

SHARKS 4 KIDS LESSON PLAN

Teacher:

Date:

Grade Level: Elementary

Subject:
Climate Change and Sharks

Learning Target: Students will understand and be able to explain how climate change disrupts certain types of sharks' migratory patterns and results in bycatching.

Link To Standards:

Common Core: CCSS.ELA-LITERACY.SL.1.1; CCSS.ELA-LITERACY.SL.1.2; CCSS.ELA-LITERACY.SL.1.3; CCSS.ELA-LITERACY.SL.2.1; CCSS.ELA-LITERACY.SL.2.2 ; CCSS.ELA-LITERACY.SL.2.3; CCSS.ELA-LITERACY.L.1.4; CCSS.ELA-LITERACY.L.2.4
Next Generation Science Standards: LS1.A; LS1.B; LS1.D; LS2.A; LS2.C; LS3; LS4.C; ESS3.C; CCI; CCC6
Ocean Literacy Scope and Sequence: P4A; P5A.3; P5A.4; P5B; P5B.1; P5B.2; P6C.3; P6C.5; P6C.6; P6C.7; P7I
[Insert Procedural Writing Lesson Standards]
[Insert Persuasive Writing Lesson Standards]

Vocabulary: climate change, shark, fishing, overfishing, bycatch(ing), migration, protect(ed)

Interdisciplinary Connection:

While a science lesson, this lesson plan bridges numerous subject areas. For example, it relies on students' mathematical skills by asking them to address the concept of "more or less" when moving sharks from one tray to the other. Finally, the assessment of the portion asks students to use their writing skills - either procedural writing or persuasive writing based on their level.

Essential Questions:

- What do you know about climate change?
- How does climate change impact our oceans?
- What do you know about where sharks live?
- How does climate change impact sharks?
- What are some ways that we can protect sharks and stop climate change?

Introduction:

Teacher introduces the lesson with the PowerPoint slides.. The slides are picture-based, and allow the teacher and class to discuss:

- Climate change (including its causes and how it affects the oceans)
- The concept that some areas of the ocean are protected

Model

Materials

- Two Tupperware trays
- Red and blue food coloring
- Rice
- Beans
- Large Spoon
- Water
- Cup
- Paper
- Markers

Example



Teacher sets up two Tupperware trays and fills them with water.. Next to one of the trays, the teacher puts a “protected” sign.. In the “Protected” tray, the teacher puts a drop of red food coloring; in the other tray, the teacher puts a drop of blue food coloring.. The teacher tells the students that the tray with the “red” water is the protected part of the ocean, i.e., that commercial fishing is not allowed there, and that the blue tray is the “unprotected” water, where commercial fishing is allowed.



The teacher takes a handful of rice, and puts half in the red tray and half in the blue tray. The teacher then takes a smaller handful of beans, and puts the vast majority in the red tray while putting a couple in the blue tray. The teacher tells the class that the rice represent fish, while the beans represent sharks. The teacher asks the class what they notice about how the sharks and fish are spread out across the “protected” and unprotected parts of the ocean. The teacher then demonstrates commercial fishing by, using the large spoon, scooping some of the rice out of the “unprotected” water.



The teacher explains that, because of climate change, the water in the protected part of the ocean is getting hotter, and that the water in the unprotected part of the ocean is also warming up to the temperature that sharks prefer. The teacher models this by pouring some of the water (including the beans) from the red “protected” tray into the blue unprotected tray.



The teacher then asks the students what happened to the colder water. The teacher will guide a discussion with the goal of having students acknowledge two points: (1) the water got warmer (as displayed by its change in color), and (2) there are more sharks in the “unprotected” water as a result of its temperature changing.



The teacher will then again demonstrate commercial fishing in the unprotected water. This time, using the large spoon, the teacher will scoop both fish (rice) and sharks (beans). The teacher will ask the students what they noticed, with the goal of having the students acknowledge that sharks are now more likely to be caught in the unprotected area as a result of “bycatch.”

The teacher will then invite the students to engage in a discussion of the demonstration.

Differentiated Independent Activities

On Level Activity

Students will create a procedural writing piece detailing how climate change impacts sharks by using a "First, Next, Last" worksheet provided by the teacher (e.g., "First, pollution and carbon causes water to warm. Next, sharks migrate with warm waters to unprotected areas. Last, sharks are more likely to be caught as a result of bycatch in unprotected areas.")

Support Strategy

*Small group

Students can cut out pictures and past them into the "First, Next, Last" chart, and can label, write, or draw pictures with teacher support to show understanding of lesson content.

Enrichment Activity

Students will create a persuasive writing piece, e.g., a letter, petition, or post-card to encourage others to address climate change and protect sharks.

ESL Strategies:

- For student discussion, teacher can pair ESL students based on first language and give them opportunities to discuss questions and the lesson content in their first language.
- The teacher can also allow learners to use both pictures and writing to demonstrate their understanding of the lesson content.
- Vocabulary cards will be presented with pictures.