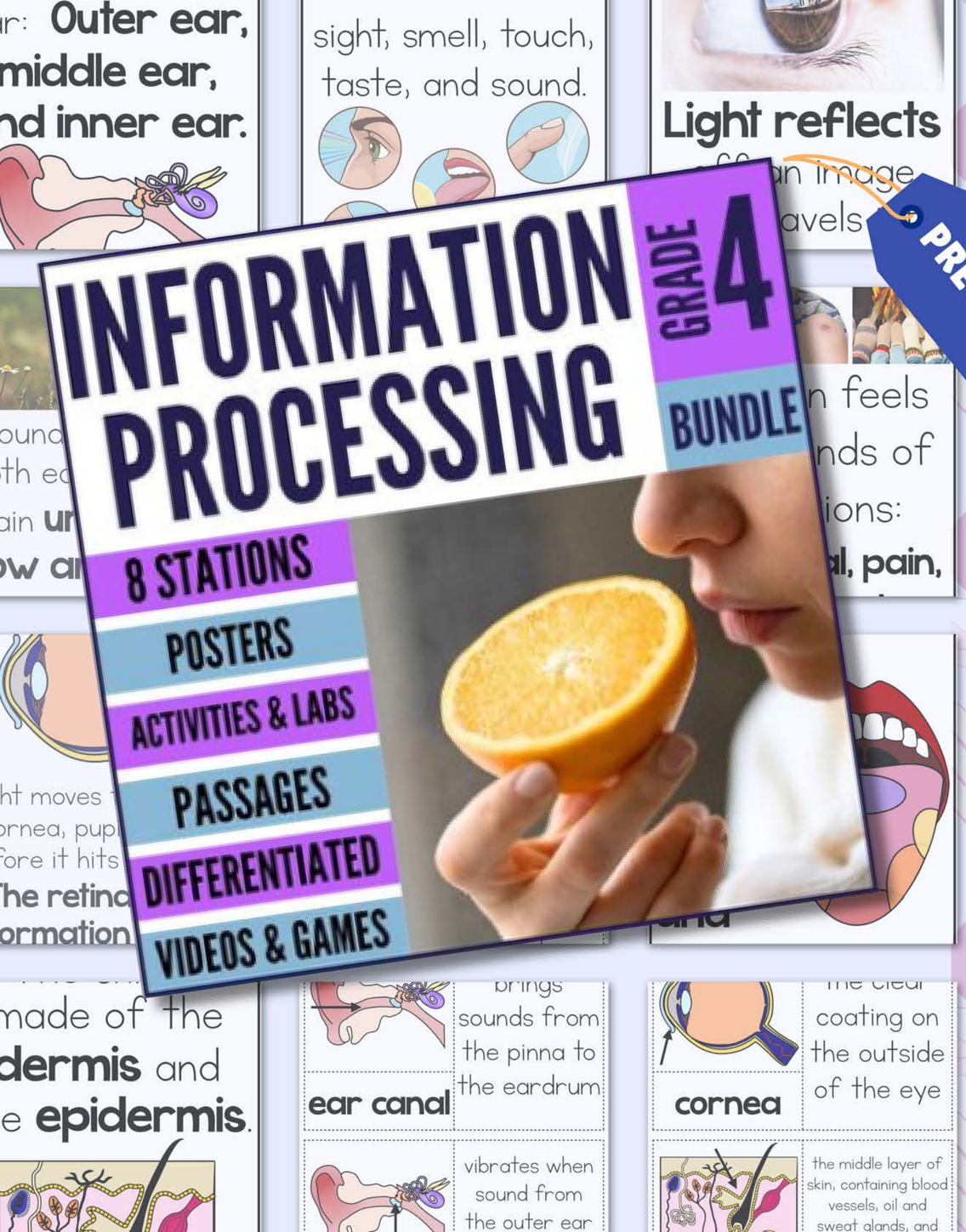


4TH GRADE

Unlock the Secrets of Sensory Systems!

INFORMATION PROCESSING

Making Sense of the World Science 4th NGSS Information Processing Life Science

KEEP SCROLLING TO SEE WHAT'S INSIDE!

YOU WILL LOVE THIS BECAUSE



Hands-On and Interactive Learning

With interactive activities including videos, games, design challenges, diagrams, and experiments, students are actively engaged in their learning.



Aligned with NGSS

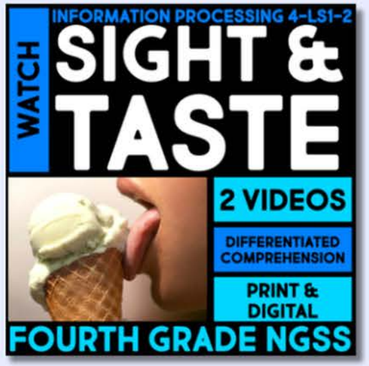
This bundle offers a complete exploration of sensory systems with stations that integrate real-world scenarios, design challenges, and evidence-based solutions.

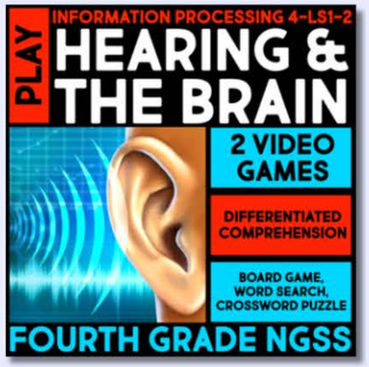


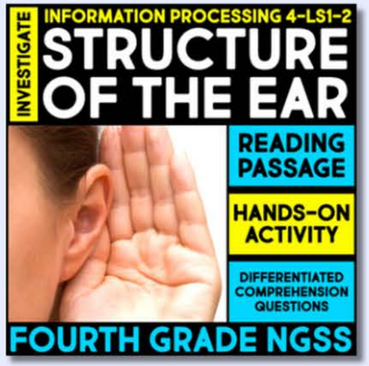
Flexible Classroom Implementation

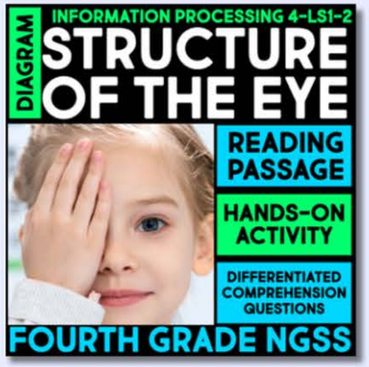
Multiple response formats and activity choices allow teachers to tailor instruction to diverse learners, supporting the various needs of your classroom.

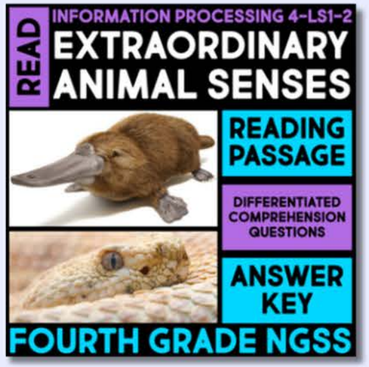
WHAT'S INCLUDED IN THE BUNDLE?

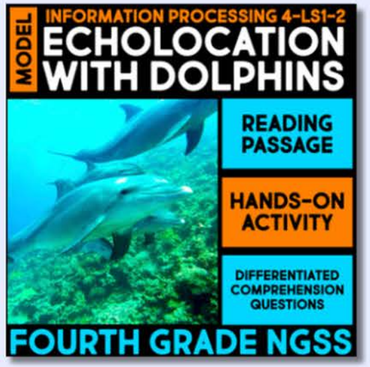


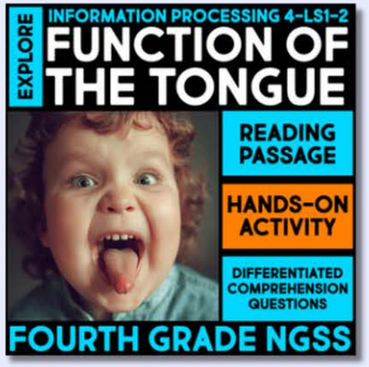


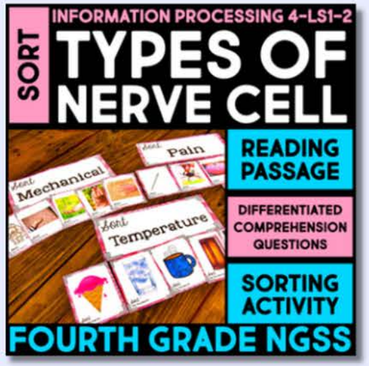












- 8 Science Stations aligned with the NGSS for 4th grade
- 6 Reading passages
- Hands-on activities
- Differentiated comprehension questions
- Digital Videos & Video Games
- Digital Google Slides & Forms

WATCH • PLAY • INVESTIGATE • DIAGRAM • READ • MODEL • EXPLORE • SORT

INFORMATION PROCESSING STATION ACTIVITIES

SUGGESTED USES

Learning Stations

Use all eight stations or just a few as learning stations that students complete at their own pace.

Science Centers

Set up a rotation where students visit each center to complete the activities.

Whole Class

Use the activities in a whole class format.

Small Group

Use the activities with a small group who need extra help.

6 READING PASSAGES

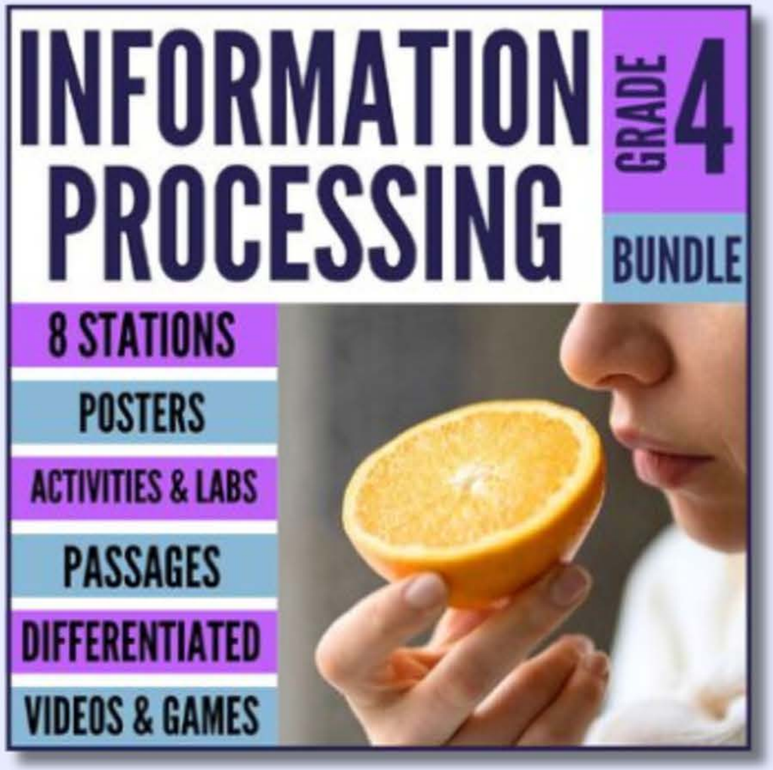


6 Reading Passages that provide all scientific background knowledge for each station

Available in two formats + Digital

Includes pictures and visuals

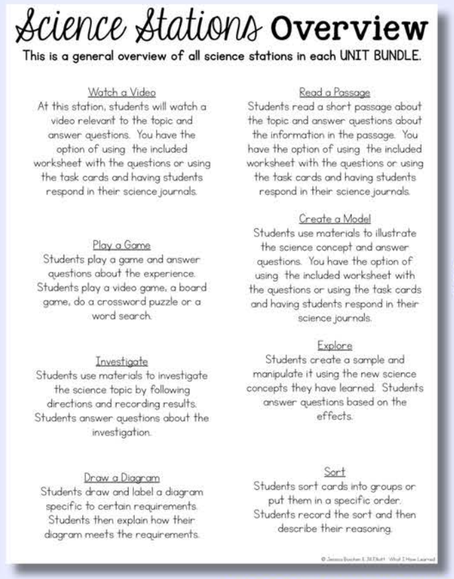
PAGE OVERVIEW





Information Processing Unit

Science Station	Standard	Objective
Watch Seeing / Tasting	4-LS1A, 4-LS1D	Students will watch a video in order to learn about the sense of sight and taste. They will answer questions in order to reinforce what they have learned.
Play Sound / The Brain	4-LS1A, 4-LS1D, (ELA) RI4.1, RI4.2, RI4.3, RI4.4, RI4.5, RI4.7, RI4.10, RF4.4	Students will play a game in order to learn about the sense of hearing and the brain. They will answer questions in order to reinforce what they have learned.
Investigate: Listen Up!	4-LS1A, 4-LS1D, (ELA) RI4.1, RI4.2, RI4.3, RI4.4, RI4.5, RI4.7, RI4.10, RF4.4	Students will read about the sense of hearing. They will read about this sense and conduct an investigation using tuning forks. They will answer questions in order to reinforce what they have learned.
Diagram: Eyes Wide Open	4-LS1A, 4-LS1D, (Math) 4.G.A.3, (ELA) RI4.1, RI4.2, RI4.3, RI4.4, RI4.5, RI4.7, RI4.10, RF4.4	Students will read about the structures and functions of the human eye. They will create a diagram of what happens to the eye when exposed to different light levels and answer questions in order to reinforce what they have learned.
Read: Super Sensors	4-LS1A, 4-LS1D, (ELA) RI4.1, RI4.2, RI4.3, RI4.4, RI4.5, RI4.7, RI4.10, RF4.4	Students will read about extraordinary sensory systems in animals. They will answer questions in order to reinforce what they have learned.
Model: Seeing with Sound	4-LS1A, 4-LS1D, (ELA) RI4.1, RI4.2, RI4.3, RI4.4, RI4.5, RI4.7, RI4.10, RF4.4	Students will read about echolocation and draw a model of how it works. They will answer questions in order to reinforce what they have learned.
Explore: Taste Test	4-LS1A, 4-LS1D, (ELA) SL4.5, RI4.1, RI4.2, RI4.3, RI4.4, RI4.5, RI4.7, RI4.10, RF4.4	Students will read about the sense of taste and conduct a taste test in order to explore this topic. They will answer questions in order to reinforce what they have learned.
Sort Can You Feel It?	4-LS1A, 4-LS1D, (ELA) RI4.1, RI4.2, RI4.3, RI4.4, RI4.5, RI4.7, RI4.10, RF4.4	Students will read about the sense of touch. They will sort pictures of different objects into categories according to the type of touch they have. They will then answer questions in order to reinforce what they have learned.



Science Stations Overview

This is a general overview of all science stations in each UNIT BUNDLE.

Watch a Video
At this station, students will watch a video relevant to the topic and answer questions. You have the option of using the included worksheet with the questions or using the task cards and having students respond in their science journals.

Play a Game
Students play a game and answer questions about the experience. Students play a video game, a board game, do a crossword puzzle or a word search.

Investigate
Students use materials to investigate the science topic by following directions and recording results. Students answer questions about the investigation.

Draw a Diagram
Students draw and label a diagram specific to certain requirements. Students then explain how their diagram meets the requirements.

Read a Passage
Students read a short passage about the topic and answer questions about the information in the passage. You have the option of using the included worksheet with the questions or using the task cards and having students respond in their science journals.

Create a Model
Students use materials to illustrate the science concept and answer questions. You have the option of using the included worksheet with the questions or using the task cards and having students respond in their science journals.

Explore
Students create a sample and manipulate it using the new science concepts they have learned. Students answer questions based on the effects.

Sort
Students sort cards into groups or put them in a specific order. Students record the sort and then describe their reasoning.



Information Processing Science Stations

On 1/20/2017 NPR's The TED Radio Hour broadcast a show on the five human senses. It's an interesting show, appropriate for adults, in which there is discussion on current research of how humans experience their environment. If interested, you can download or stream the podcast.

Every Station in this set meets the Crosscutting Concept- Systems and System Models. "A system can be described in terms of its components and their interactions." Each Station addresses one or more sensory systems, discussing the anatomy (structures and parts) and physiology (how they function in the body) of the system(s).

The Station Set 4-PS4-1 Light It Up, supports this set of stations. Light It Up introduces students to electromagnetic radiation and how objects are seen when light is reflected off objects and into the eye. This set of stations (4-LS1D) introduces students to what the eye does with reflected light once it enters the eye.

In Fourth Grade, students are expected to "Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways." (4-LS1-2). This correlates with the DCI 4-LS1D, which states, "Different sense receptors are specialized for particular kinds of information, which may then be processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions." All stations in this set meet the DCI, helping students gain an understanding of the anatomy and physiology of sensory systems in humans and animals. The Investigate, Diagram, and Model stations go into more detail and help students use models to describe how sensory systems enable an organism to gather information about their environment, process the information, and respond to it, as outlined in the Performance Expectation.

There is no specific Engineering DCI in this standard strand.

These Science Stations have several different ways students can display their understanding. Most of the variations are similar to each other, but differentiated for various classrooms and learning styles. Included are worksheets for both short-answer and fill-in-the-blank, and task cards for both short-answer and multiple choice responses. To provide even more support, give students a word list for the fill-in-the-blank options. Also included are vocabulary cards in two formats which could become a ninth station if needed.

Students are encouraged to use their Science Journals with the task cards, but worksheets are provided as well. Use the checklist to monitor student progress through the stations. The Science Stations are designed to last about 20 minutes each. Students may do one a day for eights days or two a day for four days. The following checklists will help you organize the stations.

Watch a Video
Students will watch a video in order to learn about the sense of sight and taste. They will answer questions in order to reinforce what they have learned.

Play a Game
Students will play a game in order to learn about the sense of hearing and the brain. They will answer questions in order to reinforce what they have learned.

Investigate
Students will read about the sense of hearing. They will read about this sense and conduct an investigation using tuning forks. They will answer questions in order to reinforce what they have learned.

Draw a Diagram
Students will read about the structures and functions of the human eye. They will create a diagram of what happens to the eye when exposed to different light levels and answer questions in order to reinforce what they have learned.

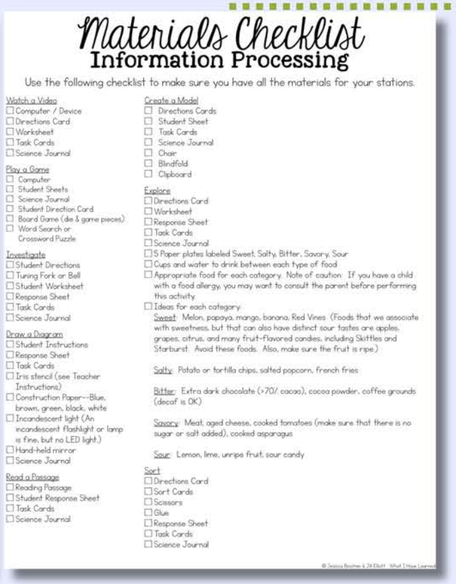
Read a Passage
Students will read about extraordinary sensory systems in animals. They will answer questions in order to reinforce what they have learned.

Create a Model
Students will read about echolocation and draw a model of how it works. They will answer questions in order to reinforce what they have learned.

Explore
Students will read about the sense of taste and conduct a taste test in order to explore this topic. They will answer questions in order to reinforce what they have learned.

Sort
Students will read about the sense of touch. They will sort pictures of different objects into categories according to the type of touch they have. They will then answer questions in order to reinforce what they have learned.

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Materials Checklist
Information Processing

Use the following checklist to make sure you have all the materials for your stations.

Watch a Video
- ☐ Computer / Device
- ☐ Directions Card
- ☐ Worksheet
- ☐ Task Cards
- ☐ Science Journal

Play a Game
- ☐ Computer
- ☐ Student Sheets
- ☐ Science Journal
- ☐ Student Direction Card
- ☐ Board Game (die & game pieces)
- ☐ Word Search or Crossword Puzzle

Investigate
- ☐ Student Directions
- ☐ Tuning Fork or Bell
- ☐ Student Worksheet
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal

Draw a Diagram
- ☐ Student Instructions
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Iris stencil (see Teacher Instructions)
- ☐ Construction Paper---Blue, brown, green, black, white
- ☐ Incandescent light (An incandescent flashlight or lamp is fine, but no LED light.)
- ☐ Hand-held mirror
- ☐ Science Journal

Read a Passage
- ☐ Reading Passage
- ☐ Student Response Sheet
- ☐ Task Cards
- ☐ Science Journal

Create a Model
- ☐ Directions Cards
- ☐ Student Sheet
- ☐ Task Cards
- ☐ Science Journal
- ☐ Chair
- ☐ Blindfold
- ☐ Clipboard

Explore
- ☐ Directions Card
- ☐ Worksheet
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal
- ☐ 5 Paper plates labeled Sweet, Salty, Bitter, Savory, Sour
- ☐ Cups and water to drink between each type of food
- ☐ Appropriate food for each category. Note of caution: If you have a child with a food allergy, you may want to consult the parent before performing this activity.
- ☐ Ideas for each category:
  - Sweet: Melon, papaya, mango, banana, Red Vines (Foods that we associate with sweetness, but that can also have distinct sour tastes are apples, grapes, citrus, and many fruit-flavored candies, including Skittles and Starburst. Avoid these foods. Also, make sure the fruit is ripe.)
  - Salty: Potato or tortilla chips, salted popcorn, french fries
  - Bitter: Extra dark chocolate (>70% cacao), cocoa powder, coffee grounds (decaf is OK)
  - Savory: Meat, aged cheese, cooked tomatoes (make sure that there is no sugar or salt added), cooked asparagus
  - Sour: Lemon, lime, unripe fruit, sour candy

Sort
- ☐ Directions Card
- ☐ Sort Cards
- ☐ Scissors
- ☐ Glue
- ☐ Response Sheet
- ☐ Task Cards
- ☐ Science Journal

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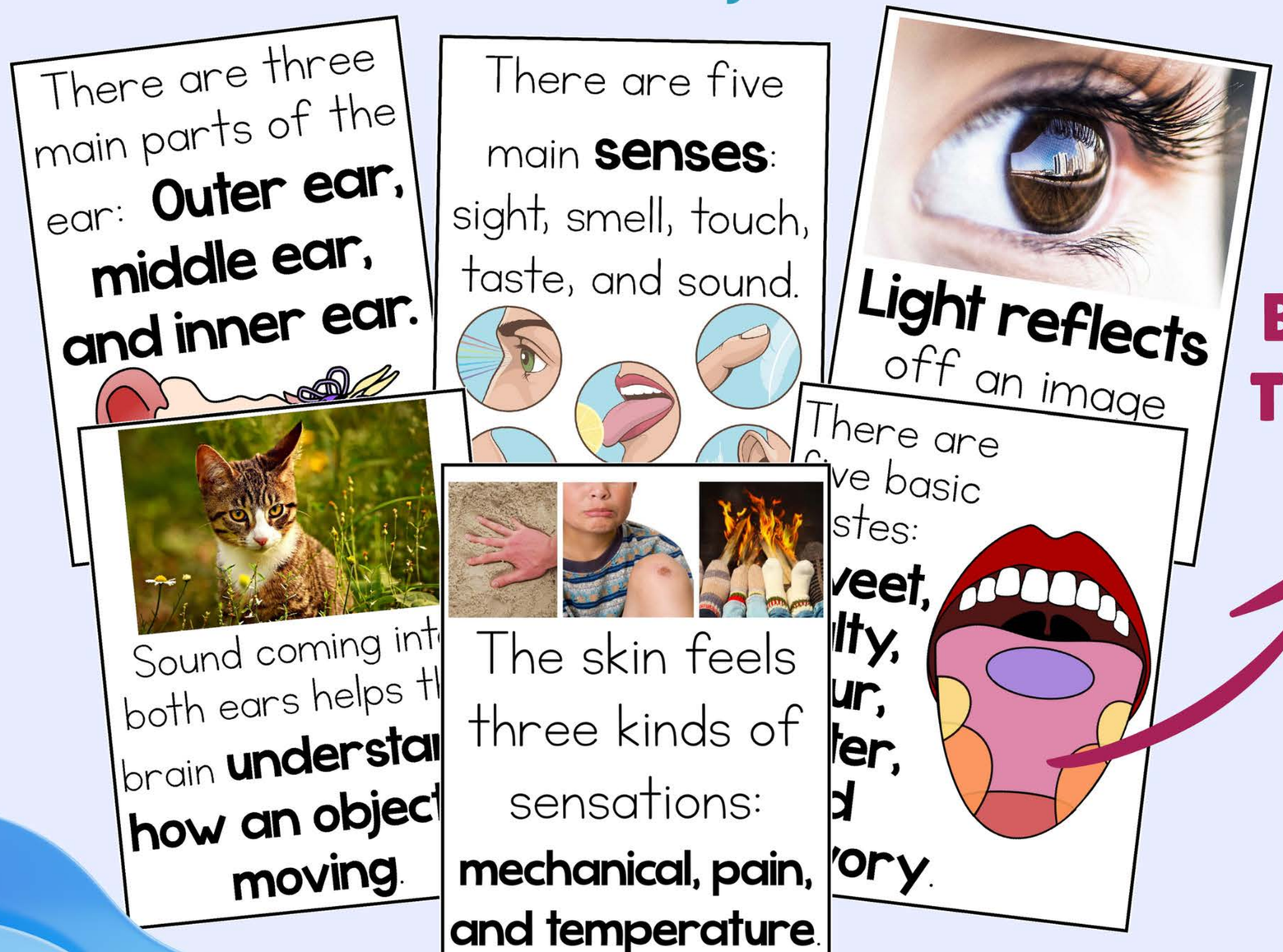
Information Processing Unit

Science Station Overview

Materials Checklist

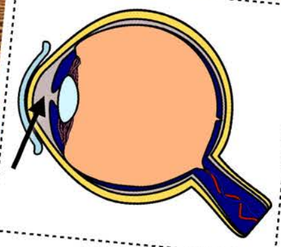
Science Stations

BIG IDEA POSTERS



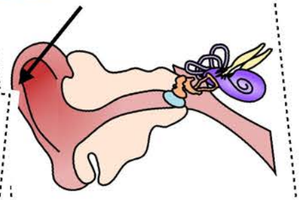
BIG IDEA POSTERS THAT EXPLAIN THE KEY CONCEPTS.

VOCABULARY CARDS IN TWO FORMATS



pupil

the opening to the center of the eye



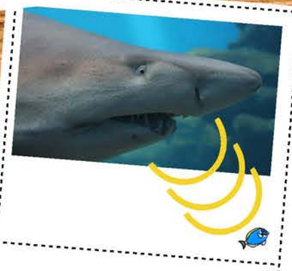
pinna

outer part of the ear



electroreception

when animals can sense electricity



electroreception

when animals can sense electricity

WITH PICTURES

ear drum

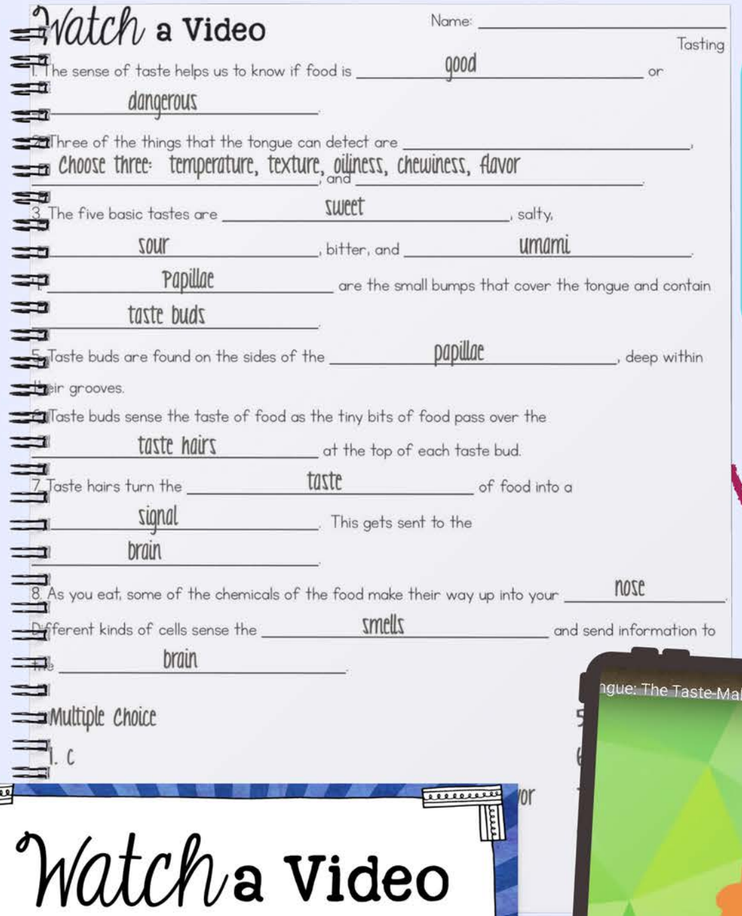
vibrates when sound from the outer ear reaches it, and moves sound to the inner ear

dermis

the middle layer of skin, containing blood vessels, oil and sweat glands, and nerve cells. Its function is to protect the epidermis and keep it healthy.

WITHOUT PICTURES

ONE VIDEO FROM THE WATCH STATION


Watch a Video

Name: _____

Tasting

1. The sense of taste helps us to know if food is good or dangerous.
2. Three of the things that the tongue can detect are _____, _____, and _____. Choose three: temperature, texture, oiliness, chewiness, flavor
3. The five basic tastes are sweet, salty, sour, bitter, and umami.
4. Papillae are the small bumps that cover the tongue and contain taste buds.
5. Taste buds are found on the sides of the papillae, deep within their grooves.
6. Taste buds sense the taste of food as the tiny bits of food pass over the taste hairs at the top of each taste bud.
7. Taste hairs turn the taste of food into a signal. This gets sent to the brain.
8. As you eat, some of the chemicals of the food make their way up into your nose. Different kinds of cells sense the smells and send information to the brain.

Multiple Choice

1. c



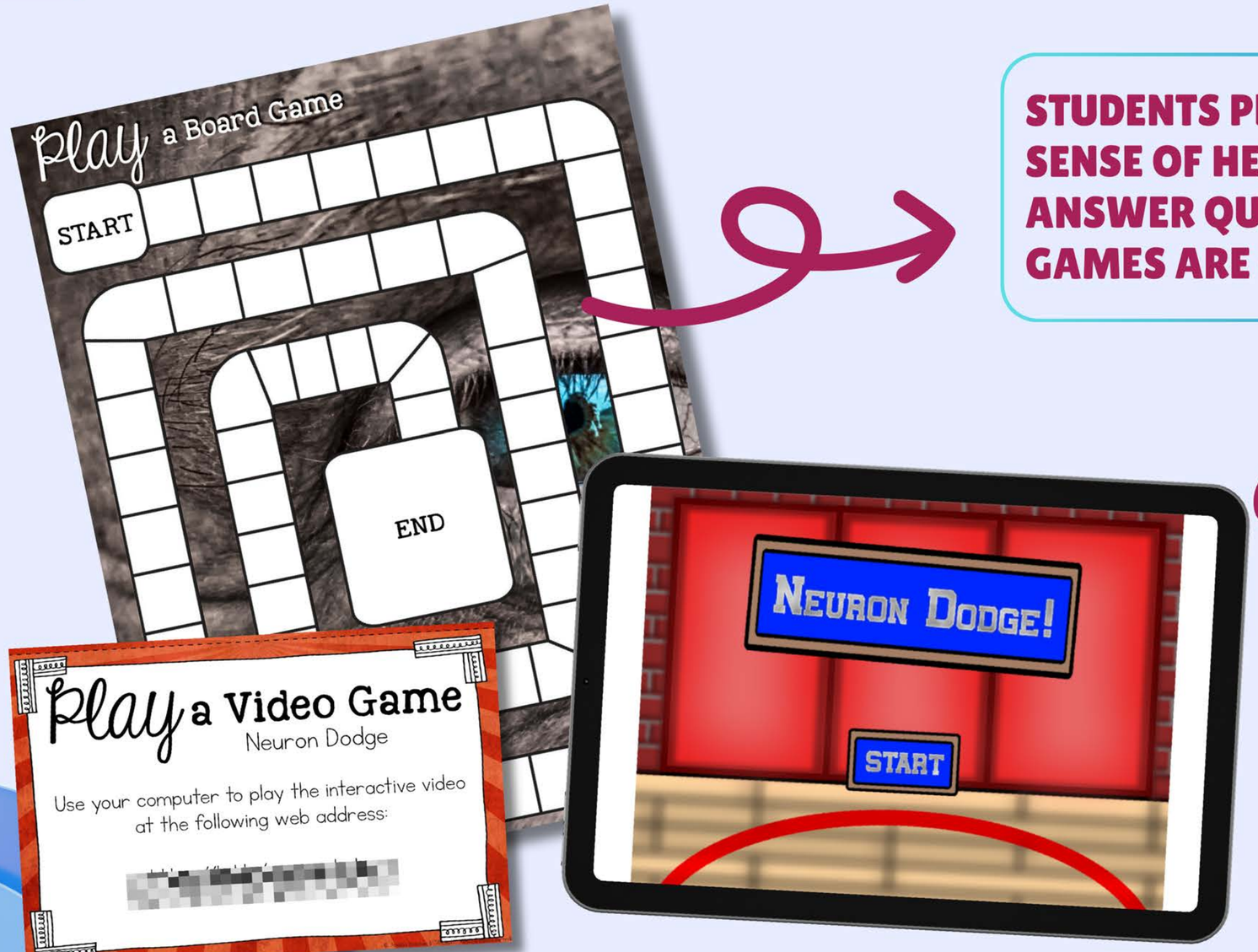
STUDENTS WATCH ONE OF TWO VIDEOS AND THEN ANSWER QUESTIONS ABOUT THE VIDEOS.
VIDEOS INCLUDE: SENSE OF SIGHT AND SENSE OF TASTE.



> This was an amazing resource for the students to dive deeper into senses and responses.
>
> - Alina M.

WATCH STATION

ONE GAME FROM THE PLAY STATION

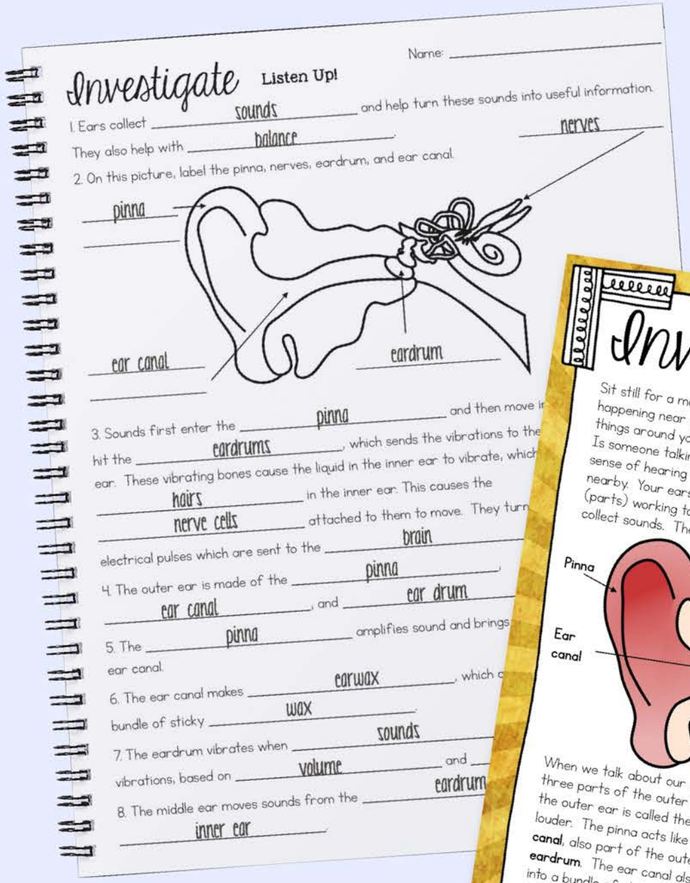


STUDENTS PLAY A GAME AND LEARN ABOUT THE SENSE OF HEARING AND THE BRAIN. STUDENTS ANSWER QUESTIONS RELATED TO THE GAMES. GAMES ARE OFFERED IN PRINT & DIGITAL

> Wow! What a great resource to meet all students. My students enjoyed all of the activities and I enjoyed the minimal prep - win, win. I highly recommend this resource.
>
> -Karlie D.

PLAY STATION

A FEW PAGES FROM THE INVESTIGATE STATION


Investigate Listen Up!

Name: _____

1. Ears collect sounds and help turn these sounds into useful information. They also help with balance.

2. On this picture, label the pinna, nerves, eardrum, and ear canal.

3. Sounds first enter the pinna and then move in hit the eardrums, which sends the vibrations to the ear. These vibrating bones cause the liquid in the inner ear to vibrate, which hairs in the inner ear. This causes the nerve cells attached to them to move. They turn electrical pulses which are sent to the brain.

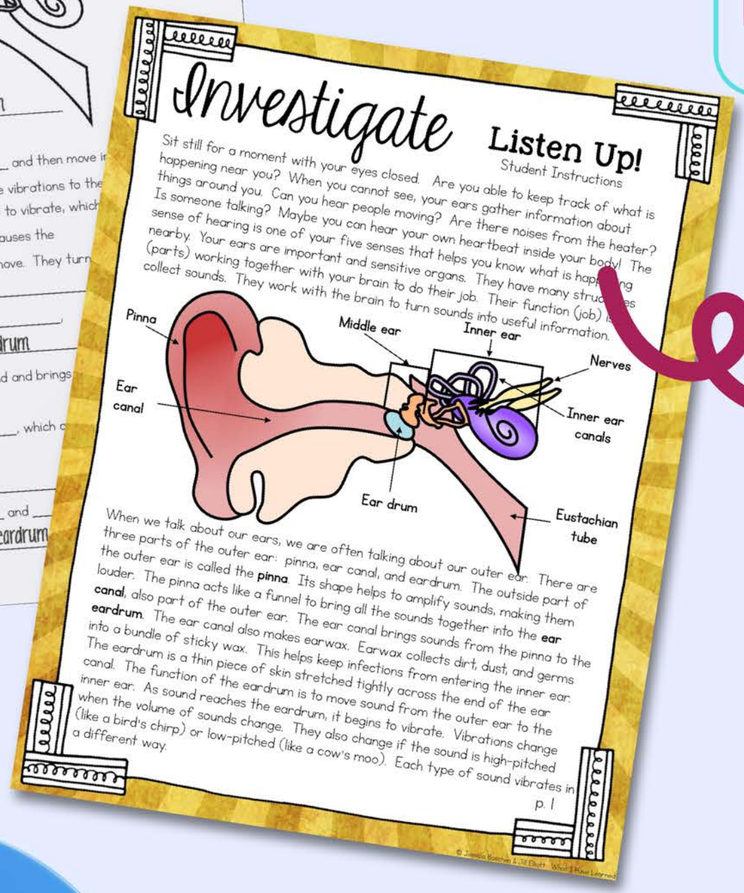
4. The outer ear is made of the pinna, ear canal, and ear drum.

5. The pinna amplifies sound and brings ear canal.

6. The ear canal makes earwax, which c bundle of sticky wax.

7. The eardrum vibrates when sounds vibrations, based on volume and

8. The middle ear moves sounds from the eardrum inner ear.


Investigate Listen Up!

Student Instructions

Sit still for a moment with your eyes closed. Are you able to keep track of what is happening near you? When you cannot see, your ears gather information about things around you. Can you hear people moving? Are there noises from the heater? Is someone talking? Maybe you can hear your own heartbeat inside your body! The sense of hearing is one of your five senses that helps you know what is happening nearby. Your ears are important and sensitive organs. They have many structures (parts) working together with your brain to do their job. Their function (job) is collect sounds. They work with the brain to turn sounds into useful information.

When we talk about our ears, we are often talking about our outer ear. There are three parts of the outer ear: pinna, ear canal, and eardrum. The outside part of the outer ear is called the **pinna**. Its shape helps to amplify sounds, making them louder. The pinna acts like a funnel to bring all the sounds together into the **ear canal**, also part of the outer ear. The ear canal brings sounds from the pinna to the **eardrum**. The ear canal also makes earwax. Earwax collects dirt, dust, and germs into a bundle of sticky wax. This helps keep infections from entering the inner ear. The eardrum is a thin piece of skin stretched tightly across the end of the ear canal. The function of the eardrum is to move sound from the outer ear to the inner ear. As sound reaches the eardrum, it begins to vibrate. Vibrations change when the volume of sounds change. They also change if the sound is high-pitched (like a bird's chirp) or low-pitched (like a cow's moo). Each type of sound vibrates in a different way.

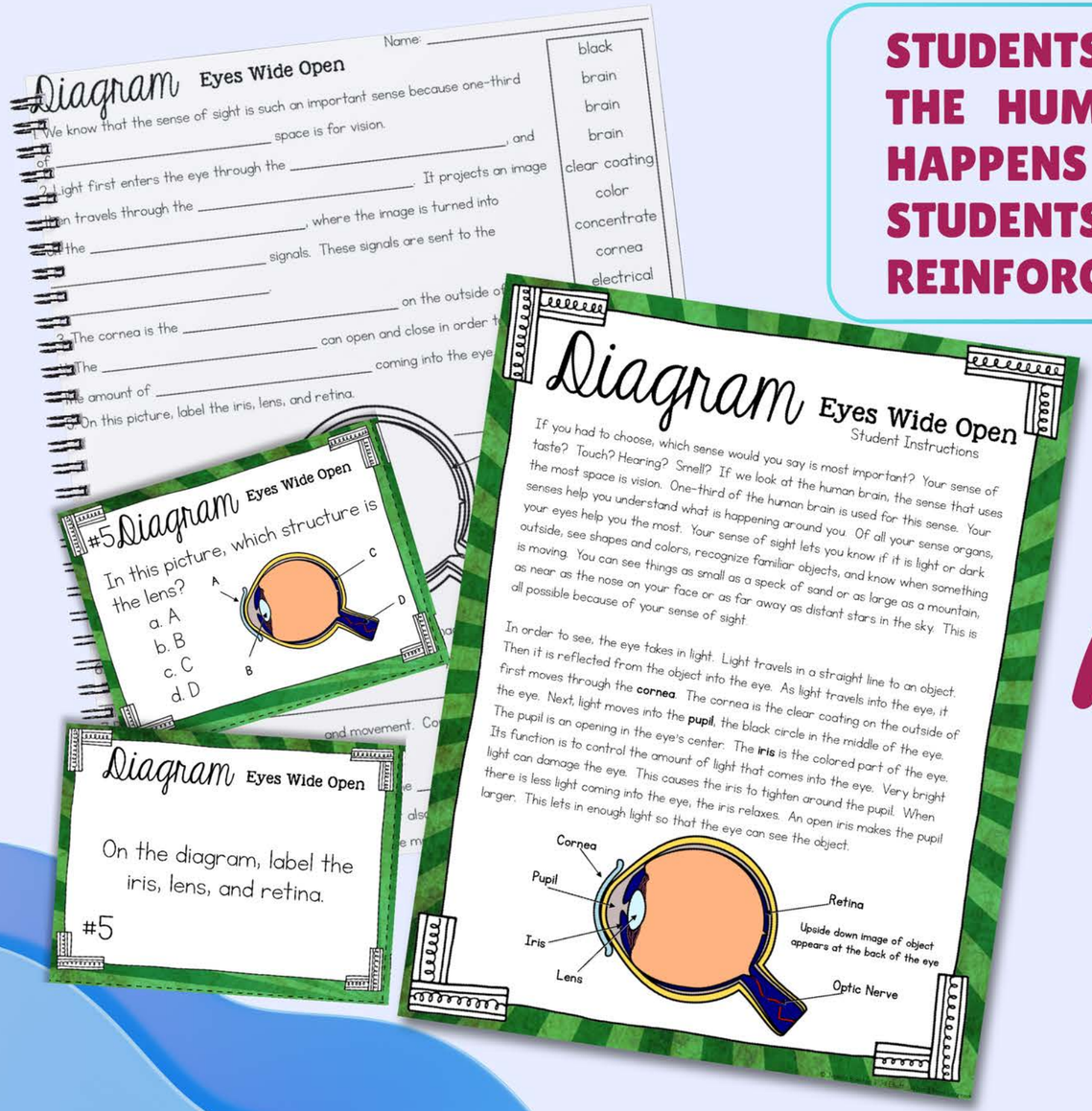
© Jessica Boettcher & Jill Dietz - Whole Heart Literacy

STUDENTS READ ABOUT THE SENSE OF HEARING AND CONDUCT AN INVESTIGATION USING TUNING FORKS. STUDENTS THEN ANSWER QUESTIONS TO REINFORCE THE CONCEPTS LEARNED.

> "This was a great activity to go over the parts of the ear, with students."
>
> - Anissa U.

INVESTIGATE STATION

A FEW PAGES FROM THE DIAGRAM STATION



STUDENTS READ ABOUT THE STRUCTURES AND FUNCTIONS OF THE HUMAN EYE. THEY CREATED A DIAGRAM OF WHAT HAPPENS IN THE EYE AT DIFFERENT LEVELS OF LIGHT. STUDENTS THEN ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

> "Great resource to use after learning about the human eye."
>
> - Shannon H.

DIAGRAM STATION

A FEW PAGES FROM THE READ STATION



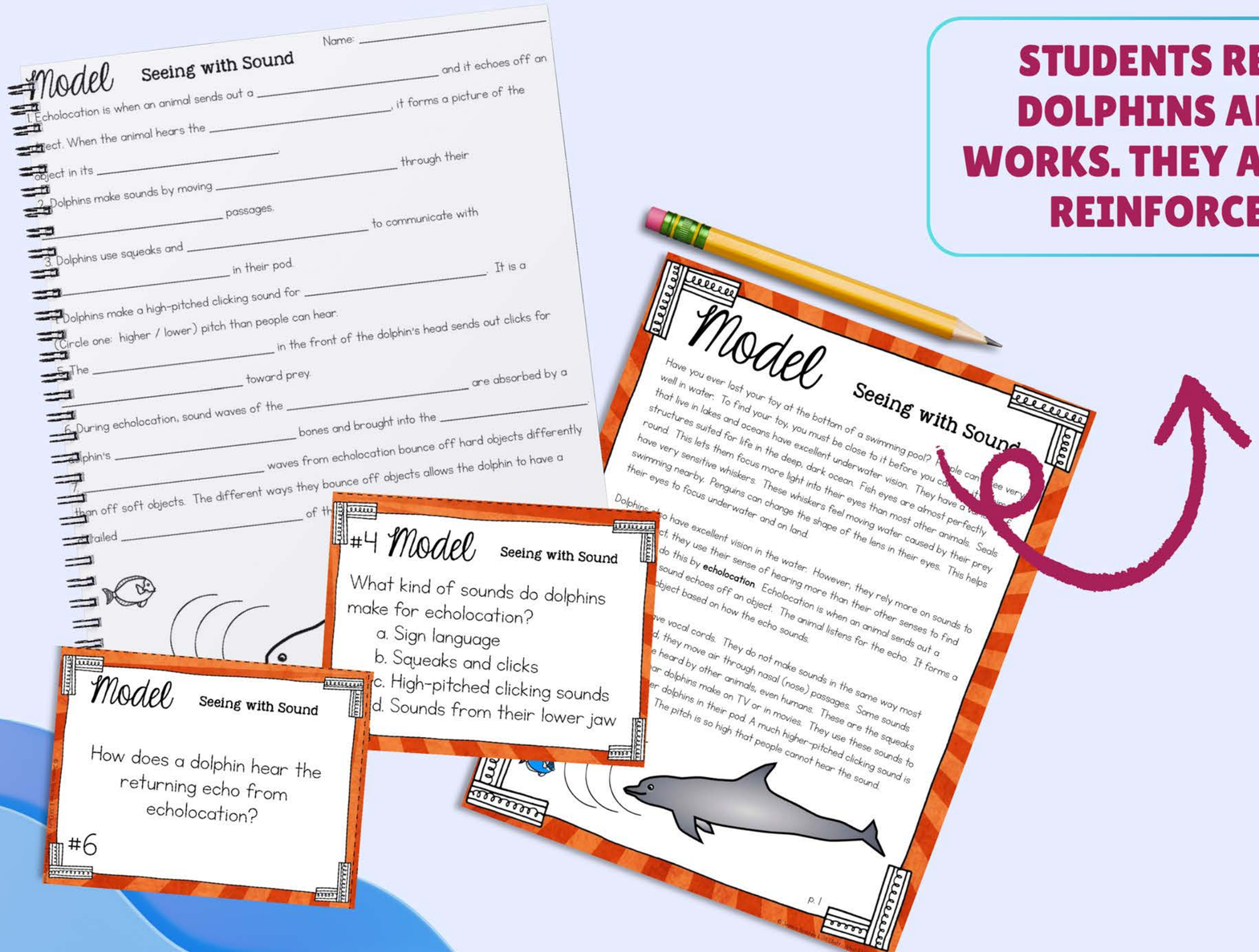
STUDENTS READ ABOUT EXTRAORDINARY SENSORY SYSTEMS IN ANIMALS. THEY ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

"These are great passages to learn about animal senses!"

- Melanie B.

READ STATION

A FEW PAGES FROM THE MODEL STATION

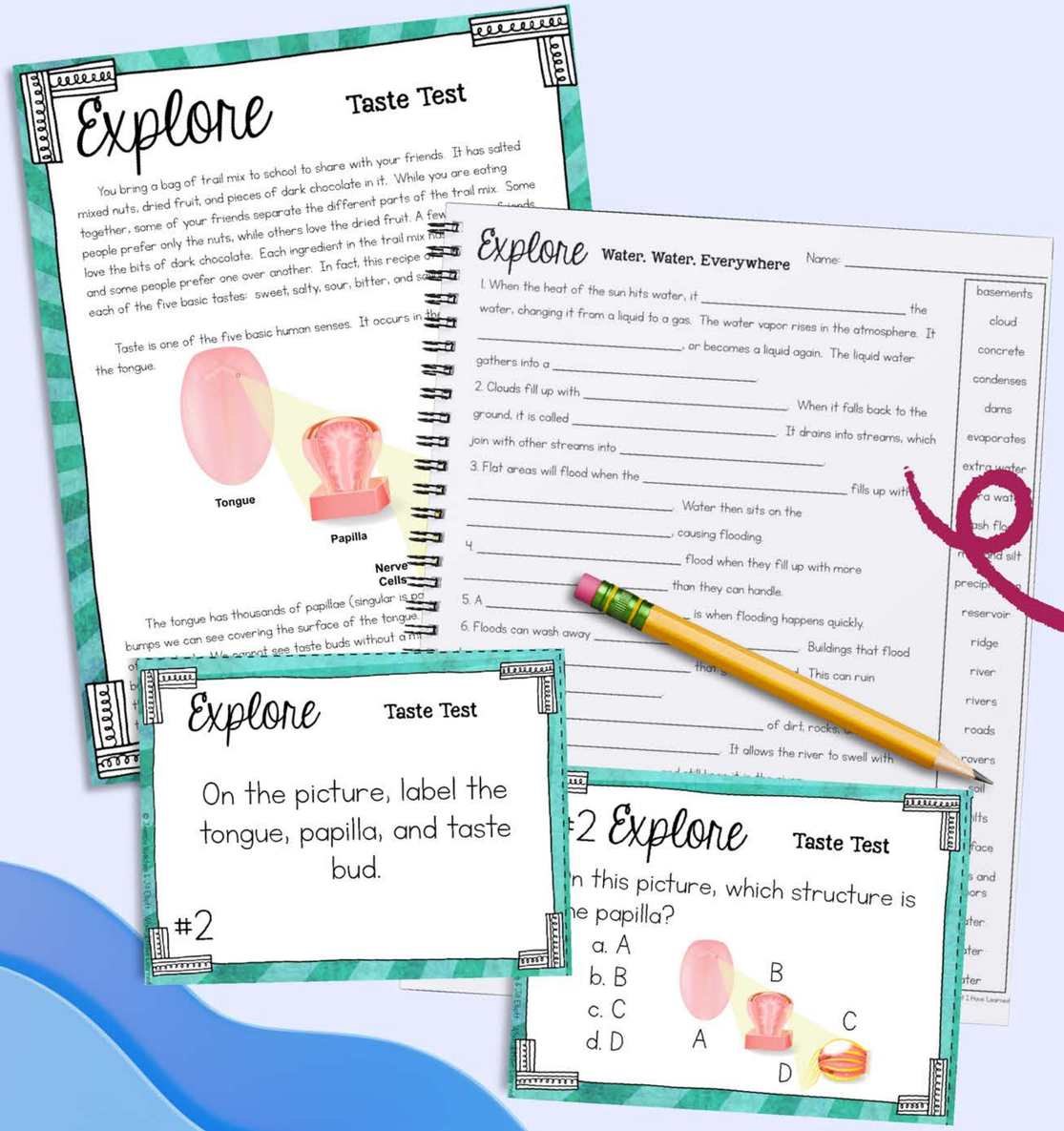


STUDENTS READ ABOUT ECHOLOCATION IN DOLPHINS AND DRAW A MODEL OF HOW IT WORKS. THEY ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

> My students love learning about echolocation! Great resource!
>
> - Jessi S.

MODEL STATION

A FEW PAGES FROM THE EXPLORE STATION



STUDENTS READ ABOUT THE SENSE OF TASTE AND CONDUCT A TASTE TEST. STUDENTS ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

"I have purchased several of Jessica's Science Stations labs and bundles. I really love how everything is organized. All of the teacher instructional materials and supplies are clearly outlined for each of the labs and the lab stations are great for student-lead discovery learning."
- Heather H.

EXPLORE STATION

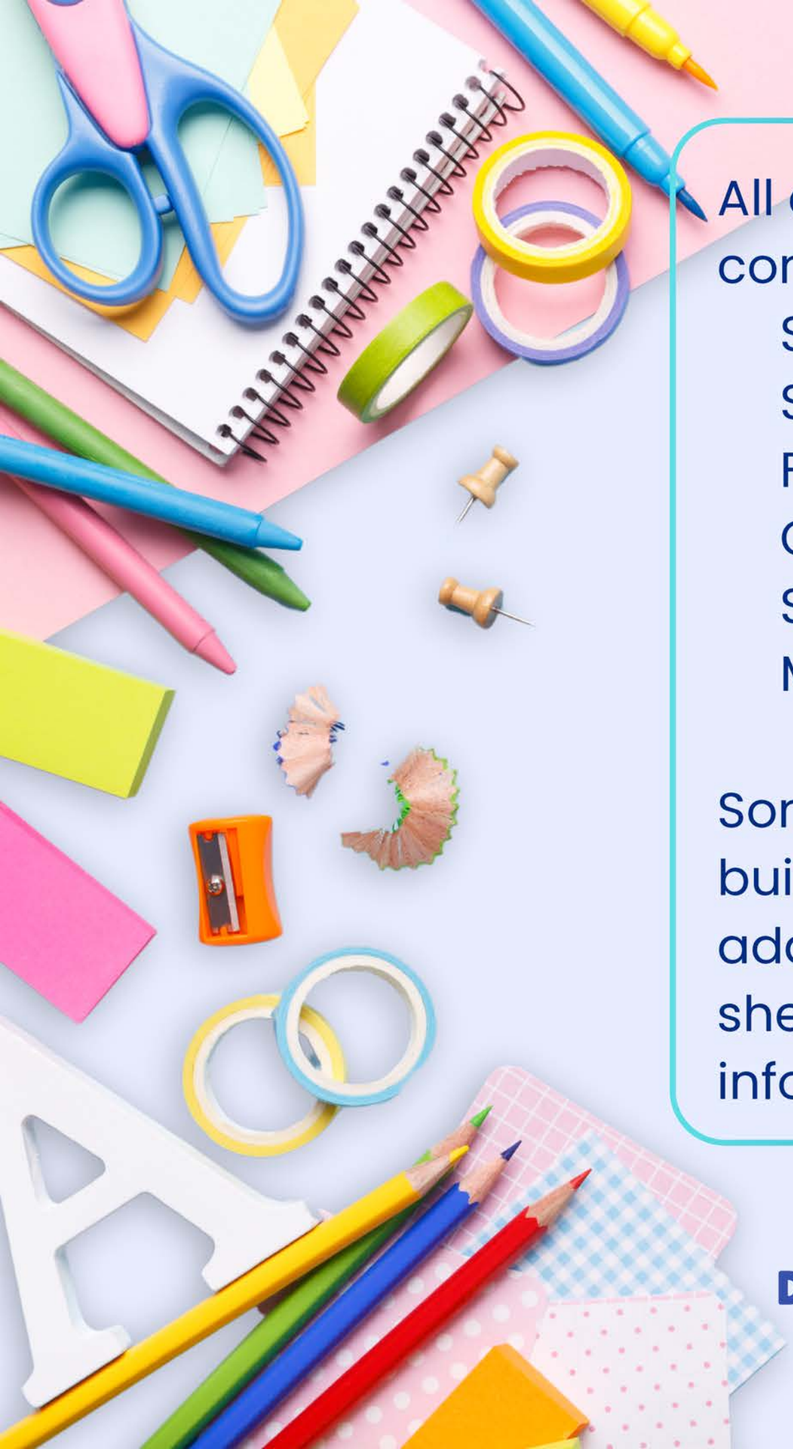
A FEW PAGES FROM THE SORT STATION



STUDENTS READ ABOUT THE SENSE OF TOUCH AND THEN SORT PICTURES OF DIFFERENT OBJECTS INTO CATEGORIES ACCORDING TO THE TYPE OF TOUCH: MECHANICAL, PAIN AND TEMPERATURE. STUDENTS THEN ANSWER QUESTIONS IN ORDER TO REINFORCE WHAT THEY HAVE LEARNED.

> "Thank you! I love this resource! Engaging and meets all needs."
>
> - Colleen C.

SORT STATION



All activities have the same basic components:

- Student Directions
- Short Answer Worksheet
- Fill-in-the-Blank Worksheet
- Cut & Paste Worksheet
- Short Answer Task Cards
- Multiple Choice Task Cards

Some activities have more reading to build background knowledge and additional worksheets or activity sheets to help organize the new information.

NOT ALL VERSIONS OF THE PAGES ARE DISPLAYED ON THE FOLLOWING PAGES, BUT ALL ARE IN EACH RESOURCE

DIGITAL VERSIONS

- ✔ Google Forms and/or
- ✔ Google Slides for every station
- ✔ Videos
- ✔ Video Games
- ✔ Digital Crossword Puzzles & Word Searches

Answer keys provided

CAN BE INDEPENDENT

- Watch
- Play
- Read
- Sort

MAY REQUIRE TEACHER SUPPORT

- Investigate
- Diagram
- Model
- Explore

TEACHER PREP

- Choose a topic and activities
- Choose which type of questions students will answer
- Set up the station using the included materials list
- Have students read the passage to build background knowledge (optional)
- Have students complete the stations using the included student directions

TEACHERS LOVE IT!

I absolutely LOVED everything about this Science Packet! Great ways to differentiate their learning and really fun experiments! Thank you!

Julia D.



My student enjoyed using this resource. The step by step directions were clear and students engaged easily. The element of choice was an added bonus.

Judy D.



My passion is making learning accessible to all students.
I love scaffolding learning, breaking down the concepts and building them up so that students can see the connections.
I love figuring out the small components that build up to the big ideas and helping students see it all.



teach MATH | teach SCIENCE | teach READING | teach WRITING

What I have LEARNED