

# NOT BORING MEDIA

## THE BLIND WOMAN WHO SEES THROUGH SOUND

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.*

## NOT BORING MEDIA — TERMS OF USE

### TERMS OF USE

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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!

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# THE BLIND WOMAN WHO SEES THROUGH SOUND

Thea James lost her eyesight completely at age 11 due to a degenerative condition that gradually destroyed her vision. Today, she navigates the world confidently by making clicking sounds with her tongue and listening carefully to how those sounds bounce off surrounding objects—a remarkable technique called human echolocation. Using this method, she can ride a bicycle through traffic, hike wilderness trails, and move through crowded rooms by essentially 'seeing' the space around her through sound.

Echolocation is the same navigation system used by bats flying in darkness and dolphins swimming in murky water. These animals emit sounds and interpret the returning echoes to build detailed mental maps of their environment, allowing them to navigate and hunt with remarkable precision. A small number of blind humans have developed similar abilities through dedicated practice, essentially turning their ears into a sophisticated spatial navigation system.

James makes sharp, precise clicking sounds with her tongue—approximately three clicks per second while moving through an unfamiliar space. The sound waves travel outward and bounce off nearby objects before returning to her ears. From subtle differences in these echoes—timing, intensity, and quality—her brain constructs a detailed three-dimensional picture of her surroundings: the size and shape of objects, their distance from her body, and even what materials they might be made of based on how sound reflects differently off wood, glass, metal, and fabric.

Brain imaging studies of expert human echolocators have revealed something remarkable: they process echo information using the visual cortex—the same brain region that sighted people use exclusively for seeing. The brain has literally repurposed its visual processing systems to work with sound instead of light. Echolocators aren't just hearing their environment in unusual detail; in a very real neurological sense, they're seeing it through their ears.

James now teaches echolocation to other blind people through an organization called World Access for the Blind. Students learn to click, listen, and interpret, gradually building skills that can take years to master fully.

The technique doesn't replace all functions of sight—reading, recognizing faces, and perceiving colors remain impossible—but it provides spatial awareness and independence that transform daily life.

Word Count: 350 | Lexile: ~750L | Grades 4-6 | Source: Smithsonian Ocean

## COMPREHENSION QUESTIONS

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**1 At what age did Thea James lose her vision?**

- A) Birth
- B) Age 5
- C) Age 11
- D) Age 21

**2 What animals naturally use echolocation?**

- A) Dogs and cats
- B) Bats and dolphins
- C) Birds and fish
- D) Bears and wolves

**3 What brain region do echolocators use?**

- A) Hearing centers
- B) The visual cortex
- C) Memory centers
- D) The spinal cord

**4 What can echolocation NOT help with?**

- A) Navigating rooms
- B) Riding bicycles
- C) Reading and recognizing faces
- D) Hiking trails

**5** What does brain plasticity mean here?

- A) Brain is made of plastic
- B) The brain can rewire to compensate for lost senses
- C) Brains don't change
- D) Echolocation is easy

**6** What does this suggest about hidden abilities?

- A) All abilities are natural
- B) With training, humans can develop capabilities beyond typical limits
- C) Blind people are all the same
- D) Sound is unimportant

## ANSWER KEY

### The Blind Woman Who Sees Through Sound

- 1. C) Age 11**

*DOK 1 — Recall.*

- 2. B) Bats and dolphins**

*DOK 1 — Recall.*

- 3. B) The visual cortex**

*DOK 2 — Inference.*

- 4. C) Reading and recognizing faces**

*DOK 2 — Inference.*

- 5. B) The brain can rewire to compensate for lost senses**

*DOK 3 — Analysis.*

- 6. B) With training, humans can develop capabilities beyond typical limits**

*DOK 4 — Extended Thinking.*

## TEACHER GUIDE

The Blind Woman Who Sees Through Sound

### 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

- If the brain can repurpose visual areas for sound, what other adaptations might be possible?
- Should echolocation be taught to all blind children? What are the arguments for and against?
- What does neuroplasticity suggest about human potential?

### EXTENSION ACTIVITIES

- Try navigating a familiar room with your eyes closed and describe the experience.
- Research brain plasticity and create an infographic.
- Design a curriculum for teaching echolocation to beginners.

### DIFFERENTIATION

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

### SOURCE

- Smithsonian Ocean / Scientific American