbles can you fill in now that I've shown you a real shark and pointed all of these out?



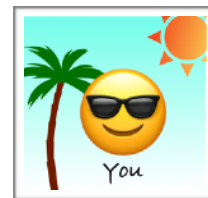


You may have noticed that the shark is darker on its back and lighter on its belly. This is called **counter shading**, and it's a way of camouflage!



Can you explain how countershading could help the shark?

\_\_\_\_\_



Let's start talking about the internal (inside) anatomy of the shark.

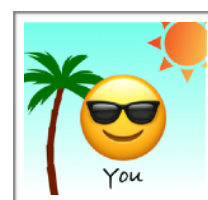
Do you remember what three body systems we are going to cover?

**ANSWERS**

1. \_\_\_\_\_

2. \_\_\_\_\_

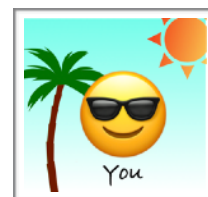
3. \_\_\_\_\_



And what were some of the organs we are going to find?

\_\_\_\_\_

\_\_\_\_\_





Video 2.16



Now for the digestive system (2/5).

Answer these questions when you're done!

### ANSWERS

What is the function of the digestive system?

---

What is the first part of digestion?

---

What does the stomach do?

---

What is the purpose of the intestines?

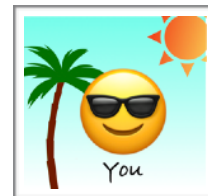
---

Is there another organ that you can remember?

---

What is its function?

---



Here is a video that explains the digestive system in humans. It doesn't matter if we're learning about humans, sharks, or any other animal, the digestive system has the same function!

### Resources

Human Digestive System: [CLICK HERE](#)



### Tangent: Science

Try this! Right when you wake up, before you do anything else drink a glass of ice water. You should be able to feel it travel down your esophagus and into your stomach!



Video 2.17



Moving on to the circulatory system (3/5)

Answer these questions when you're done!

### ANSWERS

What is the function of the circulatory system?

---

Name the main organ of this system?

---

What roll do the gills have in this system?

---

What is the function of blood?

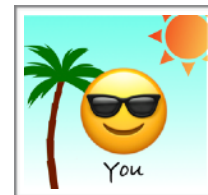
---

How many chambers (parts) does a sharks heart have?

---

What is the difference between veins and arteries?

---



Here is a video that explains the circulatory system in humans. It's a little bit different than in sharks, but the main function is the same!

### Resources

Human circulatory System: [CLICK HERE](#)



### Tangent: Science

Human blood is red. So is the blood from sharks, cats, and dogs... Did you know that some animals have blue blood, green blood, or even purple blood! [CLICK HERE](#)



Video 2.18



Time for the nervous system (4/5).

Answer these questions when you're done!

### ANSWERS

What is the function of the nervous system?

---

Name the main organ of this system?

---

About how big is the brain of this shark?

---

Name one part of the brain.

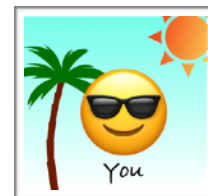
---

Are there other parts of the nervous system?

---

Name something the shark (or you) does without  
having to think about it.

---



Here is a video that explains the nervous system in humans. Even though our brains are way bigger, the way they work is pretty much the same as in sharks!

### Resources

Human nervous System: [CLICK HERE](#)



### Tangent: Science

By around 11-12 years old, the human brain reaches its adult size of about 3 pounds! Can you find something that weighs about the same amount? [CLICK HERE](#)



Video 2.19



And finally, the microscope observations and conclusions (5/5)

When you are all done, come up with your questions and comments!

Questions and things I want to talk about:



#### VOCABULARY

Counter Shading

Camouflage

Digestive  
System

Digestion

Stomach

Intestine

Circulatory  
System

Blood

Veins

Arteries

Nervous System

Brain

**REVIEW YOUR KNOWLEDGE WITH A  
SHORT QUIZ ABOUT PART 4  
[CLICK HERE](#)**

my notes... my drawings... my thoughts... my ideas...





# CONCLUSION

This part includes:

- ✓ **6** Pages
- ✓ **14** Questions
- ✓ **2** Digital Bus Videos
- ✓ **62** Vocabulary Words  
(total from all lessons)
- ✓ **1** Conclusion Quiz

DATE ASSIGNED: \_\_\_\_\_

DATE DUE: \_\_\_\_\_

my notes... my drawings... my thoughts... my ideas...

# Manō: Sharks of Hawai'i

## Conclusion



Video 2.20



Congratulations! You have completed all the lessons of the Manō project. Now it's time to wrap it up with a little conclusion and make sure we remember what we've learned.

I got it! No problem!



Before you start this conclusion, you should look back at all your lessons and your research, and check out the vocabulary lists on the next page. I'm going to ask you a bunch of stuff.

You can use this space for some notes you might have, or words you're still working on.

NOTES



### VOCABULARY

Shark  
Fish  
Population  
Identify  
Dissection  
Animal  
Gill  
Fin  
Scale  
Skull  
Bone  
Cartilage  
Cartilaginous Fish  
Bony Fish

### VOCABULARY

Conservation  
Species  
Threatened  
Endangered  
Apex Predator  
Food Web  
Ecosystem  
Shark fin soup  
Bycatch  
Long-line fishing  
Habitat  
Vilified  
Myth

### VOCABULARY

Anatomy  
Eye  
Caudal fin  
Gill slits  
Pectoral fin  
First dorsal fin  
Spiracle  
Senses  
Ampullae of Lorenzini  
Body systems  
Organ

### VOCABULARY

Thresher Shark  
Tiger Shark  
Hammerhead Shark  
Black-tip Reef Shark  
Cookie-cutter Shark  
Great White Shark  
White-tip Reef Shark  
Gray Reef Shark  
Galapagos Shark  
Oceanic White-tip Shark  
Sandbar Shark  
Whale Shark

### VOCABULARY

Counter Shading  
Camouflage  
Digestive System  
Digestion  
Stomach  
Intestine  
Circulatory System  
Blood  
Veins  
Arteries  
Nervous System  
Brain



From this long list of vocabulary, are there some terms or words that you're most excited about knowing and using?

ANSWER: \_\_\_\_\_

ANSWER: \_\_\_\_\_

ANSWER: \_\_\_\_\_



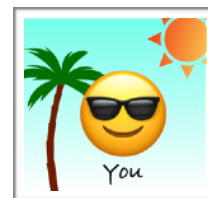


Let's finish up by doing some questions to see what you've remembered!



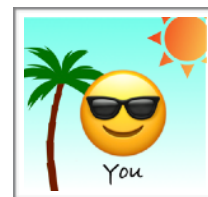
Can you explain what a shark is?

ANSWER: \_\_\_\_\_



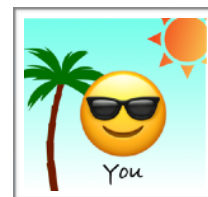
What is the one main thing that makes sharks different from other fish?

ANSWER: \_\_\_\_\_



About how many different species of sharks are there in the world?

ANSWER: \_\_\_\_\_



What is one of the threats to sharks?

ANSWER: \_\_\_\_\_



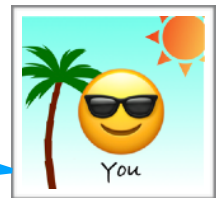
On Bubble Island there are way more medium sized fish than before, fish that are prey to sharks. Why could this be?

ANSWER: \_\_\_\_\_



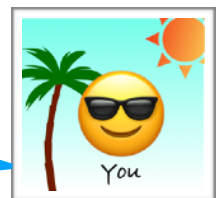
Kanoa learned all of his shark facts from Hollywood movies, explain why this could be bad.

ANSWER: \_\_\_\_\_



What is the purpose of the dorsal fin?

ANSWER: \_\_\_\_\_



A shark has jelly filled organs around its mouth and nose. What are they, and what do they do?

ANSWER: \_\_\_\_\_



A shark is having trouble getting blood from his heart to different body parts. What body system isn't working?

ANSWER: \_\_\_\_\_



You're swimming in Hawai'i and see a shark on the sand. It's alive but not moving. What kind of shark is it?

ANSWER: \_\_\_\_\_



A friend tells you she saw a huge shark with spots all over. What kind of shark is it?

ANSWER: \_\_\_\_\_



What is one thing you'll remember most from the dissection?



ANSWER: \_\_\_\_\_



Can you please write you 5 favorite things about this lesson?

My five favorite things



Remember those five questions you answered at the start of this project? Now that you've learned tons about sharks, you can try those questions again! [CLICK HERE](#)

It'll show you the correct answers this time after you're all done!



Video 2.21



You are done! Great job. I hope you learned something new and had fun joining me on this project. If you've completed everything, your teacher will have a little something to give you from me!

I can't wait to do another project soon! Aloha!

my notes... my drawings... my thoughts... my ideas...

my notes... my drawings... my thoughts... my ideas...

my notes... my drawings... my thoughts... my ideas...

**Website:** [www.digitalbus.org](http://www.digitalbus.org)  
**Email:** [dylan@digitalbus.org](mailto:dylan@digitalbus.org)

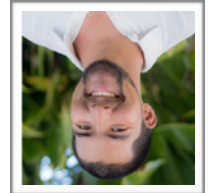
**For all other Alaka'ina Digital Bus questions**

**Email:** [digitalbus\\_mauui@gmail.com](mailto:digitalbus_mauui@gmail.com)

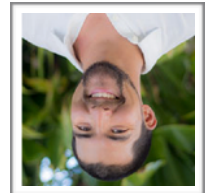
**For virtual project content questions**

## CONTACT INFORMATION

Good luck, and don't forget, we're here to Kōkua (help) at anytime!  
 Me Ke Aloha,  
 Dav Yuan  
 & the Digital Bus team



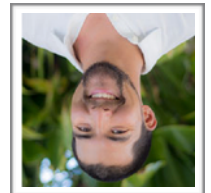
Bite size chunks! Some modules are more in depth than others and may require multiple days of work. Please don't hesitate to email us questions, albeit for specific science questions or regarding the delivery of this project!



So far so good, any tips you can give when handing all this over to the keiki?



Finally, all Virtual Projects are numbered. Digital Bus videos will be labeled on YouTube with the Project number (i.e. "2"), followed by the video number (i.e. "2.15").



In addition, you'll sometimes find my picture with a pink frame. This represents a Linked Digital Bus video either explaining a topic in more detail, visiting a field site, or interviewing an expert.





My picture will always link to an audio clip of me reading my text bubbles.

All video call Q&A sessions must include a parent or guardian. No exceptions.

At some point during their project we encourage the students to make contact with us to talk story about their lesson and to engage in a question and answer session. Please visit our website to schedule a Q&A session: <https://www.digitalbus.org/>

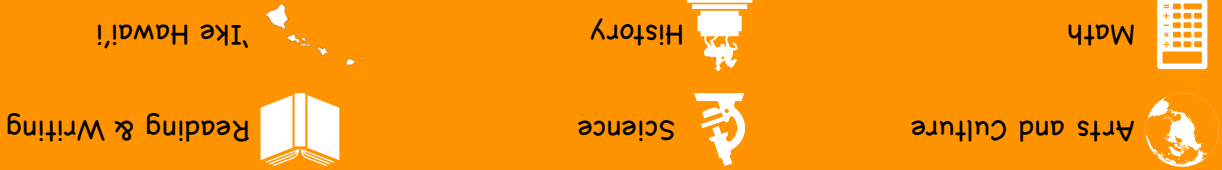
Each project will be delivered in sections:

1. Welcome
2. Introduction
3. Part 1
4. (Additional parts if applicable)
5. Conclusion



Represents a tangent. Parents and teachers can guide students to learn about related materials but through different subjects.

### ORANGE: Tangent



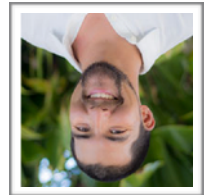
Represents a research project, students will follow the directions, and be asked to share it with their family (extra material may be required).

### ★ PURPLE: Research project ★

Represents new vocabulary words that should be learned (these words will be underlined and in bold throughout the lesson).

### PINK: Vocabulary

## Parent & Teacher Information

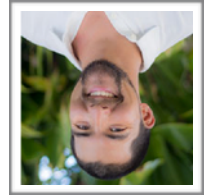


Aloha, my name is Dav Yuan. I am the Education Coordinator for the Alaka'ina Digital Bus on Maui. We have created interactive virtual lessons for students in a range of different science fields. These projects will either be used along side in-person projects, or on their own. This guide will help you understand the format of the lessons and how to help your child navigate through the modules.

First things first, the green bubbles will always represent my conversation.



Yup, this seems familiar...  
(The blue bubbles will always represent the student conversation)



Large red font will always denote a question.  
**Does that make sense?**



Yes, thanks for asking. Pretty straight forward so far.



That's the goal! You'll also find some different color blocks throughout the lessons. Each one serves a different purpose.

### YELLOW: Resources

Represents additional resources: videos, interesting websites, facts.



# www.digitalbus.org

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Please contact us directly if your school blocks YouTube. We will try out best to create a version that will work for you.

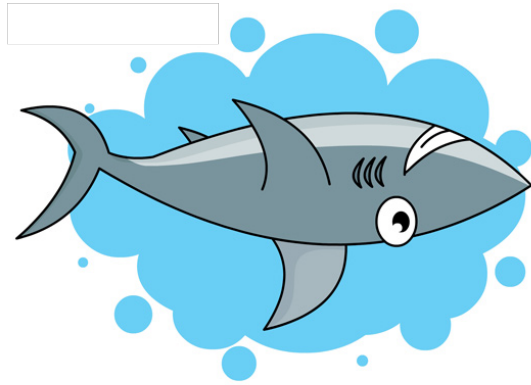
This hardcopy is designed to be used in tandem with the digital PDF. Students will have access to clickable video and audio links on the digital copy. It is available at [www.digitalbus.org/sharks-of-hawaii](http://www.digitalbus.org/sharks-of-hawaii)

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The mission of The Digital Bus is to encourage interest in science and technology among the underrepresented student populations in grades K-12. Currently operated by Alaka'ina, a non-profit 501(c)3, The Digital Bus program serves the foundation's educational outreach goal to expand the next generation of leaders and scientists capable of developing and supporting critical technologies for the future. We offer a state of the art mobile learning platform and field-based science projects to K-12 students that incorporate technology & culture.



# Parent & Teacher Information



Mano: Sharks of Hawai'i  
— Virtual Project #2 —

