

Shark Nap Champions: Exploring the World of Nurse Sharks

Lesson Overview

Target Age: 9 years old (Grade 4 focus)

Duration: 60–75 minutes

Subject: Marine Biology / Science

Learning Objectives: By the end of this lesson, Keatyn will be able to:

- Identify three physical characteristics that make nurse sharks unique (barbels, tail shape, skin texture).
- Explain the "buccal pumping" method of breathing and how it differs from many other sharks.
- Describe the "suction feeding" method used by nurse sharks to hunt.
- Create a "Nurse Shark Fact File" or habitat diorama to demonstrate understanding.

Materials Needed

- Printed images or books featuring nurse sharks
- A drinking straw and a small cup of water
- A small piece of sandpaper (or a rough sponge)
- Art supplies: Paper, colored pencils/markers, or a shoebox for a diorama
- Playdough or modeling clay (optional)
- Access to a short video clip of a nurse shark feeding (optional)

Success Criteria

Keatyn will know she is successful if she can:

- Label a drawing of a nurse shark with at least 4 body parts.
- Demonstrate "suction feeding" using a straw.
- Explain why nurse sharks can stay still on the ocean floor while other sharks must keep swimming.

1. Introduction: The Couch Potato of the Sea (10 Minutes)

The Hook: "Keatyn, if I told you to imagine a shark, you probably think of a big Great White swimming fast with its mouth open. But what if I told you there is a shark that spends most of its day napping in a pile with its friends, has whiskers like a cat, and eats like a vacuum cleaner?"

Discussion: Ask Keatyn what she already knows about sharks. Do they ever sleep? Do they have to swim to breathe? Explain that nurse sharks break many of the "normal" shark rules.

Objective Statement: "Today, we are going to become experts on the Nurse Shark—the 'Couch Potato' of the ocean—and learn how their cool bodies help them live on the sandy seafloor."

2. Body: I Do, We Do, You Do (45 Minutes)

Part 1: The "I Do" - Discovery Phase

Talking Points:

- **The Skin:** Show the sandpaper. Explain that nurse shark skin is very tough and feels like sandpaper (dermal denticles). It protects them from rocks and coral.
- **The Face:** Point out the *barbels*. These look like little whiskers. They use them to "taste" and "feel" for food hidden in the sand.
- **The Breathing:** Most sharks use "ram ventilation" (swimming with mouths open to get oxygen). Nurse sharks use "buccal pumping." They use their cheek muscles to pull water over their gills so they can stay perfectly still.

Part 2: The "We Do" - The Vacuum Experiment

The Suction Test: Nurse sharks don't usually bite and tear; they "slurp."

1. Give Keatyn a straw and a cup of water.
2. Ask her to try to "inhale" the water through the straw without moving her head.
3. **The Concept:** Explain that nurse sharks have a huge throat cavity. When they open their mouths fast, it creates a vacuum that sucks snails, crabs, or small fish right in!
4. **Interactive Game:** "Barbel Hunt." Hide a few small objects (like beads or coins) under a thin layer of sand or inside a folded cloth. Have Keatyn try to "feel" them out using only two fingers (simulating barbels) without looking.

Part 3: The "You Do" - Creative Application

Choice Activity: Keatyn can choose one of the following to show what she learned:

- **Option A: The Nurse Shark Blueprint.** Draw a nurse shark and label the barbels, the rounded dorsal fins, the long tail (caudal fin), and the small mouth. Write one "fun fact" next to each part.
- **Option B: The Day in the Life Comic.** Create a 4-panel comic strip showing a nurse shark napping with friends, using barbels to find a snack, "vacuuming" a crab, and breathing while resting on the sand.
- **Option C: The Clay Model.** Sculpt a nurse shark out of clay, making sure to include the distinct "whisker" barbels and the flat belly suited for the seafloor.

3. Conclusion: Wrap-Up & Recap (10 Minutes)

Summary: Review the three "S" words of the Nurse Shark:

- **Sleeping** (They love to rest in groups).
- **Suction** (How they eat).
- **Sensing** (Using their barbels).

Reflection: Ask Keatyn: "If you were a nurse shark, what would be your favorite thing to 'vacuum' up

for dinner? Why do you think being able to stay still is an advantage for them?"

Closing: Celebrate Keatyn's new status as a "Nurse Shark Specialist"!

Assessment & Feedback

Formative Assessment: During the "Barbel Hunt" and "Suction Test," check for understanding of how these adaptations help the shark survive.

Summative Assessment: Evaluate the chosen "You Do" project. *Success Benchmarks:* Did she include the barbels? Does she mention suction or buccal pumping? Is the habitat (the seafloor) represented correctly?

Differentiation & Adaptations

- **For More Challenge:** Research why they are called "Nurse" sharks (theories include the sound they make when feeding or the Old English word 'nusse').
- **For More Support:** Provide a pre-drawn shark outline for labeling if drawing is a struggle. Focus on the two most visible traits: the whiskers (barbels) and the napping behavior.
- **Kinesthetic Variation:** Have Keatyn lie on the floor and practice "buccal pumping" (opening and closing the mouth/cheeks) to visualize how the shark breathes while resting.