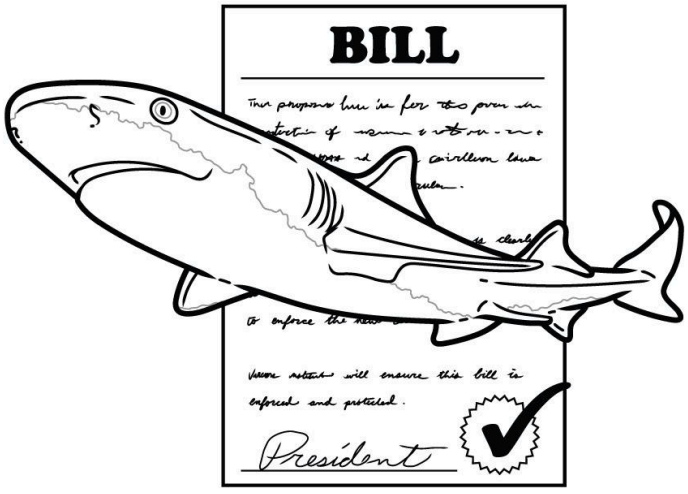
Government and Shark Conservation

How Data Becomes Law

Activity for Grades 6 - 8



OBJECTIVE

Students will understand how data collection leads to the creation of laws by exploring shark conservation.

HOW LAWS PROTECT OUR OCEANS AND SHARKS AND WHY THEY'RE IMPORTANT

Our oceans are home to thousands of amazing species, including sharks - one of the top predators that help keep the ocean balanced and healthy. Today, sharks and many other marine animals are in danger because of pollution, overfishing, and habitat destruction.

Why do we need laws?
Sharks are important to ocean ecosystems. When population numbers decrease, it affects the whole food chain. Unfortunately, many shark species are being overfished, caught accidentally, or harmed by plastic pollution. Without rules to protect them, some sharks could go extinct.

Laws are made to:
• Protect endangered species, like sharks.
• Control pollution that harms sea life.
• Set limits on how much fishing can happen and where.
• Create marine protected areas where animals can live and breed safely.

How are these laws made in the U.S.?
Scientists collect data to understand what's happening in the ocean and focus upon an issue if they discover one - such as a decrease in shark population. The data is released to the public and government to start the process of creating a bill (proposed law) which includes solutions to fix the problem. In the U.S. the bill is debated in Congress and - if approved - the bill becomes a law. Specific agencies - like NOAA and the EPA - ensure the new rules are followed and enforced.

Examples of Ocean protection laws:

- Shark Finning Ban - This law makes it illegal to remove shark fins and discard the rest of the shark's body overboard - into the ocean [as waste].
- Marine Protected Areas - This law limits fishing and boating - protecting fragile habitats and ensuring access is limited.
- Clean Water Act - This law helps prevent pollution from entering rivers and oceans. All waterways are connected!

In Summary:
Laws protect sharks and oceans by using science, government, and public action to keep marine life safe. These rules help ensure that oceans stay healthy for animals - and for us too!

HOW A LAW IS MADE

Student Overview

DATA COLLECTION: Scientists gather information (data) about sharks through methods like satellite tagging, acoustic tracking, underwater video surveys (BRUVS), and DNA analysis from a tissue sample. This data tells us about shark migration patterns, feeding grounds, reproduction, and overall health. Population estimates help identify whether a species is stable or declining. Habitat information includes coral reefs, mangroves, and open oceans, which are crucial for shark survival. Scientists also study human impacts like pollution (plastic, heavy metals, oil spills), climate change (warming waters, ocean acidification), and overfishing (targeted fishing and bycatch) to understand how these stressors affect sharks and their ecosystems.

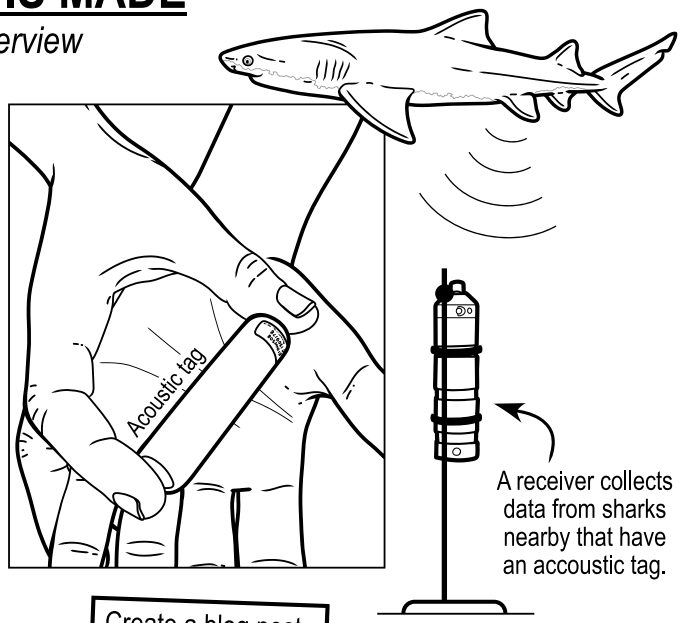
PROBLEM IDENTIFICATION: When data reveals a rapid decline in shark populations, scientists classify species as "threatened," "endangered," or "critically endangered" under systems like the IUCN Red List. Sharks reproduce slowly - many only have a few pups every couple of years - so populations take a long time to recover. This makes them highly vulnerable to overfishing and habitat destruction. Identifying problems early allows scientists and conservationists to prioritize action, such as stopping unsustainable fishing practices, restricting finning, and protecting breeding and nursery grounds.

PUBLIC AWARENESS: Sharing information with the public is critical for conservation success. Scientists and environmental groups use news articles, documentaries, classroom lessons, museum exhibits, and interactive social media campaigns to inspire interest and action. Public outreach can include citizen science projects - involving local communities in reporting shark sightings and tracking beach conditions. Raising awareness helps people understand that sharks are not just "scary predators," but vital for ocean balance, keeping fish populations healthy and coral reefs thriving.

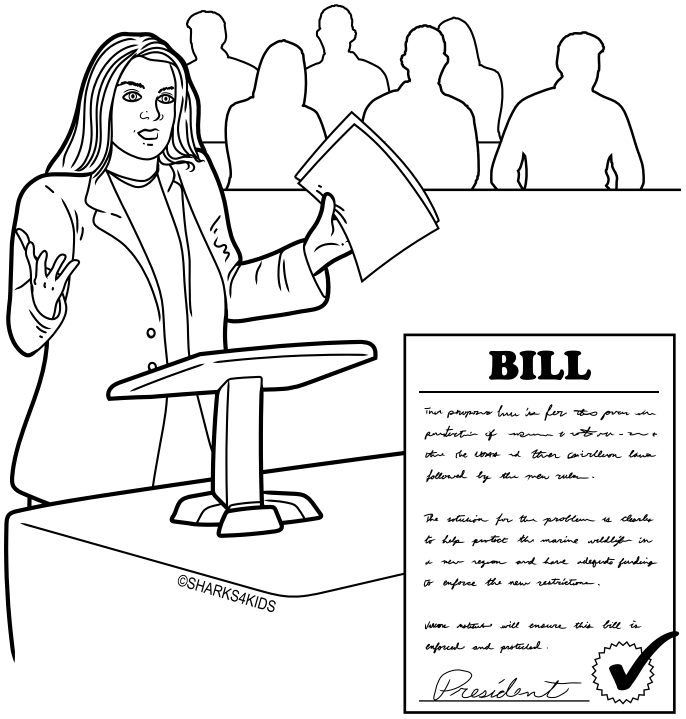
POLICY PROPOSAL: When scientific evidence shows a need for protection, environmental groups, conservationists, or lawmakers propose policies. These can include fishing bans, shark sanctuaries, marine protected areas (MPAs), bans on shark fin trade, or stricter regulations on bycatch. Proposals often cite scientific data and economic benefits (healthy shark populations support ecotourism and sustainable fisheries). A "bill" (proposed law) is the formal way solutions are introduced into government for consideration.

DEBATE AND VOTING: In the U.S., a bill (proposed law) goes through committees in the House of Representatives and the Senate, where experts and stakeholders provide testimony. Lawmakers debate the bill's benefits, costs, and potential impact. Amendments (changes) may be added before a final vote. This step can take months or even years, depending on political priorities and lobbying pressures. Public opinion often influences how lawmakers vote, showing how public awareness ties directly into policy-making.

LAW IMPLEMENTATION: Once the bill passes both chambers of Congress, the President signs it into law. Agencies such as NOAA (National Oceanic and Atmospheric Administration), EPA (Environmental Protection Agency), and U.S. Fish and Wildlife Service are tasked with writing detailed regulations and enforcing them. Implementation may involve funding research, training enforcement officers, monitoring fisheries, and establishing protected areas. International cooperation is sometimes required, since sharks migrate across borders and into international waters.



CONSERVATION THROUGH EDUCATION



DEFINING THE TERMS

Bill: A proposed law that is being discussed and decided on by a government.

Law: A rule created by the government that people must follow.

Policy: A plan or set of rules that guides decisions and actions.

Regulation: A specific rule created to enforce a law.

Legislation: The process of making or passing laws.

Debate: A formal discussion about ideas where people give arguments for or against something specific.

Committee: A group of people in government that studies an issue and makes recommendations.

Amendment: A change or addition to a law or bill.

Public Comment: A time when the public can give their opinions before a law or rule is decided.

Enforcement: Making sure laws and rules are followed, often by officials like Police or Inspectors.

Marine Conservation: Protecting and managing oceans, seas, and marine life.

Ecosystem: A community of living things and their environment working together.

Biodiversity: The variety of living species in a certain area.

Endangered Species: A species at risk of disappearing forever.

Habitat: The natural home or environment where a species lives.

Overfishing: Catching too many fish - making it so the population can't recover.

Bycatch: Marine animals accidentally caught while fishing for other species.

Marine Protected Area (MPA): A part of the ocean where human activities are limited to protect wildlife.

Coral Reef: An underwater structure made by coral animals that supports many species.

Sustainable Fishing: Catching fish in ways that keep the population healthy for the future.

Pollution: Harmful materials released into the ocean, like plastics or chemicals.

Climate Change: Long-term changes in temperature and weather that affect ocean life.

Mangroves: Coastal trees that provide shelter for marine life and protect shorelines.

Seagrass Beds: Underwater plants that provide food and shelter for many species.

Shark Conservation: Efforts to protect sharks from threats like overfishing and habitat loss.

CRITICAL THINKING

***Directions**: Answer the questions below in 1-2 complete sentences (or more).*

Why is it important to collect data before making a law about sharks? What might happen if a law was made without good data?

How can kids help protect sharks even if they're too young to legally vote?

CLASSROOM ACTIVITY - YOU'RE THE LAWMAKERS!

***Scenario**: Shark scientists just discovered that a species of reef shark is now endangered. Plastic pollution and illegal fishing are the main reasons causing a rapidly decreasing population of this species.*

Your Task:
In small groups, pretend you're a group of lawmakers working together. Follow these steps to create a new shark conservation law.

Step 1: Analyze the data:
Scientists recorded a 70% decrease in shark population numbers through a 10 year time period. Fishing boats often ignore rules about where they can legally fish and have been seen in marine protected areas.
Plastic waste was found in 60% of the shark stomachs that were analysed - deceased sharks from fishing, bycatch, and accidental or undetermined deaths (washed ashore).

Step 2: Discussion:
What's the biggest problem?
Who's responsible?
Who might be affected by a new law?

Step 3: Write a Bill (proposed law):
Your proposal should include information about the law (what it is), make note of the problem this law aims to fix, and the solution(s) to fix the problem.

Examples:

- Ban plastic bags near coastal towns due to the amount of wildlife being entangled and consuming the bags. The ban would ensure new bags are not added to the environment.
- Increase fines for illegal fishing due to fishing vessels working in marine protected areas. The fines would need to be actively enforced - deterring fishing vessels from entering protected areas.
- Create safe zones where no fishing is allowed due to the amount of overfishing in a specific area. This would create a marine protected area (with agencies enforcing it) where the wildlife could recover.

Step 4: Present and Vote:
Each group presents their "bill" to the class. The class votes on which shark law to pass. This can be a show of raised hands for 'yes' or 'no' - with the higher number of hands raised deciding if the bill becomes a law.

BILL (PROPOSED LAW) WORKSHEET

Name: _____
Date: _____
Class: _____

Title of the Bill:
Example: The Protect Our Shark Act of 2025

_____

Purpose of the Bill:
The purpose of this bill is to protect _____ (type of animal or environment) from _____ (problem or threat) and to help with _____(solution).
Additional notes for your Bill:

_____

Background:
Scientists have discovered that _____
(Describe the problem using data or facts, e.g., "shark numbers have dropped 70%")
This is caused by _____
(List one or two causes, like overfishing, plastic pollution, etc.)
Without action, _____
(Describe what could happen if the problem continues)

Action to Be Taken:
This bill proposes the following actions:
Ban _____ *(e.g., "shark finning" or "plastic bags near coastlines", etc.)*
Create _____ *(e.g., marine protected areas, specific fishing zones, etc.)*
Increase fines or punishment for _____
Support education programs about _____

Who will Enforce the Law:
□ *Local police*
□ *U.S. Coast Guard*
□ *Environmental agencies like NOAA*
□ *Other:* _____

When the Law Starts:
This law will begin on: _____ *(month/day/year)*

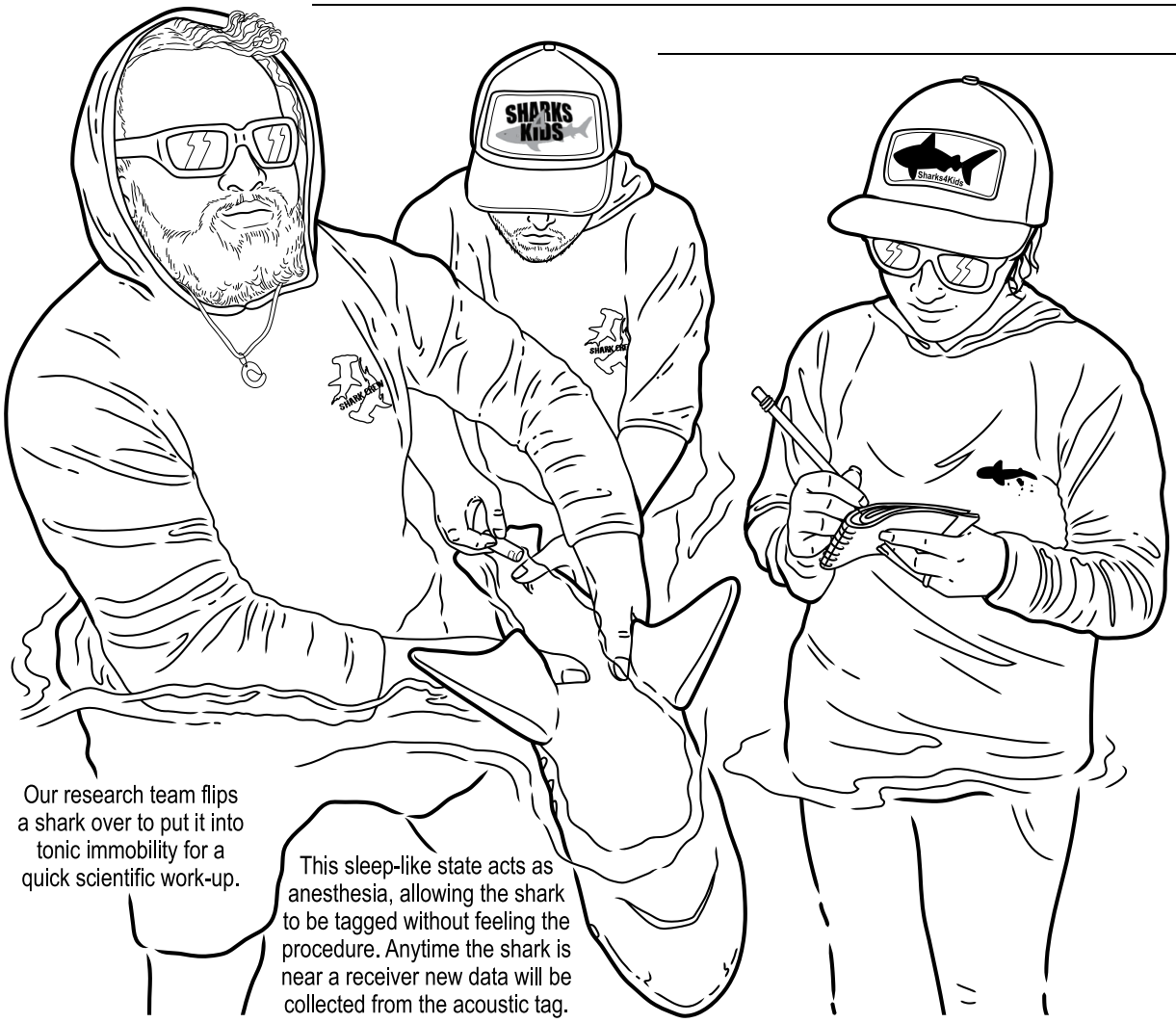
Signatures:
This law has been proposed by: _____
(Names of everyone in the group)

This law has been co-sponsored by: _____
(Name of your teacher or fellow student who supports your Bill)

Voted on: _____ *(today's date)* *This Voting results are:* □ *Passed* □ *Not Passed*

REFLECTION

Write a short paragraph answering the following question:
What did you learn about how science and government work together to solve problems?



Our research team flips a shark over to put it into tonic immobility for a quick scientific work-up.

This sleep-like state acts as anesthesia, allowing the shark to be tagged without feeling the procedure. Anytime the shark is near a receiver new data will be collected from the acoustic tag.