



“What Do You Think About Sharks?”

Taken from: Windows on the WILD, Oceans of Life, page 206

Summary:

Students will explore their knowledge and attitudes about sharks. This lesson leads to an in-depth study of sharks.

Background Information:

Elasmobranchs- is defined as a group of fish distinguished by their skeletons that are made of cartilage, not dense bone. Sharks, skates, and rays belong to this group. Sharks have five or more gill slits on each side of their body, leathery skin with tiny sharp scales, and tails that are asymmetrical-the upper lobe extends over the lower lobe. Sharks don't have swim bladders to keep them buoyant, they must keep swimming to keep from sinking. Some sharks, like the Angel shark, are shallow water sharks and can rest on the ocean's bottom.

There are nearly 500 species of sharks. Sharks can live in fresh water, coastal areas, and the deep sea. The smallest shark-the Pygmy shark is 8-10 inches long whereas the largest shark-Whale shark can grow to be over 40 feet long.

Reproduction:

Depending on the shark, there are several different types of reproduction; some release fertilized eggs into the sea completely unguarded, others retain fertilized eggs, hatch internally, and nourish them through the placenta until mature enough to be born. Others retain fertilized egg, hatch them internally, but the internal hatchlings survive by eating unfertilized eggs. Sharks mature slowly and sometimes do not reproduce for twenty years. In many species reproduction occurs every other year. Some sharks carry their young for two years and may produce only a small number at a time.

Shark Benefits:

Sharks tend to catch the sick, injured, older animals, ensuring that the strongest animals reproduce.

Problems:

Shark populations are in decline because of three activities: recreational fishing, commercial fishing and accidental catch.

Grade Level: 4th Grade

Goal: To explore students' attitudes towards sharks.

Key Concepts:

- Predators
- Prey
- Survival of the fittest
- Populations
- Accidental catch
- Incidental catch

Teaching Location:

Classroom

Lesson Time: 45-50 minutes

Subject Areas for Infusion:

English, Science, Environmental Education

Standards:

Science

B.4.6

C.4.1

C.4.3

C.4.4

Environmental Education

A.4.1-4

B.8.5

English

A.4.1-4

Recreational:

Sharks are fierce fighters, therefore recreational fisherman like the spirit and excitement of shark fishing. Shoreline fishing often captures pregnant females or juvenile sharks that both have potential for reproducing.

Commercial:

Shark is now on the menu in many restaurants. Shark livers are used as a source of lubricant, vitamins, and cosmetics. Sharkskin is made into leather products, and powdered shark cartilage is sold as a medicine for many ailments but there is no proof that they work. The newest trend that threatens the shark is shark fin soup. Diners pay up to \$90 a bowl for this soup. Often the fishers will slice off the fins and throw the shark back alive.

Accidental Catch:

Nets and hooks accidentally snare sharks. Long line fishing for tuna and swordfish is the biggest cause of accidental catch. Long lines are thin cables that stretch up to 40 miles across ocean waters, they have a float attached every few feet. 25% of all animals caught in these lines are discarded and 75% of these are sharks. Many of these sharks are caught young and are therefore unable to reproduce.

Incidental Catch:

Species that fishers catch and keep even though they weren't targeted. The waste is less but this activity still threatens the shark population.

Concerns:

Shark depletion could have a large effect on marine biodiversity and the overall species diversity of the sea. Sharks weed out less healthy individuals and they take advantage of large population booms in prey populations.

Materials:

- Copies of "A Short Shark Story" page 211
- Copies of "Shark Survey" page 212
- "Shark Meters" page 213
- Put out my shark books and my oceans poster for additional references

Set-Up:

Run off all materials listed above for reading class.
Call speaker to set up a date-time to come and speak

Vocabulary:

economic stability: when a person has what they need to meet their needs and survive

values: the ideas or principle of a society

land-use planning: a process for deciding the best present and future use of each parcel of land in an area.

forest: biome with average annual precipitation of at least 30 inches to support growth of trees and vegetation.

natural resource: any useful material from the earth; water, oil, minerals, trees, etc.

renewable resource: a resource that can be replaced once its used

about scuba diving with the sharks-Joe Mara.

Procedure:

Introduction.

Introduce why it is important to discuss sharks, specifically the stereotypes associated with shark species. Describe activities.

Activity.

1. Hand out copies of “A Short Shark Story.” Read silently for 5 minutes then read as “reader’s theater”.
2. On board define fact and attitude together on the board.
3. With a partner underline three statements that reflect personal feelings, attitudes or opinions and circle three statements that are facts.
4. Share their fact/attitude statements and discuss.
5. Have students complete the “Shark Survey.” Part One is attitudes, remind students that there are no right or wrong answers. Part Two are facts to answer to the best of their ability.
6. Now have the students do the “Shark Meter” pages, this will assess if they have more positive or more negative attitudes about sharks and how much they know about sharks already.
7. Do a classroom line up of shark meter attitude scores.
Line Up Across the Front of the Room:

Scores:

XXX.....XXX.....XXX.....XXX.....XXX
1, 2 3, 4 5, 6 7, 8 9, 10

8. Raise hands to share fact scores so I can get a feel of our knowledge base.
9. Share where they have gotten their information about sharks

Assessment:

Make a shark promotion leaflet that will inform people of the problems facing sharks. Use the information you have learned about sharks to help people become aware of the problems sharks are facing. In the leaflet list one problem from each of the three problem categories: recreational and commercial fishing dangers and accidental catch.