Week 1: Science - Control and Coordination

Generated: 7/23/2025
Subject: Science
Grades: 10

Ø=ÜÚ Lesson Overview Subject: Science Grade: 10 Week: 1 Curriculur
Objectives To understand the fundamental concept of control and coordination in living organisms.To describe the structure and function of the human nervous system, including reflex actions, brain, and spinal cord.To explain the mechanism of coordination in plants, including tropic movements and plant hormones.To identify major endocrine glands in the human body and describe the functions of their respective hormones.To appreciate the importance of feedback mechanisms in hormonal regulation. Ø=ÜÅ Daily Lesson Breakdown Mo
and Coordination & Reflex Action Ø<ß¯ Objectives: Define control and
examples.Describe the structure of a neuron.Explain the mechanism of reflex action and its significance. Ø<ßª Activities (40 minutes): **Engage (5 min):** Start v
Students clap hands, and the person next to them has to react quickly. Ask: 'How did your body know to react so fast?' Introduce the concept of stimuli and response. Relate to common Indian scenarios like quickly moving away from a hot *chai* kettle.**Explore (15 min):** Discuss 'What is Control and Coordination?' using real-life examples (e.g., playing *Kabaddi* requires coordination; studying for exams requires control over attention). Introduce the neuron as the basic unit. Draw a simple diagram of a neuron on the board, explaining its parts (dendrite, axon, cell body, nerve ending).**Explain (15 min):** Focus on Reflex Action. Discuss the example of touching a hot object. Explain the reflex arc using a flowchart/diagram. Emphasize that it's an involuntary, rapid response. Discuss why reflex actions are crucial for survival, like withdrawing hand from a hot *roti*.**Elaborate (5 min):** Quick Q&A: 'What makes reflex actions
Materials: Whiteboard/Blackboard and markers/chalkDiagram of a neuron (can be drawn or printed)Reflex arc diagram Ø=ÜÝ Homework: Read NCERT Chapter 7, S
'In-text Questions' on page 119. Ø=ÜÖ NCERT Reference: Science - T
Sections 7.1 (What is control and coordination?), 7.1.1 (What happe
Teaching Notes: Emphasize the evolutionary advantage of reflex actions for immediate safety. Use culturally relatable scenarios to make concepts tangible. Tuesday - Human Nervous System - The Brain (An Overview) Ø<ß¯ Objectives: Identify the major components o
(CNS, PNS).Locate and describe the general functions of the Forebrain, Midbrain, and Hindbrain. Ø<ßª Activities (40 minutes): **Engage (5 min):** Ask students: 'What
things the human body can do?' (e.g., singing a *bhajan*, solving a complex math problem, performing *Bharatanatyam*). Lead to the brain as the control center.**Explore (15 min):** Introduce the Human Nervous System: Central Nervous System (CNS) and Peripheral Nervous System (PNS). Focus on the Brain. Use a simplified diagram of the human brain to point out the main regions: Forebrain, Midbrain, Hindbrain. Briefly discuss their general functions (e.g., Forebrain for thinking, memory; Hindbrain for coordination, involuntary actions).**Explain (15 min):** Discuss specific functions linked to daily Indian life: How does your brain help you remember the lyrics of a patriotic song? How does it help you maintain balance while riding a bicycle through a crowded street during a festival? Emphasize the brain's role in voluntary actions, thinking, memory, emotions, and sensory processing.**Elaborate (5 min):** Conduct a 'Think-Pair-Share' activity: Students discuss with a partner one interesting function of the brain
Materials: Whiteboard/Blackboard and markers/chalkSimplified diagram of the human brain (lobes and key areas)Chart showing CNS and PNS divisions Ø=ÜÝ Homework:
Section 7.1.2 (first part, focusing on the brain structure and general functions). Draw a labelled diagram of the human brain (simple overview). Ø=ÜÖ NCERT Referenc
X: Chapter 7, Section 7.1.2 (Human Nervous System - focusing on br
Notes: Keep the brain's complexity at a grade 10 level, focusing on main parts and their primary roles. Use analogies to make abstract concepts clearer, like the brain being the 'CEO' of the body. Wednesday - Human Nervous System - Spinal Cord, Protection & Ner
Objectives: Describe the structure and function of the spinal cord.Explain how the brain and spinal cord are protected.Illustrate the transmission of nerve impulses across a synapse and how it leads to action. Ø<ßª Activities (40 minutes): **Engage (5 min):** Recall ye
Ask: 'If the brain is the control center, how does it communicate with the rest of the body, especially your legs when you kick a football?' Introduce the spinal cord as the 'information highway'.**Explore (15 min):** Explain the structure and function of the spinal cord (relay center, reflex actions).