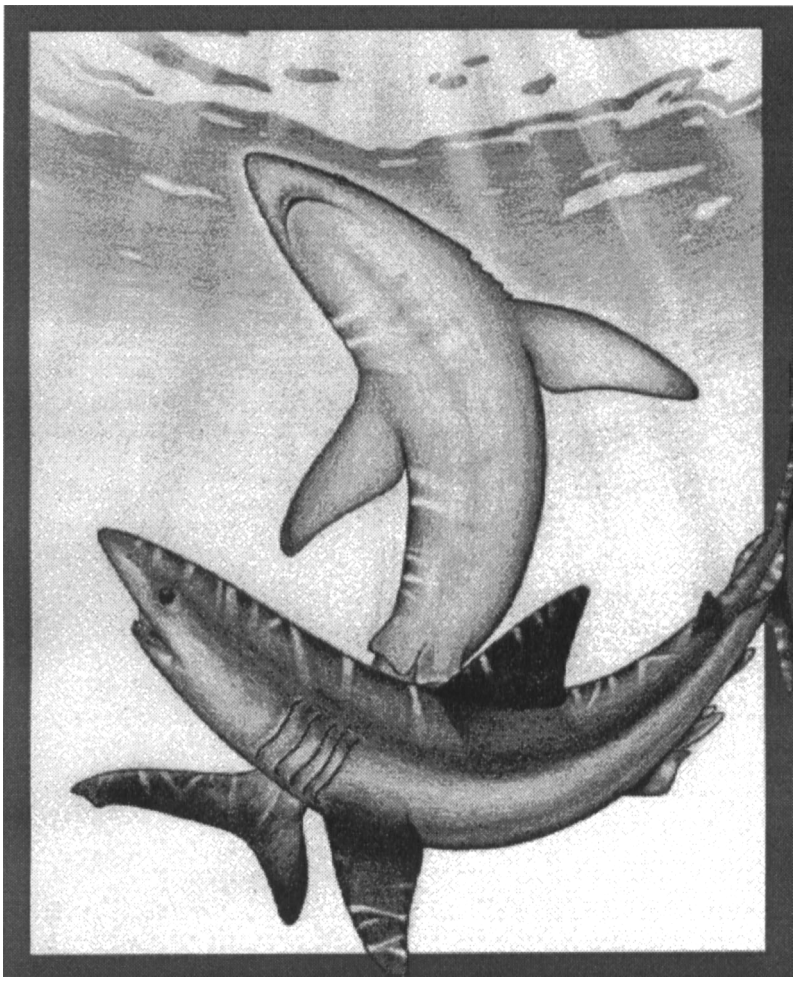

Sea World®

Busch Entertainment Corporation
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Shark!

K-3 Teacher's Guide

A SEA WORLD EDUCATION DEPARTMENT PUBLICATION

Goals of the Sea World Education Department

Based on a long-term commitment to education, Sea World strives to provide an enthusiastic, imaginative, and intellectually stimulating atmosphere to help students reach their academic potential. Specifically, our goals are...

- To instill in students of all ages an appreciation for science and a respect for all living creatures and natural environments.
- To conserve our valuable natural resources by increasing awareness of the interrelationships of humans and the marine environment.
- To increase students' basic competencies in science and other disciplines.
- To provide an educational resource for the entire community.

"For in the end we will conserve only what we love. We will love only what we understand. We will understand only what we are taught."—B. Dioum

CONTENTS

* denotes classroom activities

To the Teacher

The ***Shark!*** Teacher Guide for grades K-3 was developed at Sea World to help you teach your students about sharks and the ecology of the ocean in an active, hands-on way. Our goal was to integrate science, mathematics, art, and language.

The brief background information in this Guide was written for you, the teacher. It will help you do these activities with your students. We suggest you also refer to some of the materials listed on page 15 for more in-depth information.

Goals of the Shark! Unit

Students will explore the natural history of sharks and recognize that humans are an interconnected part of sharks' ecosystems.

Objectives:

After completing the Sea World Shark! unit, the student will be able to ...

1. Create an impression of a shark and identify a shark's body parts.
2. Explain two ways sharks are different from bony fishes.
3. Portray a shark's ecosystem.
4. Investigate and test a human's sense of smell.
5. Discuss two ways people may affect sharks and make suggestions for shark conservation.
6. Describe what sharks eat and demonstrate the concept of a food chain.
7. Evaluate how schooling behavior is an adaptation for avoiding predators.

Vocabulary

ANAL FIN — a single fin behind a fish's anus, which lends stability. Not all sharks have an anal fin.

BONY FISH — the large group of fishes that have skeletons made of bone.

CARTILAGE — the tough connective tissue that composes the skeletons of sharks. Cartilage also composes the skeletons of all very young vertebrates.

CAUDAL FIN — the tail fin, which propels a shark.

CONSERVATION — using habitats, resources, animals, and plants wisely, so as to save them for future generations.

DORSAL FIN — a fin on the top of a fish. A shark's dorsal fins give the shark stability as it swims.

ECOSYSTEM — a unit of plants, animals, and nonliving components of an environment that interact.

FINNING — the practice of removing only a shark's fins, which are used in sharkfin soup. The shark is usually left to die.

FOOD CHAIN — a diagram that shows who eats whom in an ecosystem.

GYOTAKU— the art of fish printing, which originated in Japan or China in the early 1800s as a way for fishermen to record their catch.

PECTORAL FINS — the paired fins toward the front of a fish's body. Pectoral fins lift a shark as it swims.

PELVIC FINS — the hindmost paired fins of a fish. Pelvic fins provide stability.

PREDATOR — an animal that eats other animals.

PREY — an animal eaten by another animal.

What is a Shark?

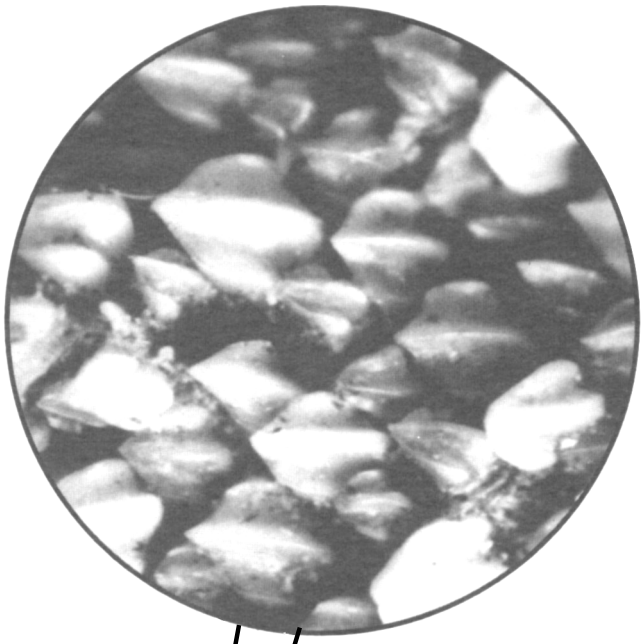
First of all, a shark is a fish.

Like other fishes, all sharks are cold-blooded. They have a skeleton and fins, live in the water, and respire with gills. Most fish in the world are called bony fishes. Their skeletons are made of bone, as ours are. There are more than 22,000 different kinds of bony fishes in the world, but only about 350 different kinds of sharks.

So what's the difference?

One thing that makes sharks different from bony fishes is that a shark's skeleton is made of cartilage, not bone. Cartilage is a tough connective tissue. We have cartilage in our bodies, too. Push on your nose or squeeze your ear to feel cartilage.

Another difference between sharks and bony fishes is their scales. The scales of most bony fishes are round. A shark's scales are different. Each one looks like a miniature tooth. These teethlike scales make a shark's skin rough, like sandpaper.



A shark's scales are like miniature teeth.