

# Shark Skin Simulation

## Collect

- 2 sheets of cardstock
- Pencil
- Wax crayons, paper removed
- 1 piece of 40–60 grit sandpaper
- Hot iron
- Scissors
- Newspaper (optional)

## Draw a shark

1. Use a pencil to draw a large shark on one sheet of cardstock. Make sure that the drawing takes up most of the paper.
2. Use the crayons to color the entire rough side of a piece of sandpaper. Make sure to press hard so the wax transfers to the sandpaper. It is easiest to do this by holding the crayon flat against the paper so you are coloring with the whole crayon rather than just the tip.

## Add the skin

1. Place the cardstock shark on a flat, heat-proof surface. Lay the sandpaper on top of the shark with the crayon side facing down. \*Cover the area with newspaper first, if you want to ensure wax does not transfer to your working surface.
2. Place the second piece of cardstock on top of the sandpaper. This will create a buffer for your iron.
3. Place a warm iron on top of the stack for about 60 seconds. Remove the top sheet of cardstock and sandpaper, and then let the wax dry for about one minute.
4. Use scissors to cut around the shark.

## What's happening?

Try rubbing your hand back and forth against the paper shark. What does it feel like? The heat of the iron should have transferred lots of little wax bumps to your paper shark. Even though a shark's skin looks smooth, it's actually covered in very tiny scales called dermal denticles.

Scientists believe the dermal denticles help reduce drag as the shark swims through the water. As water flows over the skin, it hits each little bump and creates a little swirl of suction that helps propel the shark forward. Some scientists also think that they help keep the shark cleaner because the rough texture prevents other animals, like barnacles and algae, from attaching to the shark.