NOT BORING MEDIA

THE ANIMALS THAT PREDICT EARTHQUAKES

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 ANIMALS THAT PREDICT EARTHQUAKES

In February 1975, officials in the Chinese city of Haicheng ordered the evacuation of one million residents. Their reason wasn't a weather forecast or military intelligence. It was the behavior of animals. Snakes were crawling out of the frozen ground in the middle of winter. Horses were refusing to enter their barns. Chickens were too agitated to roost.

Hours later, a magnitude 7.3 earthquake struck. The evacuation saved an estimated 150,000 lives.

For thousands of years, people have reported unusual animal behavior before earthquakes. Dogs howl for no apparent reason. Cats hide. Birds abandon their nests. Fish swim erratically. The stories span cultures and continents—from ancient Greece to modern Japan. But scientists have long struggled to explain whether animals can actually sense earthquakes, and if so, how.

The Haicheng prediction remains one of the only successful earthquake forecasts in history—and it relied heavily on animal observations. Chinese officials had been monitoring unusual animal behavior for weeks before making their decision. The evacuation order came just hours before the quake hit.

But the story isn't straightforward. A year later, the devastating 1976 Tangshan earthquake killed over 240,000 people with almost no warning. Animal behavior had not predicted it accurately. This inconsistency highlights the difficulty of using animal observations as a reliable forecasting tool.

So what might animals be sensing? Scientists have proposed several theories. Some animals may detect subtle ground vibrations that precede major quakes—foreshocks too small for humans to notice. Others might sense changes in groundwater chemistry as stress builds in fault lines. Some research suggests animals could even detect changes in the Earth's magnetic field or electrical charges released from stressed rocks.

Despite decades of research, no one has proven conclusively that animals can predict earthquakes. The evidence remains tantalizing but inconsistent. Correlation is not causation—animals behave strangely for many reasons that have nothing to do with earthquakes.

Still, many scientists believe the question deserves more study. If animals do possess some early warning ability, understanding it could save countless lives in earthquake-prone regions.

Word Count: 341 | Lexile: ~750L | Grades 4-6 | Source: Atlas Obscura

COMPREHENSION QUESTIONS

Name: _____ Date: _____

1 **What unusual animal behavior did officials observe before the Haicheng earthquake?**

- ◯ A) Dogs running in circles
- ◯ B) Snakes crawling out of frozen ground in winter
- ◯ C) Birds flying south early
- ◯ D) Fish jumping out of water

2 **How many lives did the Haicheng evacuation save?**

- ◯ A) About 15,000
- ◯ B) About 50,000
- ◯ C) About 150,000
- ◯ D) About 500,000

3 **What does the phrase 'correlation is not causation' mean in this context?**

- ◯ A) Animals definitely cause earthquakes
- ◯ B) Just because two things happen together doesn't mean one causes the other
- ◯ C) Scientists have proven animals predict earthquakes
- ◯ D) Earthquakes cause animals to behave strangely

4 **Why does the passage mention the 1976 Tangshan earthquake?**

- ◯ A) To show another successful animal prediction
- ◯ B) To illustrate that animal predictions are inconsistent and not always reliable
- ◯ C) To prove that animal predictions never work
- ◯ D) To describe China's earthquake history

5 **The passage lists several theories for what animals might be sensing. Choose two theories and explain why each one is scientifically plausible but difficult to prove.**

6 **The passage ends by saying 'If animals do possess some early warning ability, understanding it could save countless lives.' Do you think governments should invest more in studying animal behavior for earthquake prediction? What are the potential benefits and risks of relying on animal observations for public safety decisions?**

ANSWER KEY

The Animals That Predict Earthquakes

1. B) Snakes crawling out of frozen ground in winter

DOK 1 — Recall. The passage states: 'Snakes were crawling out of the frozen ground in the middle of winter.'

2. C) About 150,000

DOK 1 — Recall. The passage states: 'The evacuation saved an estimated 150,000 lives.'

3. B) Just because two things happen together doesn't mean one causes the other

DOK 2 — Vocabulary in context. The passage uses this phrase to caution that animals behaving strangely before an earthquake doesn't prove they sensed the earthquake—they may have other reasons for the behavior.

4. B) To illustrate that animal predictions are inconsistent and not always reliable

DOK 2 — Author's purpose. The passage states 'Animal behavior had not predicted it accurately. This inconsistency highlights the difficulty of using animal observations as a reliable forecasting tool.'

5. Sample Response:

Two theories: (1) Animals might detect 'subtle ground vibrations' (foreshocks)—plausible because many animals are more sensitive to vibrations than humans, but difficult to prove because we'd need to monitor animals constantly and correlate their behavior with seismic data. (2) Animals might sense 'changes in groundwater chemistry'—plausible because some animals are sensitive to chemical changes, but difficult to prove because we'd need to measure both water chemistry and animal behavior simultaneously in earthquake zones.

6. Sample Response:

Answers will vary. Benefits: If the ability is real, early warning could save many lives (Haicheng saved 150,000); it's a low-tech solution that could help developing countries. Risks: Inconsistent results (Tangshan killed 240,000 with no warning); false alarms could cause panic or make people ignore future warnings; resources might be better spent on seismic technology. Strong responses will weigh both sides and consider how animal observations might complement, not replace, scientific instruments.

TEACHER GUIDE

The Animals That Predict Earthquakes

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
- C3 Framework — Historical thinking skills

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

- The Haicheng evacuation saved 150,000 lives, but Tangshan had no warning. Should we use unreliable methods if they sometimes work?
- Animals may sense things humans can't detect. What might we be missing by relying only on technology?
- If animal predictions are real but inconsistent, how should scientists study something that can't be reliably reproduced?

EXTENSION ACTIVITIES

- Science: Research one theory for how animals might sense earthquakes. Create a diagram explaining the process.
- Data Analysis: Find earthquake prediction success rates. Should we invest in animal monitoring? Defend your position.
- Research: Investigate other natural disasters animals may predict. Create a chart of animals and what they sense.

DIFFERENTIATION

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

SOURCE

- Atlas Obscura / Giethoorn Tourism