Rough Rubbin' Sharks

Objectives

Students gain an understanding of sharks' rough, textured skin through artwork. They demonstrate knowledge of a shark's ecosystem.

Materials

- ❑ shark illustrations on page 2 or the cards on pages 3-4.
- ❑ tagboard for each shark shape
- ❑ heavy-grade sandpaper
- ❑ tracing pencils
- ❑ white glue
- ❑ scissors
- ❑ butcher paper or newsprint
- ❑ assorted crayons colored pencils, markers, or watercolors (optional)

Background

Sharks have placoid scales, also called dermal denticles (dermal = skin, denticles = teeth). Each one looks like a miniature tooth. Shark scales have the same structure as a tooth: an outer layer of enamel, a layer of dentine, and a pulp cavity. Scales don't grow bigger as a shark ages. As sharks grow, they grow more scales. These toothlike scales make a shark's skin rough, like sandpaper. European cabinetmakers used the rough shark skin as sandpaper, called shagreen.

Action

1. CRAFT PREPARATION: Using shark drawings on page 2, trace sharks onto the smooth side of sandpaper. These sharks are (from top to bottom) whale shark, white shark, horn shark, spiny dogfish. (Or enlarge sharks from the cards on pages 3–4.)

   Cut out sandpaper shark shapes.

   Glue the smooth side of each sandpaper shark to a piece of tagboard. Using glue, draw in eyes and gill slits. Let glue dry for 24 hours. These are your "shark masters."

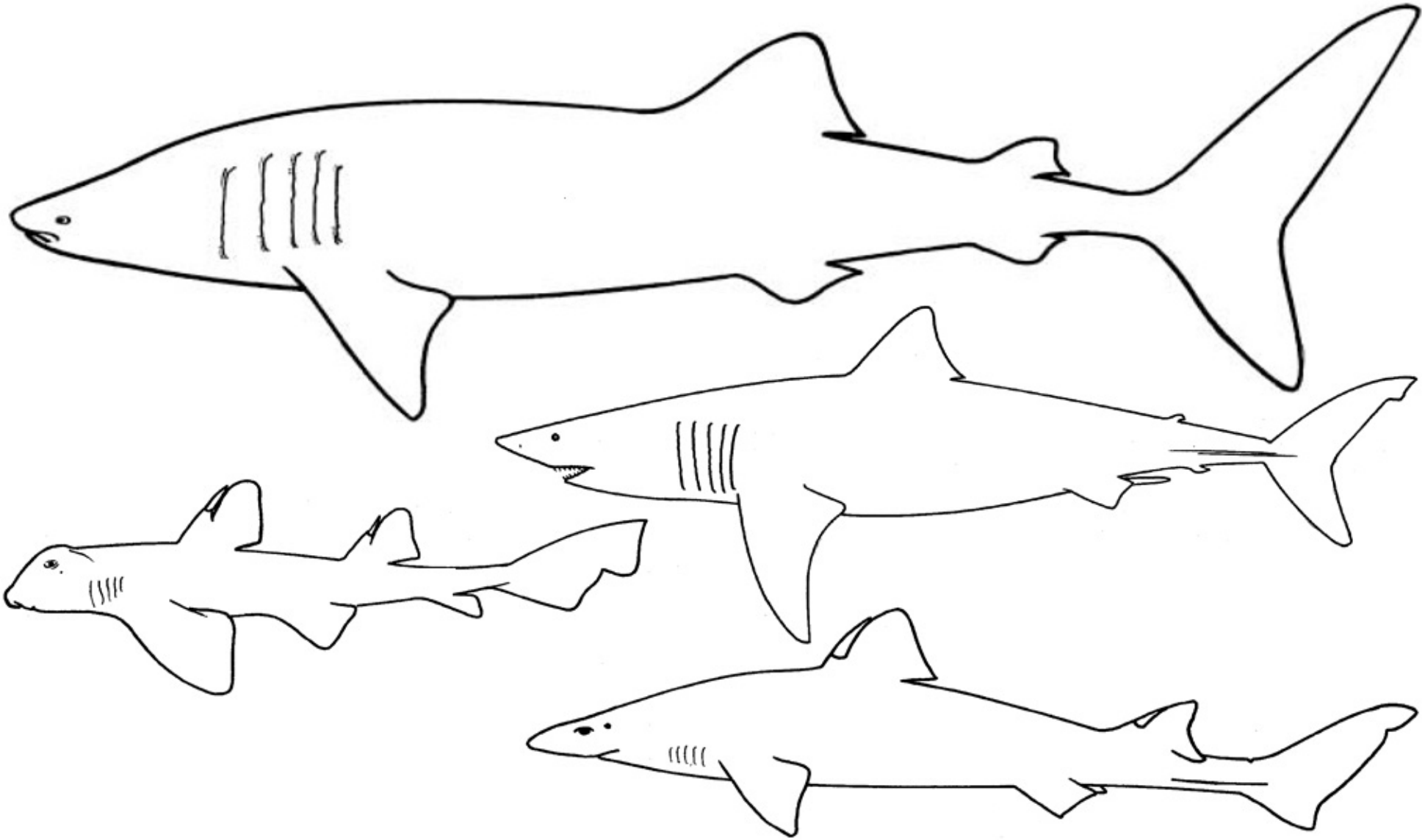
2. Give each student a piece of butcher paper or newsprint. Students place paper over the shark masters. They use crayons to lightly rub over the shark masters. (Hint: use the side of a fat crayon with the paper removed.) The outline of the shark, as well as the rough texture, will appear on the butcher paper.

3. Students use crayons, colored pencils, markers, or watercolors to create ecosystems for their sharks.

Deeper Depths

Have students sort sharks: put the sharks in order from smallest to largest. Review names of sharks from smallest to largest.

Rough Rubbin' Sharks



Sharks in Danger

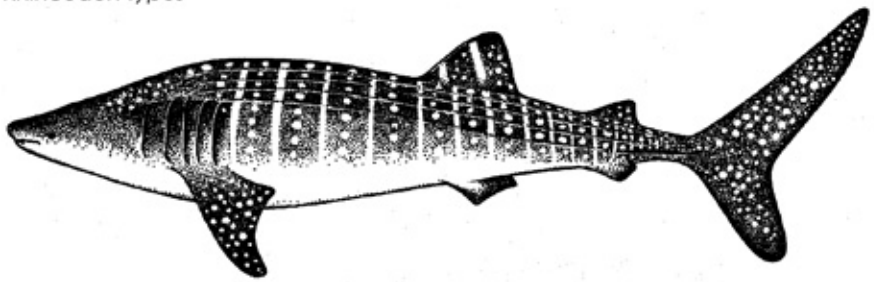
While sharks are often feared as "man-eaters," the truth is that humans pose a far greater danger to sharks than they pose to us. Threats to shark populations include overfishing, bycatch as a result of fishing operations, and habitat degradation. The negative public image of sharks can be a challenge to conservation efforts.

Slow-growing animals that reach maturity only after several years, sharks produce few young. When shark populations become depleted, they may take decades to recover. In fact, some species—like the rare Ganges shark *(Glyphis gangeticus)* may soon be extinct.

There are nearly 400 species of sharks. They inhabit virtually all ocean environments and range in size from about 22 centimeters (8 in.) to about 12 meters (nearly 40 ft.).

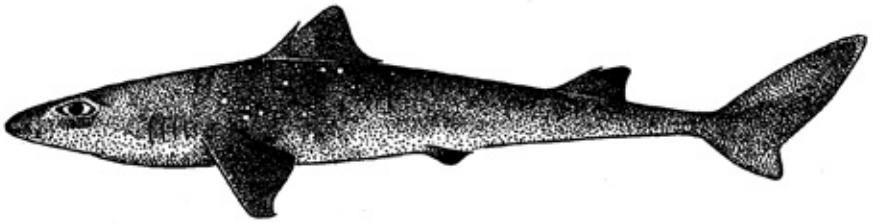
On the following pages you'll find information on seven of the shark species that are most in need of conservation.

whale shark
Rhincodon typus



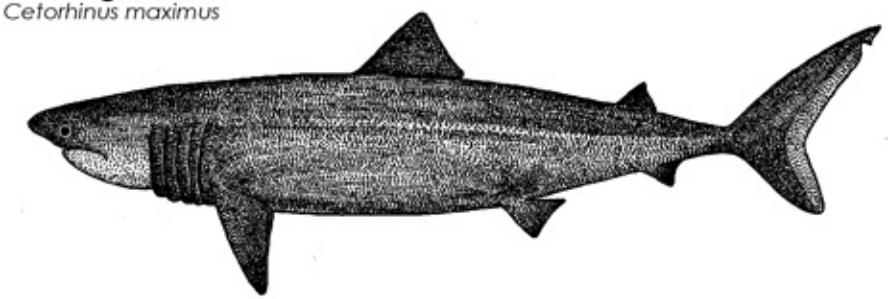
distribution:	oceanic and coastal, generally close to or at the surface in tropical and temperate seas worldwide. They are often found offshore but also inshore, even in lagoons.
adult size:	to about 12 m (39 ft.), the world's largest fish
conservation concerns:	Whale sharks have been fished by harpoon in some areas, to the point of depletion. Protected in U.S. waters of the Atlantic, Gulf of Mexico, and Caribbean.

spiny dogfish
Squalus acanthias



distribution:	coastal and pelagic over the continental shelf in areas of temperate and subarctic waters worldwide
adult size:	about 1 m (3.3 ft.)
conservation concerns:	Spiny dogfish accounted for about 96% of U.S. exports of shark meat in 1995. In the 1990s, dogfish landings in the U.S. Atlantic increased six-fold, depleting the population. New legislation for the U.S. Atlantic severely reduces dogfish fishing.

basking shark
Cetorhinus maximus



distribution:	coastal and pelagic over continental shelves in temperate seas. They are found offshore as well as inshore, into the surf zone and enclosed bays.
adult size:	to about 9.8 m (32 ft.)
conservation concerns:	Historically basking sharks have been fished by harpoon, sometimes until local stocks were depleted. They also become entangled in gillnets and trawls. Protected in U.S. waters of the Atlantic, Gulf of Mexico, and Caribbean.

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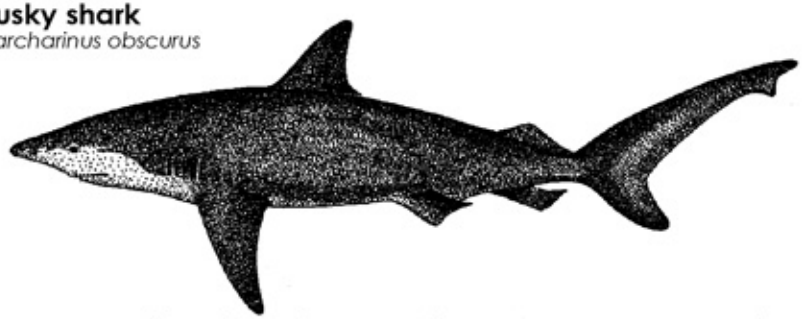
dusky shark
Carcharinus obscurus

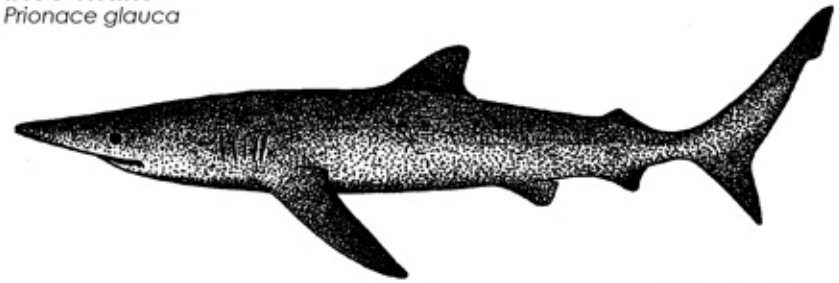


distribution: from the surf zone to well out to sea in temperate and tropical areas of the Pacific, Western Atlantic, and Western Indian Oceans

adult size: about 3.4–3.7 m (11.2–12.0 ft.)

conservation concerns: Dusky sharks were once abundant but now are in decline due to overfishing. Their fins are considered the highest quality for soup. In 1998 the American Elasmobranch Society issued a resolution urging the National Marine Fisheries Service to prohibit fishing for this species.

blue shark
Prionace glauca

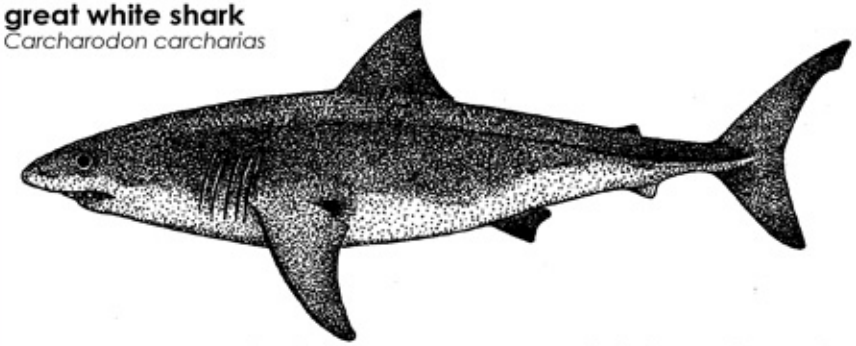


distribution: oceanic in tropical and temperate seas worldwide. They are usually found offshore but may venture inshore, especially at night.

adult size: about 1.8–3.2 cm (6.0–10.6 ft.)

conservation concerns: Blue sharks are among the predominant species fished in the U.S. Pacific. More than 60,000 are killed each year for their fins (for soup) in the Hawaiian longline fishery—one of the few fisheries left where finning is allowed. Finning is prohibited in Atlantic, Alaska, and California waters.

great white shark
Carcharodon carcharias

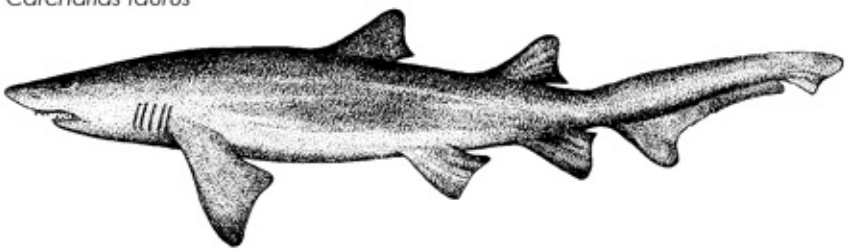


distribution: coastal and offshore over continental shelves and around continental islands in most temperate oceans of the world

adult size: about 3.7–6.0 m (12.0–19.7 ft.)

conservation concerns: Great white sharks are often a bycatch of other shark fisheries such as longlines, hook-and-line, gillnets, purse seines, and others. They are also fished for their teeth and jaws, which are used as decorations. Protected in U.S. waters of the Atlantic, Gulf of Mexico, and Caribbean.

sandtiger shark
Carcharias taurus



distribution: shallow waters of the surf zone, bays, and reefs to about 191 m (627 ft.) in areas of the temperate and tropical Atlantic, Indian, and Western Pacific Oceans

adult size: about 2.2–3.2 m (7.2–10.5 ft.)

conservation concerns: Sandtigers are fished primarily with line gear, also gillnets and trawls. Like other coastal sharks, they depend on nearshore habitats, which are vulnerable to destruction and degradation. Protected in U.S. waters of the Atlantic, Gulf of Mexico, and Caribbean.