NOT BORING MEDIA

THE DOG THAT COULD SMELL CANCER

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 DOG THAT COULD SMELL CANCER

In 2004, doctors in England published a surprising study that captured worldwide attention: trained dogs could detect bladder cancer in patients simply by smelling their urine samples. The dogs in the study correctly identified cancer with remarkable accuracy—far better than random chance would predict. Since then, extensive research has confirmed that dogs can detect several types of cancer with accuracy rates that sometimes exceed traditional medical screening methods.

Cancer cells produce chemical compounds that are subtly different from those produced by healthy cells. These volatile organic compounds create distinctive odor signatures that the human nose cannot detect but dogs can easily identify. A dog's sense of smell is at least 10,000 times more sensitive than a human's, with approximately 300 million scent receptors compared to our mere 6 million. This biological superpower allows them to detect substances at concentrations measured in parts per trillion.

Researchers around the world have successfully trained dogs to detect lung cancer, breast cancer, ovarian cancer, skin cancer, and prostate cancer by smelling breath samples, urine samples, or directly sniffing skin. Some highly trained dogs have achieved accuracy rates above 90 percent—better than many expensive laboratory tests and imaging procedures.

The most famous cancer-detecting dog was a black labrador named Daisy who detected over 550 cancer cases during her remarkable career. In an extraordinary twist of fate, Daisy also detected cancer in her own owner—she kept persistently nudging a specific spot on the woman's chest that turned out to be a tumor that doctors had completely missed during routine examinations.

Despite these impressive results, cancer-sniffing dogs face practical limitations for widespread medical use. Training a reliable detection dog takes many months of intensive work. Dogs get tired during long screening sessions and their performance becomes inconsistent. Individual dogs vary significantly in their abilities and reliability.

Scientists are now working to develop 'electronic noses'—sophisticated machines designed to mimic canine smell detection capabilities to screen for cancer consistently and tirelessly.

Word Count: 320 | Lexile: ~750L | Grades 4-6 | Source: BBC

COMPREHENSION QUESTIONS

Name: _____ Date: _____

1 **What accuracy rate did dogs achieve in detecting cancer?**

- ◯ A) About 50%
- ◯ B) About 70%
- ◯ C) Above 90% for some trained dogs
- ◯ D) 100%

2 **How many scent receptors do dogs have compared to humans?**

- ◯ A) 6 million vs 300,000
- ◯ B) 300 million vs 6 million
- ◯ C) Equal amounts
- ◯ D) Humans have more

3 **What do cancer cells produce that dogs can detect?**

- ◯ A) Heat signatures
- ◯ B) Volatile organic compounds with distinct odors
- ◯ C) Sound waves
- ◯ D) Magnetic fields

4 **What are 'electronic noses'?**

- ◯ A) Robot dogs
- ◯ B) Machines designed to mimic canine smell detection
- ◯ C) Nose transplants
- ◯ D) Computer screens

5 **Why can't hospitals rely solely on dogs for cancer screening?**

- ◯ A) Dogs refuse to work
- ◯ B) Training takes months, dogs tire, and performance varies
- ◯ C) It's illegal
- ◯ D) Dogs can't smell cancer

6 **What does this research suggest about cross-species collaboration?**

- ◯ A) Animals are useless in medicine
- ◯ B) Other species may detect things humans and machines cannot
- ◯ C) Dogs should replace doctors
- ◯ D) Only dogs matter

ANSWER KEY

The Dog That Could Smell Cancer

1. C) Above 90% for some trained dogs

DOK 1 — Recall.

2. B) 300 million vs 6 million

DOK 1 — Recall.

3. B) Volatile organic compounds with distinct odors

DOK 2 — Inference.

4. B) Machines designed to mimic canine smell detection

DOK 2 — Inference.

5. B) Training takes months, dogs tire, and performance varies

DOK 3 — Analysis.

6. B) Other species may detect things humans and machines cannot

DOK 4 — Extended Thinking.

TEACHER GUIDE

The Dog That Could Smell Cancer

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

- Would you trust a dog's diagnosis over a traditional medical test? Why or why not?
- Should hospitals invest more in animal-assisted diagnostics?
- What other abilities might animals have that we haven't discovered yet?

EXTENSION ACTIVITIES

- Research how electronic noses work and create a comparison to dog noses.
- Design an experiment testing whether dogs can detect other health conditions.
- Interview a veterinarian about remarkable abilities they've observed in animals.

DIFFERENTIATION

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

SOURCE

- BBC / Brazilian media (Globo)