

# CCPS Science Unit Plan

<b>Grade</b>	10-12	<b>Subject: Human Anatomy &amp; Physiology</b>	Science	<b>Unit #</b>	3																														
<b>Unit Name</b>	Integration and Coordination: Nervous, Special Senses, and Endocrine Systems		<b>Timeline</b>	3 weeks																															
<b>How to use the Framework</b>	<p style="color: red;">This Framework should be used to implement daily science instruction. The resources and instructional strategies reflected in the Framework will provide a foundation for effective implementation and student mastery of standards.</p> <p style="color: red;">Please see the hyperlinked <a href="#">abbreviation document</a> to ensure understanding all abbreviations used with this framework.</p>																																		
<b>Unit Overview</b>	<p>This unit introduces the learner to the general processes that support the nervous system, special senses, and the endocrine system. Hormones always seem to be in the news. Growth hormone, anabolic steroids and other performance enhancement drugs, although officially banned in most sports, nonetheless are widely used by both professional and amateur athletes. What are the true benefits and risks? Melatonin, DHEA, and other potent hormones and prohormones may also be purchased over the counter. How do birth control pills affect a woman’s health, and do the risks of estrogen and progesterone replacement therapy outweigh the benefits? Finally, the pandemic of obesity and consequent type II diabetes mellitus is recognized as a leading societal and medical problem.</p> <p style="background-color: yellow;">Prior to beginning this unit, check for the following equipment/supplies. Communicate with your department chair if you are unable to locate any necessary materials.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 16.6%;">Lab apron</td> <td style="width: 16.6%;">goggles</td> <td style="width: 16.6%;">Nitrile gloves</td> <td style="width: 16.6%;">Sheep brain specimens (1 specimen per 3 students)</td> <td style="width: 16.6%;">Dissection Tray</td> <td style="width: 16.6%;">pipe cleaner (class supply/ per class)</td> </tr> <tr> <td>Forceps</td> <td>dissecting pins</td> <td>scalpel</td> <td>paper towel</td> <td>scissors</td> <td>3 small items (paper clip, key, pen top)</td> </tr> <tr> <td>(blunt) probe</td> <td>rulers (15 minimal)</td> <td>toothpick (60 per class)</td> <td>q-tips (35 per class)</td> <td>modeling clay or dough (class supply/ per class)</td> <td>Marking pens (Washable)</td> </tr> <tr> <td>Millimeter ruler</td> <td>Sharp pens</td> <td>Cold water</td> <td>Warm water</td> <td>distilled water</td> <td>yellow food coloring</td> </tr> <tr> <td>urinalysis PH sticks</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					Lab apron	goggles	Nitrile gloves	Sheep brain specimens (1 specimen per 3 students)	Dissection Tray	pipe cleaner (class supply/ per class)	Forceps	dissecting pins	scalpel	paper towel	scissors	3 small items (paper clip, key, pen top)	(blunt) probe	rulers (15 minimal)	toothpick (60 per class)	q-tips (35 per class)	modeling clay or dough (class supply/ per class)	Marking pens (Washable)	Millimeter ruler	Sharp pens	Cold water	Warm water	distilled water	yellow food coloring	urinalysis PH sticks					
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<b>Lesson Plan guidance document and template</b>	<p><a href="#">Department of Science Guidance Document</a>  <a href="#">Lesson Plan Template Week View</a>  <a href="#">GADOE Science Updates</a></p>																																		

<b>3Dimensional Instruction</b>	<u>GSE</u>	<u>Science and Engineering Practices</u>	<u>Crosscutting Concepts</u>
	<p><b>SAP3. Obtain, evaluate, and communicate information to explain the coordination of information processing in the endocrine and nervous systems.</b></p> <p><b>a.</b> Ask questions to investigate how the structures of the nervous system support the function of information processing (detection, interpretation, and response).</p> <p><b>b.</b> Analyze and interpret data to explain how the hormones of the endocrine system regulate physical and chemical processes to maintain a stable internal environment. (Clarification statement: This should include positive and negative feedback mechanisms, e.g. heart rate, blood sugar, childbirth, temperature, growth, etc.)</p> <p><b>c.</b> Ask questions about how the interdependence of the endocrine and nervous systems makes information processing (detection, interpretation and response) possible. (Clarification statement: Questions should address the homeostatic mechanisms, as well as the effects of and responses to aging, diseases, and disorders).</p>	<p><b>HS-LS1-:</b> Construct an explanation based on evidence for how the structure of DNA determines the structure of protein, which carry out the essential functions of life through systems of specialized cells.</p> <p><b>HS-LS1-2:</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.</p> <p><b>HS-LS1-3:</b> Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.</p>	<p><b>Systems and System Models</b> Models (e.g., physical, mathematical, computer models) can be used to simulate systems and interactions—including energy, matter, and information flows—within and between systems at different scales. (HS-LS1-2)</p> <p><b>Structure and Function</b> Investigating or designing new systems or structures requires a detailed examination of the properties of different materials, the structures of different components, and connections of components to reveal its function and/or solve a problem. (HS-LS1-1)</p> <p><b>Stability and Change</b> Feedback (negative or positive) can stabilize or destabilize a system. (HS-LS1-3)</p>

<b>NGSS Alignment</b>	<a href="#"><u>NGSS Alignment to Disciplinary Core Ideas</u></a>
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**Weekly Lesson Tasks**

<b>Week 1</b>	
<b>GSE: SAP 3a.</b>	<b>Focused Concept:</b> <ul style="list-style-type: none"> <li>The major nervous structures (cellular, tissue, and organ composition: brain, spinal cord, and nerves) and their</li> </ul>

- corresponding functional roles (sensation/detection, interpretation, and response)
- Pathologies that disrupt typical structural makeup and/or functional abilities of the Nervous system
- Nervous system's role in regulating homeostasis

**Phenomenon:**  
How does information flow through the nervous system?

- DQ:**
1. Name the two major groups of the nervous system organs.
  2. What are the two subdivisions of the nervous system?
  3. How do sensory receptors collect information?
  4. Where are the lobes of the brain location and functions?
  5. What happens if there is a impaired nerve?

**SEP:** Asking Questions

**CCC:** Systems and System Models, Structure and Function, and Stability and Change

	Day 1	Day 2	Day 3	Day 4	Day 5
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<b>Learning Targets</b> The students will be able to:	Students can identify the structure of a neuron.	Students can distinguish the structures and functions of the central and peripheral nervous systems. (CNS vs PNS)	Students can identify the structure of the brain.	Students can analyze the signs and symptoms of a nervous system disorder.	Students can demonstrate their knowledge of the nervous system's structures and functions.
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<p><b>Opening (10-15 minutes)</b> <b>TTW: "the teacher will"</b> <b>TSW: "the student will"</b></p> <p><i>Show students the Phenomenon Unit 3 Ppt Daily</i></p> <p><b>**Lab Prep is needed this week.**</b></p>	<p><b>Anatomy of a Neuron</b></p> <ul style="list-style-type: none"> <li>• Show students the <b>phenomenon</b></li> <li>• TTW Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</li> <li>• TTW Ask students: What do you see? What do you think about what you are seeing? What does it make you wonder?</li> <li>• TTW provide students opportunities to share observations and develop questions.</li> <li>• TTW record students' questions to direct instruction.</li> </ul> <p><b>Vocabulary: TSW add</b></p>	<p><b>CNS and PNS: Nerve Impulse and Reaction</b></p> <ul style="list-style-type: none"> <li>• Show students the <b>phenomenon</b></li> <li>• TTW Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</li> <li>• TTW Ask students: What do you see? What do you think about what you are seeing? What does it make you wonder?</li> <li>• TTW provide students opportunities to share observations and develop questions.</li> <li>• TTW record students' questions to</li> </ul>	<p><b>Brain Structures</b></p> <ul style="list-style-type: none"> <li>• Show students the <b>phenomenon</b></li> <li>• TTW Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</li> <li>• TTW Ask students: What do you see? What do you think about what you are seeing? What does it make you wonder?</li> <li>• TTW provide students opportunities to share observations and develop questions.</li> <li>• TTW record students' questions to direct instruction.</li> <li>• TTW ask questions to connect concepts from</li> </ul>	<p><b>Nervous System Disorders</b></p> <ul style="list-style-type: none"> <li>• Show students the <b>phenomenon</b></li> <li>• TTW Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</li> <li>• TTW Ask students: What do you see? What do you think about what you are seeing? What does it make you wonder?</li> <li>• TTW provide students opportunities to share observations and develop questions.</li> <li>• TTW record students' questions to direct instruction.</li> <li>• TTW ask questions to</li> </ul>	<p>TTW will complete a structured activity to prepare students for their formative assessment.</p> <ul style="list-style-type: none"> <li>• Show students the <b>phenomenon</b></li> <li>• TTW Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</li> <li>• TTW Ask students: What do you see? What do you think about what you are seeing? What does it make you wonder?</li> <li>• TTW provide students opportunities to share observations and develop questions.</li> <li>• TTW record students' questions to direct instruction.</li> <li>• TTW ask questions to connect concepts from the previous day's instruction.</li> </ul>
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	<p><b><u>terms to the Digital KIM Chart</u></b></p> <ul style="list-style-type: none"> <li>• neurons</li> <li>• neuroglia</li> <li>• cell body</li> <li>• axon</li> <li>• dendrites</li> <li>• nodes of Ranvier</li> <li>• Schwann Cell</li> <li>• impulse</li> <li>• neurotransmitter</li> <li>• Multipolar Neuron</li> <li>• Unipolar neuron</li> <li>• bipolar neuron</li> </ul> <p><b><u>Hole's Essentials Reference Pages:</u></b> #292-295</p>	<p>direct instruction.</p> <ul style="list-style-type: none"> <li>• TTW ask questions to connect concepts from the previous day's instruction.</li> </ul> <p><b><u>Vocabulary: TSW add terms to the Digital KIM Chart</u></b></p> <ul style="list-style-type: none"> <li>• central nervous system (CNS)</li> <li>• peripheral nervous system (PNS)</li> <li>• afferent</li> <li>• efferent</li> <li>• somatic nervous system</li> <li>• autonomic nervous system</li> <li>• membrane potential</li> <li>• threshold stimuli</li> <li>• threshold potential</li> <li>• resting membrane potential</li> <li>• action potential</li> </ul> <p><b><u>Hole's Essentials Reference Pages:</u></b> #291-298</p>	<p>the previous day's instruction.</p> <p><b><u>Vocabulary: TSW add terms to the Digital KIM Chart</u></b></p> <ul style="list-style-type: none"> <li>• cerebrum</li> <li>• frontal lobe</li> <li>• parietal lobe</li> <li>• occipital lobe</li> <li>• temporal lobe</li> <li>• cerebellum</li> <li>• cerebral cortex</li> <li>• thalamus</li> <li>• hypothalamus</li> <li>• pons</li> <li>• medulla oblongata</li> <li>• midbrain</li> <li>• diencephalon</li> <li>• limbic system</li> <li>• pineal gland</li> <li>• pituitary gland</li> </ul> <p><b><u>Hole's Essentials Reference Pages:</u></b> #318-329</p>	<p>connect concepts from the previous day's instruction.</p> <p><b><u>Vocabulary: TSW add terms to the Digital KIM Chart</u></b></p> <ul style="list-style-type: none"> <li>• paralysis</li> <li>• ischemic stroke</li> <li>• bell palsy</li> </ul>	
<p><b>Guided Practice/ Transition to Work Session (20 minutes)</b></p> <p><b>TTW ask clarifying questions to increase students' engagement and check for understanding throughout the lesson.</b></p>	<p>TSW will take free notes in their notebook while TTW provide direct instruction using the <a href="#">Nervous System ppt</a> to cover nervous tissue, emphasizing how all nervous structures are composed of neurons and neuroglia. TTW provide information about the structures of neurons that allow them to send and receive messages: dendrites, soma, axon, synaptic terminal, etc.</p> <p><i>TTW will prepare the lab for students to</i></p>	<p>TTW will begin class with a class activity: <a href="#">"Telephone"</a></p> <p>TSW will take free notes in their notebook while TTW discuss the main difference between the central and peripheral nervous systems. And how information is relayed from the CNS to the PNS. Follow the Hole's Essential Teacher Manual (page #150)</p>	<p>TSW will take free notes in their notebook while TTW provide direct instruction using the <a href="#">Nervous System ppt</a> to cover brain structures.</p> <p><i>TTW will prepare the lab for students to identify brain structures.</i></p> <p><b><u>Supplies Needed:</u></b></p> <ul style="list-style-type: none"> <li>• Dissection Tray</li> <li>• Forceps</li> <li>• dissecting pins</li> <li>• scalpel</li> <li>• paper towel</li> <li>• scissors</li> <li>• (blunt) probe</li> <li>• apron and goggles</li> <li>• nitrile gloves</li> <li>• Sheep Brain specimen</li> </ul>	<p>TSW will take free notes in their notebook while TTW provide direct instruction over the disorder of the nervous system.</p>	

	<p><i>observe nervous tissue types.</i></p> <p><b>Supplies needed:</b></p> <ul style="list-style-type: none"> <li>• pipe cleaner</li> <li>• construction paper</li> <li>• clay</li> <li>• beads</li> <li>• candy</li> </ul>				
<p><b>Independent Practice (45-50 minutes)</b></p> <p>TTW circulate the room to monitor the students performance and clarify instruction as needed with daily independent practice.</p> <p>Refer to supplemental resources for additional assignments during idle time</p>	<p>TTW give each student a specific type of neuron to create a model of a:</p> <ul style="list-style-type: none"> <li>• Unipolar neuron</li> <li>• Bipolar neuron</li> <li>• Multipolar neuron</li> <li>• Pseudounipolar neuron</li> </ul> <p>TSW build a model of the assigned neuron type by completing the <a href="#">Build a Neuron</a> activity.</p> <p>Students will also label and provide descriptive components for each structure.</p>	<p>TSW connect the concepts of the CNS and PNS by completing the <a href="#">Central and Peripheral Nervous System Interactive Assignment</a></p> <p><b>Concept Connection Extension Activity</b> <i>(optional if time permits)</i></p> <p>Hole's Essentials of Human Anatomy &amp; Physiology pg# 333</p>	<p>TSW explore the structures of the brain by completing a live <a href="#">dissection of a sheep's brain</a>.</p>	<p>TSW analyze and evaluate a specific nervous system disorder by completing the <a href="#">Bell Palsy Case Study</a> and <a href="#">Answer Key</a></p>	<ol style="list-style-type: none"> <li>1. <b>Formative Assessment Quiz 5: Nervous System</b></li> <li>2. After completing the formative assessment, TSW begin the <a href="#">Nervous System and Special Senses Digital Stations</a> to summarize the nervous system's functions.</li> </ol>
<p><b>Assessment Summary (5-10 minutes)</b></p> <p>Show students the <a href="#">Exit ticket Unit 3 Ppt Daily</a></p> <p>Formative Assessment should have between 15 to 20 questions</p>	<p><b>Exit ticket:</b> Show students <a href="#">Exit ticket Unit 3 ppt</a></p> <p><b>Homework:</b> Students should read and take free notes on <a href="#">9.2, 9.9, 9.11, and 9.13</a> in textbook: Hole's Essentials of Human Anatomy &amp; Physiology (#291, 308-309, 310-312, and 315-318)</p>	<p><b>Exit ticket:</b> Show students <a href="#">Exit ticket Unit 3 ppt</a></p> <p><b>Homework:</b> Students should read and take free notes on <a href="#">9.14</a> in textbook: Hole's Essentials of Human Anatomy &amp; Physiology (# 318-329)</p>	<p><b>Exit ticket:</b> Show students <a href="#">Exit ticket Unit 3 ppt</a></p>	<p><b>Exit ticket:</b> Show students <a href="#">Exit ticket Unit 3 ppt</a></p>	<p><b>Formative Assessment Quiz 5: Nervous System</b> (Google Form Assessment can be created using questions from Hole's Essentials of Human Anatomy &amp; Physiology (#346-347) Answer Key can be found in the teacher's manual (#176-178)</p>
<p><b>Small Group Tasks (TBA)</b></p>	<p>Students will be given accommodations based on IEP requirements.</p>	<p>Students will be given accommodations based on IEP requirements.</p>	<p>Students will be given accommodations based on IEP requirements.</p>	<p>Students will be given accommodations based on IEP requirements.</p>	<p>Questions may be modified for students in small groups and/ or time in half should be provided</p>

Week 2

GSE: SAP 3c.

Focused Concept:

- General sensory receptors and their functions
- Special sensory receptors, their organs, and functions
- Pathologies that disrupt typical structural makeup and/or functional abilities of the special senses

Phenomenon:

1. Our awareness of different sensory events arises from receptors that respond to specific stimuli and the ability of different parts of the brain to interpret the resulting impulses.
2. Special senses are those whose sensory receptors are in the large, complex sensory organs in the head.

DQ:

1. Identify the five kinds of receptors and explain their functions.
2. Explain how a sensation arises.
3. Describe the receptors associated with touch, pressure, pain, stretch, and temperature.
4. Identify the locations of the receptors associated with the special senses.
5. Compare receptor cells involved with the senses of smell and taste.
6. Explain the mechanisms of smell and taste.
7. Explain the structures and functions of the ear.
8. Distinguish between static and dynamic equilibrium.
9. Explain the functions of each part of the eye
10. Describe the visual nerve pathway.

SEP: Asking Questions

CCC: Systems and System Models, Structure and Function, and Stability and Change

	Day 6	Day 7	Day 8	Day 9	Day 10
<p><b>Learning Targets</b></p> <p>The students will be able to:</p>	<p>Students can associate types of sensory receptors with general senses throughout the body.</p>	<p>Students can identify the structure and functions of the special senses: <i>smell and taste</i>.</p>	<p>Students can identify the structure and functions of the special senses: <i>sound and balance</i>.</p>	<p>Students can identify the structure and functions of the special senses: <i>sight</i>.</p>	<p>Students can demonstrate their knowledge of general and special senses structures and functions.</p>
<p><b>Opening (10-15 minutes)</b></p>	<p><u>Receptors, Sensations, Perception and General Senses: Touch &amp; Pressure</u></p> <ul style="list-style-type: none"> <li>• Show students the <a href="#">phenomenon</a></li> <li>• TTW Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</li> <li>• TTW Ask students: What do you see? What do you</li> </ul>	<p><u>Special Senses: Smell and Taste</u></p> <ul style="list-style-type: none"> <li>• Show students the <a href="#">phenomenon</a></li> <li>• TTW Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</li> <li>• TTW Ask students: What do you see? What do you think about what you are</li> </ul>	<p><u>Special Senses: Hearing and Equilibrium</u></p> <ul style="list-style-type: none"> <li>• Show students the <a href="#">phenomenon</a> (Use <a href="#">Teacher manual pg #193</a>) to help explain the difference between positions of the head and motion of the body that cause a person to be dizzy or lose balance.</li> </ul>	<p><u>Special Senses: Sight</u></p> <ul style="list-style-type: none"> <li>• Show students the <a href="#">phenomenon</a></li> <li>• TTW Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</li> <li>• TTW Ask students: What do you see? What do you think about what you are seeing? What does it</li> </ul>	<p><u>Print class copies prior to class.</u></p> <ul style="list-style-type: none"> <li>• <a href="#">Task cards</a></li> <li>• <a href="#">Task Card Review Sheet</a></li> </ul>

	<p>think about what you are seeing? What does it make you wonder?</p> <ul style="list-style-type: none"> <li>• TTW provide students opportunities to share observations and develop questions.</li> <li>• TTW record students' questions to direct instruction.</li> <li>• TTW ask questions to connect concepts from the previous week.</li> </ul> <p><b>Vocabulary: TSW add terms to the Digital KIM Chart</b></p> <ul style="list-style-type: none"> <li>• Mechanoreceptors</li> <li>• Thermoreceptors</li> <li>• Pain receptors</li> <li>• Chemoreceptors</li> <li>• Photoreceptors</li> <li>• Perception</li> <li>• Sensation</li> <li>• Free nerve ending</li> <li>• Meissner's Corpuscles</li> <li>• Pacinian Corpuscles</li> <li>• Proprioception</li> <li>• referred pain</li> </ul> <p><b>Hole's Essentials Reference Pages: #352-359</b></p>	<p>seeing? What does it make you wonder?</p> <ul style="list-style-type: none"> <li>• TTW provide students opportunities to share observations and develop questions.</li> <li>• TTW record students' questions to direct instruction.</li> <li>• TTW ask questions to connect concepts from the previous day's instruction.</li> </ul> <p><b>Vocabulary: TSW add terms to the Digital KIM Chart</b></p> <ul style="list-style-type: none"> <li>• olfactory bulb</li> <li>• olfactory tract</li> <li>• taste cells</li> <li>• taste pores</li> <li>• taste buds</li> <li>• papillae</li> </ul> <p><b>Hole's Essentials Reference Pages: #360-364</b></p>	<ul style="list-style-type: none"> <li>• TTW Use the <a href="#">See-Think-Wonder</a> protocol to guide student thinking.</li> <li>• TTW Ask students: What do you see? What do you think about what you are seeing? What does it make you wonder?</li> <li>• TTW provide students opportunities to share observations and develop questions.</li> <li>• TTW record students' questions to direct instruction.</li> <li>• TTW ask questions to connect concepts from the previous day's instruction.</li> </ul> <p><b>Vocabulary: TSW add terms to the Digital KIM Chart</b></p> <ul style="list-style-type: none"> <li>• auricle</li> <li>• eardrum</li> <li>• external acoustic meatus</li> <li>• auditory ossicle</li> <li>• oval window</li> <li>• auditory tube</li> <li>• labyrinth</li> <li>• semicircular canals</li> <li>• cochlea</li> <li>• equilibrium</li> <li>• vestibule</li> <li>• utricle</li> <li>• saccule</li> <li>• macula</li> <li>• ampulla</li> </ul> <p><b>Hole's Essentials Reference Pages: #364-373</b></p>	<p>make you wonder?</p> <ul style="list-style-type: none"> <li>• TTW provide students opportunities to share observations and develop questions.</li> <li>• TTW record students' questions to direct instruction.</li> <li>• TTW ask questions to connect concepts from the previous day's instruction.</li> </ul> <p><b>Vocabulary: TSW add terms to the Digital KIM Chart</b></p> <ul style="list-style-type: none"> <li>• eyelid</li> <li>• conjunctiva</li> <li>• lacrimal gland</li> <li>• cornea</li> <li>• iris</li> <li>• sclera</li> <li>• pupil</li> <li>• [aqueous humor</li> <li>• lens</li> <li>• retina</li> <li>• vitreous humor</li> <li>• optic nerve</li> <li>• optic disc</li> <li>• ciliary cavity</li> </ul> <p><b>Hole's Essentials Reference Pages: #373-383</b></p>	
<p><b>Guided Practice/Transition (20 minutes)</b>  <b>**Lab Prep is needed this week.**</b></p>	<p>TSW will take free notes in their notebook while <b>TTW</b> guides the class through the types of receptors using the <a href="#">Special Senses ppt</a> to cover general and</p>	<p>TSW will take free notes in their notebook while <b>TTW</b> guides the class through structures of the nose and mouth using the <a href="#">Special Senses ppt</a> to cover smell</p>	<p>TSW will take free notes in their notebook while <b>TTW</b> guides the class through structures of the ear using the <a href="#">Special Senses ppt</a> to cover sound and</p>	<p>TSW will take free notes in their notebook while <b>TTW</b> guides the class through the structures of the eye using the <a href="#">Special Senses ppt</a> to cover sight.</p>	<p>TSW will complete the <a href="#">task cards</a> to prepare for special senses quiz.</p> <ul style="list-style-type: none"> <li>• <a href="#">Task Card Review Sheet</a> (Class copies)</li> </ul>

<p>TTW ask clarifying questions to increase students' engagement and check for understanding throughout the lesson.</p> <p><b>Transition to Work Session</b></p>	<p>special senses.</p> <p><b>Supplies Needed:</b></p> <ul style="list-style-type: none"> <li>• Marking pen (Washable)</li> <li>• Millimeter ruler</li> <li>• Sharp pens</li> <li>• Cold water</li> <li>• Warm water</li> <li>• Toothpicks (30 per class)</li> </ul>	<p>and taste.</p> <p><b>Print class copies prior to class</b> <a href="#">“Use your Brain Part 1: Pre-Lab Worksheet”</a></p>	<p>equilibrium.</p> <p><b>Supplies Needed:</b></p> <ul style="list-style-type: none"> <li>• Tongue Depressors (1 per student)</li> <li>• Cups or beakers</li> <li>• Sugar</li> <li>• Sugar</li> <li>• Lemon juice</li> <li>• Stopwatch or clock</li> <li>• Essential oil <ul style="list-style-type: none"> <li>• 3 small items (paper clip, key, pen top)</li> </ul> </li> </ul> <p><b>Print class copies prior to class.</b> <a href="#">“Use your Brain Part 2: Stations”</a> and <a href="#">Use Your Brain Lab Report</a></p>		<p>should be prepared prior to class)</p> <ul style="list-style-type: none"> <li>• <b><a href="#">Task Card Answers</a></b></li> </ul>
<p><b>Independent Practice (45-50 minutes)</b></p> <p>TTW circulate the room to monitor the students performance and clarify instruction as needed with daily independent practice.</p> <p>Refer to supplemental resources for additional assignments during idle time</p>	<p>TSW will evaluate each receptor through a lab investigation. TSW complete <b>pg #210-212 in the McGraw Hill 2nd Edition lab manual.</b></p> <ol style="list-style-type: none"> <li>1. <b>Procedure A:</b> <i>Receptors and General Senses</i></li> <li>2. <b>Procedure B:</b> <i>Sense of touch</i></li> <li>3. <b>Procedure C:</b> <i>Two-Point threshold</i></li> <li>4. <b>Procedure D:</b> <i>Sense and Temperature</i></li> </ol> <p>TSW will simultaneously record their data using <b>pg #213-214 in the McGraw Hill 2nd Edition lab manual.</b></p>	<p>TSW explore the special senses functions by completing the <a href="#">“Use your Brain Part 1: Pre-lab Worksheet”</a> pages Activity for lab preparation</p> <p><b><u>Concept Connection Extension Activity</u></b> <i>(optional if time permits)</i></p> <p>Hole’s Essentials of Human Anatomy &amp; Physiology pg# 362</p>	<p>TSW will continue to explore special senses functions by engaging in the lab. TSW rotate to stations to complete the <a href="#">“Use your Brain Part 2: Stations”</a> and <a href="#">Use Your Brain Lab Report</a></p> <p>stations to apply the functions of each lobe.</p>	<p>TSW will engage in a <a href="#">digital interactive activity</a> to review the structure of the eye and the nervous system.</p> <p><a href="#">Answer Key to digital ppt</a></p>	<p><b>1. Formative assessment Quiz 6: Special Senses</b></p> <p><b>2. After completing the assessment, TSW complete <a href="#">Endocrine guided notes</a> that introduce them to the Endocrine System</b></p>



<p><b>Assessment/Summary (5-10 minutes)</b>  <i>Formative Assessment should have between 15 to 20 questions</i></p>	<p><b>Exit ticket:</b>  Show students <a href="#">Exit ticket Unit 3 ppt</a></p> <p><b>Homework:</b>  Students should read and take free notes on 10.4 in textbook: Hole's Essentials of Human Anatomy &amp; Physiology (# 359)</p>	<p><b>Exit ticket:</b>  Show students <a href="#">Exit ticket Unit 3 ppt</a></p>	<p><b>Exit ticket:</b>  Show students <a href="#">Exit ticket Unit 3 ppt</a></p>	<p><b>Exit ticket:</b>  Show students <a href="#">Exit ticket Unit 3 ppt</a></p>	<p><b>Formative Assessment Quiz 6: Special Senses (Google Form Assessment can be created using questions from Hole's Essentials of Human Anatomy &amp; Physiology (#385-386)</b>  Answer Key can be found in the teacher's manual (#199-201)</p>
<p><b>Small Group Tasks (TBA)</b></p>	<p>Students will be given accommodations based on IEP requirements.</p>	<p>Students will be given accommodations based on IEP requirements.</p>	<p>Students will be given accommodations based on IEP requirements.</p>	<p>Students will be given accommodations based on IEP requirements.</p>	<p><b>Questions may be modified for students in small groups and/ or time in half should be provided to those students whose accommodations permits.</b></p>

### Week 3

**GSE: SAP 3b.**

**Focused Concept:**

- Discuss the negative feedback mechanisms regulate hormonal secretion.
- Explain how the nervous system controls the secretion of hormones.
- Describe the functions of the hormones that the pituitary gland secretes.
- Describe the location of the thyroid gland and list its hormones it secretes.
- Describe the function of the hormones that the parathyroid gland secrete.
- Explain how the secretion of each adrenal hormone is regulated
- Describe how the body responds to stress.

**Phenomenon:**

1. The endocrine system produces hormones, which are biochemicals that send messages to and from various organs within the body.

**DQ:**

1. What are the components of the endocrine system?
2. State some general functions of hormones.
3. Explain three examples of control of hormonal secretion,
4. Where is the pituitary gland located?
5. Explain how the hypothalamus controls the secretory activity of the posterior and anterior lobes of the pituitary gland .
6. What is the function of prolactin?
7. Where is the thyroid gland located and which of its hormones affect carbohydrates metabolism and protein synthesis?
8. How does parathyroid help regulate concentration of blood calcium and phosphate ions?
9. Name the hormones the adrenal medulla gland secretes and what secretes the release of the hormones?

			<p>10. Name the most important hormones of the adrenal cortex.</p> <p>11. What is the function of glucagon and insulin?</p> <p>12. Where is the pineal gland and thymus located and what are their functions?</p> <p>13. Describe how the body responds to stress.</p>		
SEP: Construct an Argument			CCC: Systems and System Models, Structure and Function, and Stability and Change		
	Day 11	Day 12	Day 13	Day 14	Day 15
<p>Learning Targets</p> <p>The students will be able to:</p>	Students can identify the endocrine system's ability to release chemicals in order to maintain homeostasis.	Students can identify which glands regulate what hormones.	Students can distinguish pathologies by evaluating urine samples.	Students can get clarification on any misconceptions to prepare for the Unit exam.	Students can demonstrate their knowledge of concepts covered in Unit 3.
<p>Opening (10-15 minutes)</p>	<p><u>Hormones actions and secretion</u></p> <ul style="list-style-type: none"> <li>Show students the <u>phenomenon</u>. (Use <u>Teacher manual pg #204</u>) to help explain the endocrine system's ability to release chemicals in order to maintain homeostasis .</li> <li>TTW Use the <u>See-Think-Wonder</u> protocol to guide student thinking.</li> <li>TTW Ask students: What do you see? What do you think about what you are seeing? What does it make you wonder?</li> <li>TTW provide students opportunities to share observations and develop questions.</li> <li>TTW record students' questions to direct instruction.</li> <li>TTW ask questions to connect concepts from the previous week.</li> </ul> <p><b>Vocabulary: TSW add</b></p>	<p><u>Glands and Hormone Regulation</u></p> <ul style="list-style-type: none"> <li>Show students the <u>phenomenon</u></li> <li>TTW Use the <u>See-Think-Wonder</u> protocol to guide student thinking.</li> <li>TTW Ask students: What do you see? What do you think about what you are seeing? What does it make you wonder?</li> <li>TTW provide students opportunities to share observations and develop questions.</li> <li>TTW record students' questions to direct instruction.</li> <li>TTW ask questions to connect concepts from the previous day.</li> </ul> <p><b>Vocabulary: TSW add terms to the Digital KIM Chart</b></p> <ul style="list-style-type: none"> <li>thyroid gland</li> <li>follicular cells</li> <li>thyroxine</li> </ul>	<p><u>Endocrine Pathologies</u></p> <ul style="list-style-type: none"> <li>Show students the <u>phenomenon</u></li> <li>TTW Use the <u>See-Think-Wonder</u> protocol to guide student thinking.</li> <li>TTW Ask students: What do you see? What do you think about what you are seeing? What does it make you wonder?</li> <li>TTW provide students opportunities to share observations and develop questions.</li> <li>TTW record students' questions to direct instruction.</li> <li>TTW ask questions to connect concepts from the previous day.</li> </ul> <p><b>Vocabulary: TSW add terms to the Digital KIM Chart</b></p> <ul style="list-style-type: none"> <li>Cushing syndrome</li> <li>Addison disease</li> <li>Type 1 Diabetes Mellitus</li> <li>Type 2 Diabetes Mellitus</li> </ul>	<p><u>Unit 3 Review</u></p> <ul style="list-style-type: none"> <li>Show students the <u>phenomenon</u></li> <li>TTW Use the <u>See-Think-Wonder</u> protocol to guide student thinking.</li> <li>TTW Ask students: What do you see? What do you think about what you are seeing? What does it make you wonder?</li> <li>TTW provide students opportunities to share observations and develop questions.</li> <li>TTW record students' questions to direct instruction.</li> <li>TTW ask questions to connect concepts from the previous day.</li> </ul>	<p><b>Summative Assessment Unit 3 Exam</b></p>

	<p><b>terms to the Digital KIM Chart</b></p> <ul style="list-style-type: none"> <li>cholesterol</li> <li>signal transduction</li> <li>cyclic AMP (cAMP)</li> <li>prostaglandins</li> <li>pituitary glands</li> <li>anterior pituitary</li> <li>posterior pituitary</li> <li>releasing hormones</li> <li>growth hormones (GH)</li> <li>Prolactin (PRL)</li> <li>Thyroid-stimulating hormone (TSH)</li> <li>adrenocorticotrophic hormone (ACTH)</li> <li>Follicle-stimulating hormone (FSH)</li> <li>testes</li> <li>ovaries</li> <li>antidiuretic hormone</li> <li>oxytocin (OT)</li> </ul> <p><b>Hole's Essentials Reference Pages: #394-399</b></p>	<ul style="list-style-type: none"> <li>triiodothyronine</li> <li>thyroid hormone</li> <li>calcitonin</li> <li>parathyroid glands</li> <li>parathyroid hormone (PTH)</li> <li>adrenal gland</li> <li>adrenal medulla</li> <li>adrenal cortex</li> <li>epinephrine</li> <li>norepinephrine</li> <li>aldosterone</li> <li>mineralocorticoid</li> <li>cortisol</li> <li>glucocorticoid</li> <li>pancreas</li> <li>glucagon</li> <li>insulin</li> <li>pineal gland</li> <li>melatonin</li> <li>circadian rhythms</li> <li>thymus thymosins</li> <li>placenta</li> </ul> <p><b>Hole's Essentials Reference Pages: #404-418</b></p>	<p><b>Hole's Essentials Reference Pages: #412 and 415</b></p>		
<p><b>Guided Practice/Transition (20 minutes)</b>  <b>**Lab Prep is needed this week.**</b></p> <p>TTW ask clarifying questions to increase students' engagement and check for understanding throughout the lesson.</p> <p><b>Transition to Work Session</b></p>	<p>TTW guides the class through using the <a href="#">Endocrine System ppt</a> to discuss hormones.</p> <p>Research and print class copies of recent articles about common hormones students may recognize prior to class</p>	<p>TTW guides the class through using the <a href="#">Endocrine System ppt</a> to discuss endocrine organs and the hormones they regulate.</p> <p>Print class copies prior to class. <a href="#">QR code gland and diseases</a></p>	<p>TTW guides the class through using the <a href="#">Endocrine System ppt</a></p> <p><b>Wet Lab Supplies Needed:</b></p> <ul style="list-style-type: none"> <li>distilled water</li> <li>yellow food coloring</li> <li>urinalysis PH sticks</li> </ul>	<p>TTW facilitate a thorough review of terminology and concepts in Unit 3 using the <a href="#">Endocrine System ppt</a> and review games to ensure students are prepared for the Unit 3 Assessment.</p>	<p>TTW answers any student questions to prepare them for their formative assessment.</p> <p>Please Note: Before the exam, prepare a class set of copies.</p> <ul style="list-style-type: none"> <li><a href="#">Circulatory System close reading</a></li> <li><a href="#">Cardiovascular graphic organizer</a></li> </ul>
<p><b>Independent Practice (45-50 minutes)</b>  TTW circulate the room to monitor the students performance and clarify instruction as needed</p>	<p>TTW follow the <a href="#">Teacher manual pg #206</a> to provide direct instructions for the student's assignment: <b>Writing Connection:</b></p>	<p>TSW will be grouped in 4's to complete the <a href="#">QR code gland and diseases</a></p>	<p>TSW complete the <a href="#">Endocrine Urinalysis Lab</a>  Please Note: Before instruction, prepare a class set of copies.</p>	<p><a href="#">Nervous System Jeopardy Game</a></p> <p><a href="#">Special Senses Jeopardy Game</a></p>	<ol style="list-style-type: none"> <li><b>Unit 3 assessment</b></li> <li>After the exam, TSW complete the following reading and graphic organizers: <ol style="list-style-type: none"> <li><a href="#">Circulatory</a></li> </ol> </li> </ol>

with daily independent practice. Refer to supplemental resources for additional assignments during idle time	<b>Types of Hormones</b>		<b>**Note**</b> Remove the answer key before assigning the lab.	<b>Endocrine System Jeopardy Game</b>	System close reading w/ main function organizer <b>b. Cardiovascular graphic organizer.</b>
Assessment/Summary (5-10 minutes) <i>Summative Assessment should have between 40 to 50 questions</i>	<b>Exit ticket:</b> Show students <a href="#">Exit ticket Unit 3 ppt</a>  <b>Homework:</b> Students will complete the Homeostatic Imbalance with <b>Answer Key</b>	<b>Exit ticket:</b> Show students <a href="#">Exit ticket Unit 3 ppt</a>  <b>Homework:</b> Students will complete the Nervous system review to prepare them for the unit exam.	<b>Exit ticket:</b> Show students <a href="#">Exit ticket Unit 3 ppt</a>  <b>Homework:</b> Students will complete the Endocrine System review to prepare them for the unit exam.	<b>Exit ticket:</b> Show students <a href="#">Exit ticket Unit 3 ppt</a>  <b>Homework:</b> Students will complete the review to prepare them for the unit exam.	<b>Summative Assessment Unit 3 Exam</b> (Exam can be created via Illuminate using questions from Hole's Essentials of Human Anatomy & Physiology (#346-424) Answer Key can be found in the teacher's manual (#176-222)
<b>Small Group Tasks (TBA)</b>	Students will be given accommodations based on IEP requirements.	Students will be given accommodations based on IEP requirements.	Students will be given accommodations based on IEP requirements.	Students will be given accommodations based on IEP requirements.	<b>Questions may be modified for students in small groups and/ or time in half should be provided to those students whose accommodations permits.</b>

### Assessment Prep

Prepare students for assessment by reviewing the following Assessment Prep Presentation Topics:

#### Unit 3 Review

- Nervous System structures
- Nervous System Functions
- Major parts of the brain location and functions
- Sensory receptor pathway
- Nervous system Disorders
- Special senses structures and functions
- Endocrine system functions
- Endocrine glands location and functions
- Endocrine System Disorders

### Labs / Investigations

Mandatory Labs	Explore Learning Gizmo	Pivot Interactives/Phet
1. <a href="#">Sheep Brain Lab Dissection</a>	<a href="#">Reaction Time Part 1</a> <a href="#">Reaction Time Part 2</a>	N/A

- [VirtualSheepBrain Dissection](#)
- 2. [Special Senses Lab](#)
- 3. [Endocrine Urinalysis Lab](#)

**Additional Resources/Tasks**

**Supplemental Resources**

- [Parts of a Neuron Identification Review](#)
- [Brain Anatomy Review](#)
- [Student Nervous System Guided ppt](#)
- [Nervous System Webquest](#)
- [Nervous System Disease Slide](#)
- [Multiple Sclerosis Case Study](#)
- [Nervous System Review](#)
- [Special Senses Digital Fill-In ppt](#)
- [Endocrine Gland Yearbook](#)
- [Hormone Basics](#) with [Answer Key](#) **\*\*Note\*\*** Remove the answer key before assigning the worksheet
- [Endocrine System Review](#)