



## Knowledge Hunt

### Introduction

Sharks are in a state of crisis all over the world as a result of man's activities. The over-exploitation of shark resources, along with human-induced damage to the marine ecosystem globally, has grave implications for shark populations everywhere. Shark!, a special exhibition, educates visitors about the important role of sharks in the world's oceans, with special reference to sharks in the Gulf of Mexico.

### TEKS

#### Elementary:

K.9(B), K.10(A), 1.9(A, B, C), 1.10(A, D), 2.9(A, B, C), 2.10(A), 3.9(A, B), 3.10(A), 4.9(B), 4.10(A, B), 5.9(Ab, C), 5.10(A, B)

#### Middle School:

6.12(D, E, F), 7.11(B), 7.12(A), 7.13(A), 7.14(A), 8.11(A, C, D)

#### High School:

##### Biology:

7(C, E), 11(B, D), 12(A, B, D, F)

##### Environmental Systems:

4(G, H), 7(D), 9(E, F, G)

##### Aquatic Science:

9(A, B, C), 10(B, C), 11(A, B), 12(A, B, D)

### Vocabulary

Whitespotted bamboo shark, epaulette carpet shark, adaptations, denticles, cartilaginous, ecosystem, tagging, megalodon, fisheries, environmental impact, dorsal fin, gills, OCEARCH, migration, exploitation, ecology

## **Shark Touch Tank**

As students enter the exhibition, first component includes two touchtanks. Ensure that students read the rules (or have the rules read to them) before approaching the tank. Use the tank, the two text panels immediately to the right of the tank, and the equipment around the tank to respond to the following questions:

**What two types of sharks present in the tanks?**

- 1.
- 2.

**What four reasons led to these two shark species being selected for the touch tanks?**

- 3.
- 4.
- 5.
- 6.

**Observe the sharks in their tanks. What adaptations do they have to their environment? Use the chart below to indicate the adaptation and how that adaptation helps the shark survive.**

<b>Adaptation</b>	<b>How the adaptation helps the shark</b>

**Reach into the tank and touch one of the sharks (two fingers only!). What do you notice about its skin?**

**Inspect the equipment used for the shark touch tanks. All of the materials used are required to recreate the shark's natural habitat. List at least three different functions the machinery must carry out to successfully do this.**

- 1.
- 2.
- 3.

Sharks of the Gulf, Conservation & Management

**How many species of shark live in the Gulf of Mexico?**

**Which is the largest species of shark in the Gulf of Mexico? The smallest? How big do each get?**

**Largest:** \_\_\_\_\_ **Length:** \_\_\_\_\_

**Smallest:** \_\_\_\_\_ **Length:** \_\_\_\_\_

**What are three current threats the shark population is facing?**

- 1.
- 2.
- 3.

**Why is it important to research shark migratory patterns?**

## Sharks & People

How many humans per year do sharks kill? How many sharks per year do humans kill?

Humans killed: \_\_\_\_\_ Sharks killed: \_\_\_\_\_

Fill out the chart below, detailing the different ways the shark has been used by humans:

Body Part	Use
Meat	
Fin	
Skin	
Oil	
Cartilage	

Why is it more advantageous to allow sharks to swim freely in their natural environment, rather than killing them for the uses listed above?

List at least three different drawbacks to fisheries and overfishing.

- 1.
- 2.
- 3.

Predict what would happen to the oceans if all of the sharks were killed off.

## **Shark Research & OCEARCH**

Each of the following products is used to help with the furthering of shark research and protection. Complete the table by indicating how the device/mechanism is beneficial to the shark population:

<b>Product</b>	<b>Use(s)</b>
<b>Protective shark suits</b>	
<b>Chemicals</b>	
<b>Shark cages</b>	
<b>Shark tags</b>	

**Observe the Great White Shark on display, and view the shark tagging video being projected above the model. What conclusions can you draw about the shark tagging process? Can you think of any ways to improve the process?**

**Moving over to the computer stations, use the OCEARCH database to find and track sharks that are currently in the Gulf of Mexico. What different species of shark can you find?**

**Where do most of the sharks seem to be congregating? Why do you think that is?**

### **Shark Biology**

**Take a look at the computer console and the microscope setup. What observations can you make?**

**Sharks have a number of adaptations that make them perfect for their environment. Using the chart below, predict what advantages each trait gives the shark.**

Trait	Advantage
Cartilaginous skeleton	
Torpedo-shaped body	
Denticles	
Replacement teeth	
Large brains	

### Sharks in the Media

Both *Jaws* and *Sharknado* are well known for their sharks. Can you think of any other movies, books, or TV shows in which sharks are misrepresented?

### Megalodon

Inspect the Megalodon jaw, the Great White Shark jaw, and the human skull. How do you think the oceans of today would be different if the Megalodon were not extinct?

Do you think the Megalodon could survive in today's oceans? Why or why not? Why do you think they went extinct in the first place?

### Shark Cage

As you exit the exhibit, take a turn at stepping in the shark cage. Imagine that you are in an actual ocean, surrounded by hammerheads. How do you think you would

**react? Write a short story in which you describe the sensation of plunging into the ocean and being surrounded by sharks.**