

Science Lesson Plan

The Digestive System and the Nervous System

I. Main Ideas/Conceptual Understanding/Goals

LIFE SCIENCE 3. Describe the characteristics, structures, life cycles, and environments of organisms.

Identify and describe the purpose of the **digestive, nervous**, skeletal, and muscular systems of the body. (DOK 1)

II. Specific Objectives/Lesson Focus

1. The student will compare and contrast the digestive system and the nervous system of the body.
2. The student will identify the major components of the digestive system and the nervous system and summarize their functions.

III. Procedures

A. Introduction/Motivation

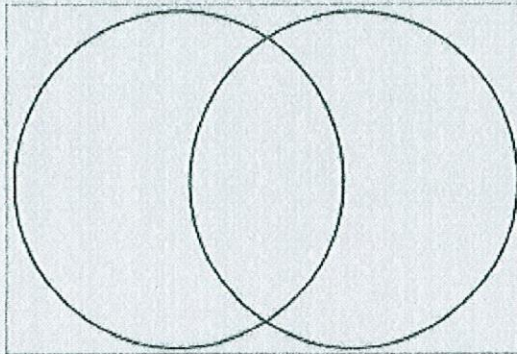
1. Have the room arranged with the following materials on a table.
 - Index cards
 - Pencils
 - Venn Diagram Handout (**attached**)
2. Give the students four index cards and let the students write one or two interesting facts that they learn about the digestive system and one or two interesting facts they learned about the nervous system from the previous lessons. Put only one interesting fact on each card.
 - Allow time to discuss some of the interesting facts the students learned and wrote on their index cards.
 - Correct any misunderstanding the students may have.

B. Study Learning

- Review the following information about the Digestive System:
 - The digestive system stores and digests foods, transfers nutrients to the body, eliminates waste and absorbs water.
 - The major organs are the stomach, esophagus, salivary glands, liver, gallbladder, pancreas, small intestines, and large intestines.
 - The digestive system is a very important system of the human body.
 - The digestive system is made up of organs that break down food into protein, vitamins, minerals, carbohydrates, and fats, which the body needs for energy, growth, and repair.
 - After food is chewed and swallowed, it goes down the esophagus and enters the stomach, where it is further broken down by powerful stomach acids.
 - From the stomach, the food travels into the small intestine. This is where your food is broken down into nutrients that can enter the bloodstream through tiny hair-like projections.
 - The excess food that the body doesn't need or can't digest is turned into waste and is eliminated from the body.
 - The digestive system remains healthy with proper nutrition and healthy eating.

- Review the following information about the Nervous System:
 - The nervous system is one of the most important systems of the human body
 - The nervous system is made up of the brain, the spinal cord, and nerves.
 - The nervous system is the body's control system.
 - The brain sends, receives, and processes nerve impulses throughout the body.
 - These nerve impulses tell the muscles and organs what to do and how to respond to the environment.
 - The nervous system is the control center of the body, monitoring conditions within and outside the body and sending out electrical signals to respond to them.

- The nervous system is divided into two systems: the Central Nervous System and the Peripheral Nervous System
- The central nervous system includes the brain and the spinal cord.
- The spinal cord is a long bundle of neurons that goes down the back.
- From the spinal cord, nerves stretch throughout the body like a highway. This is the peripheral nervous system.
- Draw a Venn diagram on the board. Label one circle Digestive System and the other circle Nervous System.



- Explain to the students that a Venn diagram is a graphic organizer, and it is used to compare and contrast two things or show how they are alike and different.
- Begin to model how to complete the Venn diagram on the board.
 - Write one fact in the "digestive system circle" (i.e., It contains the stomach.)
 - Add one fact in the "nervous system circle" (i.e., It contains the brain.)
 - Write one fact in the "overlapping section of the two circles" (i.e., Both systems are important to the human body.)
 - Tell the students that they may use your examples on their Venn diagrams but they need to add additional facts on how the two systems are alike and different.
- Divide the class into groups with three to four students in each group. Give the groups a blank Venn Diagram (**attached**).
 - Using the facts that the students wrote on their index cards along with the information discussed in the classroom, let the students work as a group to create a Venn diagram comparing and contrasting the digestive system and the nervous system.
 - The students can use one-word or short sentences depending on their grade level to complete the Venn diagram.

- Once the students have completed their group's Venn diagrams, let the students display the Venn diagrams in the room and discuss them with the class.

3. Culmination

- The students will discuss their Venn Diagrams with the class using interesting facts they learned about the digestive system and the nervous system.
- As the teacher, make sure to emphasize that healthy eating habits and good physical activities are good for the development of both the digestive system and the nervous system.
- In addition, make sure to emphasize that the nervous system is very important to the digestive system.
 - It controls the digestive tract.
 - The brain controls drinking and feeding behavior.
 - The brain controls muscles for eating and elimination.
 - The digestive system sends sensory information to the brain.
 - Everything we do is connected and regulated by the brain.
- Ask are there any questions and clarify any misunderstandings.
- Let the students know that you have enjoyed teaching them about the digestive system and the nervous system.

4. Follow-up

- Have students make a Venn diagram individually comparing and contrasting the brain and the stomach.
- Have students analyze the benefits of both physical activity and healthy eating habits on the digestive system and the nervous system.
- Students who have access to computers or iPads can summarize what they learned today or to do further research on the digestive system or nervous system.
- You can use the group "Venn Diagram" activity as an assessment for this lesson.

Extensions and Connections (Assign as needed)

- Have the students create a poster comparing and contrasting the digestive system and the nervous system.
- Allow time for the students to share their posters in class.
- Have students create a drawing showing the step-by-step process a food goes through from the time it enters the mouth until it is eliminated.
- Allow time for the students to share their drawings in class.

Ideas for Journal/Writing Prompts

- Write a paragraph explaining how the Nervous System aids the Digestive System.
- Write a paragraph explaining the step-by-step process a food goes through from the time it enters the mouth until it is eliminated.