Name: _____
Date: _____

Cabrillo Marine Aquarium

Worksheet: Tracking a Shark

Many sharks are in danger of becoming extinct. In order to help save sharks, scientists need to know where sharks go and the areas of the ocean they prefer to visit. With this information, scientists can then help sharks, by protecting those areas of the ocean that sharks return to most often.

Jeff is an adult blue shark. He is 6 feet in length and migrates to the temperate waters of the Pacific Ocean near the Gulf of California. A tag that records his movements was secured to him on February 3 and his movements were tracked for several months.

Directions:

- Follow the instructions and track Jeff's movements on the map.
- Each coordinate is made up of a letter and number.
- Use the coordinates and the map to mark the position of Jeff as he migrates.
- Connect each of the coordinates by drawing a line from one coordinate position to the next and track Jeff's movements in and out of the Gulf of California.

Jeff the Blue Shark Tracking Instructions

Date:	Coordinate:	Information:
Feb 3	**Place a star on J 12**	**A tag was placed on Jeff while he was visiting an underwater seamount in the Gulf of California.**
Feb 10	**Draw a squid at M 14**	**Jeff decides to move to deeper water. Jumbo squid, its favorite prey lives in these deep waters.**
Feb 11	**Place a dot at L 18**	**Jeff moves to shallow water.**

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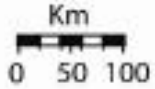
Date:	Coordinate:	Information:
Feb 12	Draw a fin at K 21	Jeff moves quickly out of the Gulf of California into the open ocean and stays near the surface.
Feb 16	Draw a seamount at J 16	Jeff visits a seamount called the San Jaime seamount. Seamounts are underwater mountains where large groups of fish, sharks and even whales come to visit.
Feb 22	Draw some waves at I 18	Jeff swims in the warmer waters near the surface.
Feb 26	Draw a circle around K 19	Jeff begins to dive down to 1300 feet. That is the distance an elevator travels from the top to the bottom of the Empire State Building.
Mar 3	Place an X at K 11	Jeff seems to be back inside the Gulf of California.
Mar 8	Draw another seamount at J 12	Jeff stays near the seamount where he was first tagged and stays for a few weeks.
Apr 6	Draw an island at I 9	Jeff swims over to the shallow waters near Isla Carmen inside the Loreto National Park. This is a safe reserve where marine life is protected.
Apr 18	Draw a shark at H 6	Jeff heads north when the tracking device is released and the data is sent to the researchers.

Reference: http://www.adoptashark.com/images/stories/kids/



Reference: http://www.adoptashark.com/images/stories/kids/

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Cabrillo Marine Aquarium

Worksheet: Megalodon - Biggest Shark that Ever Roamed the Seas

Megalodon is the largest shark to have ever lived!
But just how big was Megalodon?

Today, you will determine its size using the exact methods of professional scientists.

Background
Complete shark skeletons are not found in the fossil record. Do you know why that is? (Hint: wiggle your nose and ears for the answer.) Because we don't have complete fossilized skeletons of Megalodon, we must instead look at living sharks as a model.

Key Question
Is there a predictable relationship between tooth width and body length in modern-day sharks?

Directions

- Develop a hypothesis to help answer the key question.
- Use the data in the Data Table to test your hypothesis.
- Plot tooth width (your independent variable) on the x-axis and body length (your dependant variable) on the y-axis. The first data point has already been plotted on the graph.
- After you have plotted all of the data, answer questions 1 and 2.
- Extend your graph to intersect with the Megalodon tooth width of 5.5 inches and determine Megalodon's body length, answer question 3.

DATA TABLE	
Tooth Width (inches)	**Body Length (inches)**
0.2	26
0.5	64
0.8	100
1.0	127
1.2	150
1.4	180
1.5	190
2.0	250

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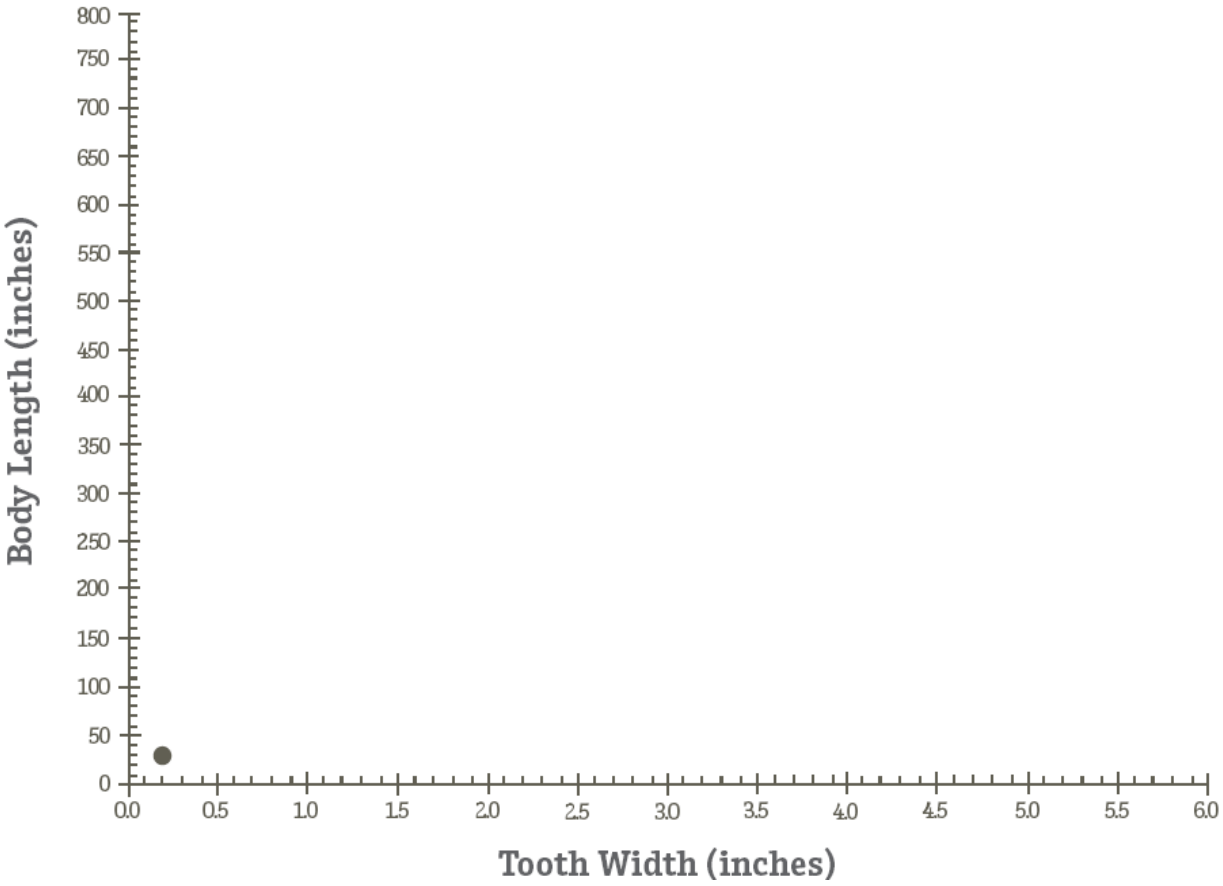

Questions

1. What is your null hypothesis? Is it testable and falsifiable? Why or why not?

2. After graphing your data, is your null hypothesis supported or falsified? Explain.

3. After extending the graph to meet the tooth width of Megalodon, what is your estimate for Megalodon's body length?

Extra Credit:

Do you have any concerns about this estimate? Why or why not?

Reference: http://www.flmnh.ufl.edu