

# Sensory Receptors

## 1. Question & Research Task

Have you ever seen a rabbit suddenly stop eating or running, and stay perfectly still? What did the rabbit detect that caused the change? How did the rabbit know to stay so still that it is difficult to detect?

**In this Slam Dunk, you will conduct brief, focused research to respond to these questions and this inquiry question:**



Eastern Cottontail Rabbit

Image Source: [Discovery Education](#), by subscription

**How can knowing about sensory receptors help us to predict phenomenon in natural environments?**

## 2. Information Sources

Choose several of the information sources linked here to gather information about sensory receptors. Use [this organizer](#) to make notes.

- [Sensory Receptors](#) video
- Senses videos: [Vision](#), [Taste & Smell](#), [Touch](#), [Hearing](#)
- [How do sensory receptors work?](#) video
- [How are animals' senses different from human senses?](#) text
- [Memory](#) text
- [Memory Matters](#) (text-to-speech and Spanish available)
- [The Senses in Humans and Animals](#) video and text
- [How Dogs Smell](#) TedEd video
- [How Do Animals See in the Dark?](#) TedEd video
- [Why the Octopus Brain is So Extraordinary](#) TedEd video

SLIDE NAVIGATION

[1](#)

[2](#)

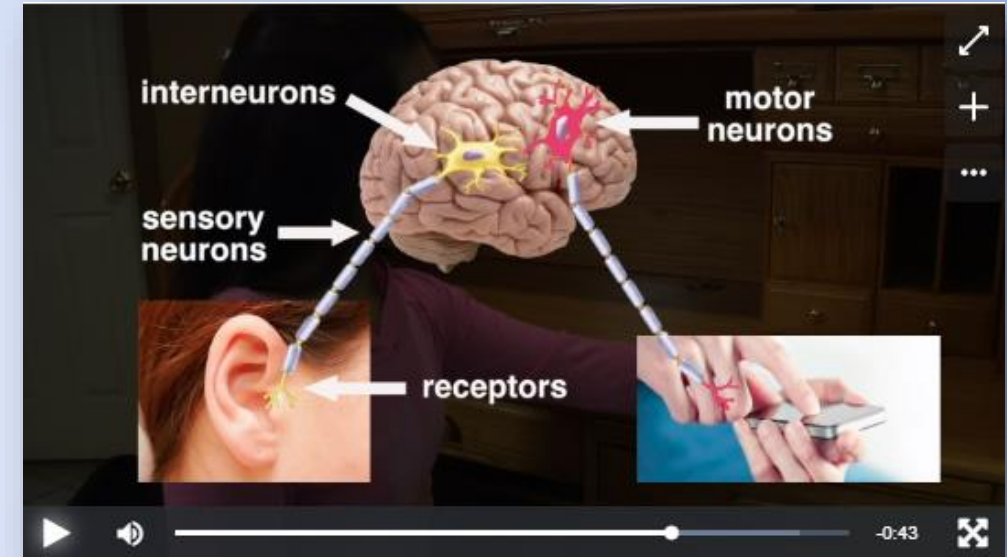
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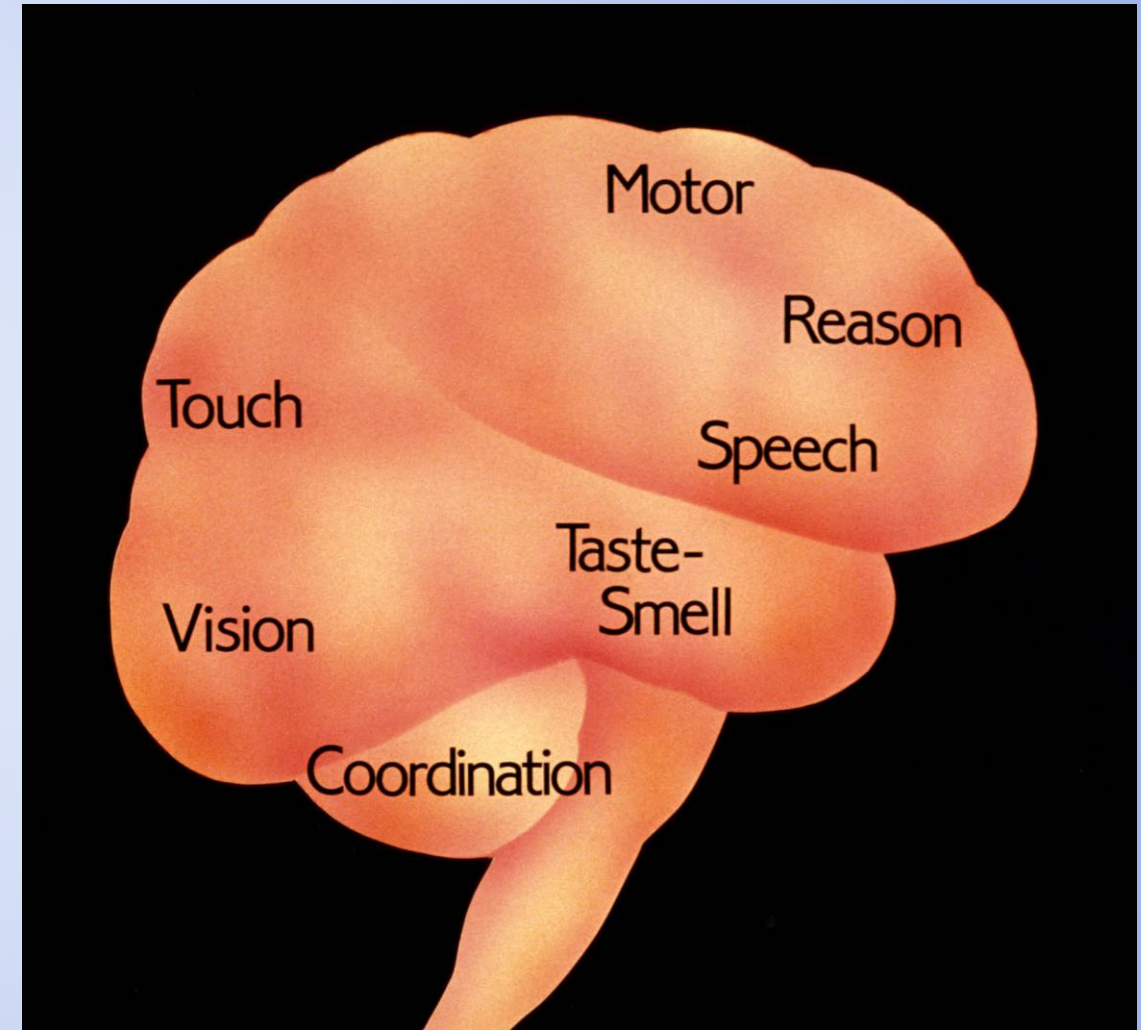
Click the image to watch a video that describes how the sensory receptors in your body respond.

Image Source: [Discovery Education](#), by subscription

### 3. Student Activity

How can we use our knowledge of sensory receptors to predict a response?

Using the information you gathered from Slide 2 sources, constructing a diagram on page 2 of [your notes sheet](#) that explains how the information moves through the body. On your diagram, add text as necessary to describe the flow of sensory information through the body.



## 4. Assessment Activity

Using your notes and the sample scenario, create a new scenario that demonstrates how an animal uses information from external stimuli to apply to an action. **Your scenario should demonstrate how the information is received and is transmitted in the animal's body.**

Your scenario can be illustrated or created using Google Slides or a digital tool such as Wixie, which can be found in the [Apps Portal](#).

You will receive feedback on your scenario based on success criteria on this [rubric](#).



This is a Lemon shark. Sharks have many electroreceptors on their bodies, which enable them to detect the electricity that prey emit.

## 5. Enrichment Activities

SLIDE NAVIGATION

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Polygraph tests use sensory information to determine truth.

"polygraph" by [spiralstares](#) is licensed under [CC BY-NC-ND 2.0](#).

Sensory receptors help us respond to the stimuli in our environments. But sometimes, our bodies indicate what is going on inside of us and the process works backwards. **Watch the videos below to learn how polygraph tests rely on sensory information.**

- [How Does a Polygraph Test Work?](#) (drop-down for English or Spanish)
- [Lying Eyes](#)

# 6. Teacher Resources

## Learning Standards Alignment

### [Maryland State Curriculum /Content Standards](#)

**PE: LS1-8:** Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

**DCI: LS1.D:** Each sense receptor responds to different inputs (electromagnetic, mechanical, chemical), transmitting them as signals that travel along nerve cells to the brain. The signals are then processed in the brain, resulting in immediate behaviors or memories.

### [Common Core State Standards for English Language Arts & Literacy](#)

**Reading: 1.** Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

**Writing: 7.** Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

**AASL Standards Framework for Learners** Inquire: Build new knowledge by inquiring, thinking critically, identifying problems, and developing strategies for solving problems.

Think: Learners display curiosity and initiative by:

I.A.2 Recalling prior and background knowledge as context for new meaning.

Create: Learners engage with new knowledge by following a process that includes:

I.B.1 Using evidence to investigate questions. I.B.3 Generating products that illustrate learning.

Share: Learners adapt, communicate, and exchange learning products with others in a cycle that includes:

I.C.1 Interacting with content presented by others.

Grow: Learners participate in an ongoing inquiry-based process by:

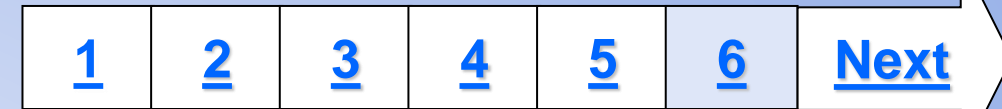
I.D.2 Engaging in sustained inquiry.

### [P21 Framework: 21<sup>st</sup> Century Student Outcomes](#)

**3. Information, Media & Technology Skills: Information Literacy:** Access information efficiently and effectively; Use information accurately and creatively for the issue or problem at hand.

**ICT Literacy:** Use technology as a tool to research, organize, evaluate and communicate information.

## SLIDE NAVIGATION



### Grade 7 Science

**Objective:** Students will be conduct brief, focused research in order to draw conclusions about how the brain uses sensory information to form memories and to make decisions regarding behavior, give examples of different types of sensory receptors, describe how the brain receives and processes sensory information from a variety of sources, and identify and give examples that different types of sensory receptors of an animal detect specific types of information within the environment.

**Time Frame:** 2-3 45-minute periods

### **Differentiation strategies for this lesson:**

- Have students use learning supports provided in BCPS Digital Content found in the [Apps Portal](#). Refer to [Digital Content Snapshot/Support pages](#) as needed.

### **Notes to the teacher:**

- Collaborate with your school library media specialist to plan and implement this lesson.
- Some videos in this lesson may not be closed-captioned; however, other text-based resources are provided.
- Provide students with login information as needed to authenticate BCPS Digital Content. Login information is available on the **BCPS Digital Content** page found via the [Apps Portal](#)

Last updated: July 2022 Use this form to [Report Broken Links](#)

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