NOT BORING MEDIA

THE SHARK THAT CAN LIVE FOR 400 YEARS

High-Interest Nonfiction Reading Passage

WHAT'S INCLUDED

✓ Reading Passage ✓ Comprehension Questions
✓ Answer Key ✓ Teacher Guide

GRADES 4-6 • LEXILE ~750L • DOK LEVELS 1-4

Reading they'll actually do.

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WHAT'S INCLUDED

✓ High-interest nonfiction reading passage (300-400 words)

✓ 6 comprehension questions spanning DOK levels 1-4

✓ Complete answer key with explanations

✓ Teacher guide with standards, pacing, and extensions

Questions or feedback? Leave a review or message us through TPT!

THE SHARK THAT CAN LIVE FOR 400 YEARS

Somewhere in the dark, freezing waters of the Arctic Ocean, there may be a shark swimming that was born before Shakespeare wrote his first play. Greenland sharks are the longest-lived vertebrates on Earth—scientists have found individuals estimated to be over 400 years old.

These sharks look ancient. They move with an almost ghostly slowness, drifting through the depths at less than two miles per hour. Their flesh is toxic if eaten fresh. Many carry parasites that have damaged or destroyed their eyes, leaving them nearly blind. They seem like creatures from another time—and in a way, they are.

For decades, scientists struggled to determine how long Greenland sharks actually live. The traditional method of aging sharks—counting growth rings in their vertebrae—doesn't work because Greenland sharks don't have calcified vertebrae. Their skeletons are made entirely of cartilage, which leaves no rings to count.

The breakthrough came from an unexpected source: nuclear bomb tests. In the 1950s and 1960s, atmospheric nuclear explosions released a spike of radioactive carbon-14 into the environment. This carbon was absorbed by ocean creatures and preserved in their tissues. By measuring carbon-14 levels in the eye lenses of Greenland sharks—tissue that forms at birth and doesn't change—scientists could estimate when each shark was born.

The results were astonishing. One female shark was estimated to be 392 years old, with a possible range of 272 to 512 years. This would make her born sometime around 1624—the year before King Charles I took the English throne.

How do they live so long? Scientists believe their extreme longevity is connected to their slow metabolism. In the Arctic's near-freezing waters, these sharks grow less than one centimeter per year. Their hearts beat once every 12 seconds. Everything about their biology operates at a pace that seems to stretch time itself.

Greenland sharks also don't reach sexual maturity until around age 150. This means a shark born during the American Revolution wouldn't have its first offspring until the Civil War era.

In a world obsessed with speed, the Greenland shark is a living argument for slowness.

Word Count: 346 | Lexile: ~750L | Grades 4-6 | Source: Science Magazine

COMPREHENSION QUESTIONS

Name: _____ Date: _____

1 **How old is the oldest known Greenland shark estimated to be?**

- ◯ A) About 150 years old
- ◯ B) About 250 years old
- ◯ C) About 400 years old
- ◯ D) About 600 years old

2 **Why couldn't scientists use the traditional method of counting growth rings to age Greenland sharks?**

- ◯ A) The sharks are too dangerous to study
- ◯ B) Their skeletons are made of cartilage, which doesn't form rings
- ◯ C) The rings are too small to count
- ◯ D) Greenland sharks don't have vertebrae

3 **How did nuclear bomb tests help scientists determine the sharks' ages?**

- ◯ A) Radiation killed sharks, allowing scientists to study their bodies
- ◯ B) Radioactive carbon in their eye lenses revealed when they were born
- ◯ C) Explosions attracted sharks to the surface
- ◯ D) Scientists compared shark populations before and after testing

4 **What does the passage suggest is the main reason Greenland sharks live so long?**

- ◯ A) They have no predators
- ◯ B) The cold water preserves their bodies
- ◯ C) Their extremely slow metabolism
- ◯ D) They eat special foods

5 **The passage uses several specific comparisons to historical events (Shakespeare, King Charles I, the American Revolution). Why do you think the author included these references? How do they help readers understand the sharks' lifespan?**

6 **The passage ends by calling the Greenland shark 'a living argument for slowness.' What do you think the author means? In a world that values speed and efficiency, what can humans learn from an animal that grows less than one centimeter per year?**

ANSWER KEY

The Shark That Can Live for 400 Years

1. C) About 400 years old

DOK 1 — Recall. The passage states: 'scientists have found individuals estimated to be over 400 years old.'

2. B) Their skeletons are made of cartilage, which doesn't form rings

DOK 1 — Recall. The passage states: 'Greenland sharks don't have calcified vertebrae. Their skeletons are made entirely of cartilage, which leaves no rings to count.'

3. B) Radioactive carbon in their eye lenses revealed when they were born

DOK 2 — Cause and effect. The passage explains that carbon-14 from nuclear tests was absorbed into tissues. 'By measuring carbon-14 levels in the eye lenses of Greenland sharks—tissue that forms at birth and doesn't change—scientists could estimate when each shark was born.'

4. C) Their extremely slow metabolism

DOK 2 — Text evidence. The passage states: 'Scientists believe their extreme longevity is connected to their slow metabolism.'

5. Sample Response:

Historical references make the abstract number '400 years' concrete and meaningful. Saying a shark was 'born sometime around 1624' or that one born during the Revolution 'wouldn't have its first offspring until the Civil War' helps readers visualize the immense timescale. These comparisons connect the sharks to human history, making their longevity feel more real and remarkable.

6. Sample Response:

Answers will vary. The author suggests the shark's success challenges our assumption that speed equals success. The shark thrives by doing everything slowly—growing, moving, aging. Students might argue that slowness allows sustainability, patience, and longevity, while rushing leads to burnout or shorter lifespans. Others might note that what works for Arctic sharks doesn't necessarily apply to humans. Strong responses will engage with the metaphor thoughtfully.

TEACHER GUIDE

The Shark That Can Live for 400 Years

STANDARDS ALIGNMENT

- CCSS.ELA-LITERACY.RI.4.1 — Refer to details and examples in a text
- CCSS.ELA-LITERACY.RI.5.4 — Determine meaning of words and phrases
- CCSS.ELA-LITERACY.RI.5.8 — Explain how author uses evidence
- NGSS — Connections to scientific practices

PACING OPTIONS

- Quick Read (10-15 min): Passage + questions 1-4
- Standard (20-25 min): Full passage + all questions
- Deep Dive (35-40 min): Add discussion + extension

DISCUSSION QUESTIONS

- A Greenland shark born when Shakespeare was alive might still be swimming today. How does this change your perspective on time?
- These sharks don't reproduce until age 150. How does such slow development affect how we should protect them?
- The passage calls the shark 'a living argument for slowness.' What could humans learn from creatures that live life at a different pace?

EXTENSION ACTIVITIES

- Timeline: Create a timeline showing what was happening in human history when the oldest known shark was born.
- Science: Research how radiocarbon dating works. Explain how scientists used nuclear tests to age the sharks.
- Comparison: Research lifespans of other long-lived animals. Create a chart comparing them to humans.

DIFFERENTIATION

- Struggling: Pre-teach vocabulary, partner reading
- Advanced: Add research, compare to related events
- ELL: Visual supports, pre-teach context

SOURCE

- Science Magazine / University of Copenhagen