

Reading Guide

The Nervous System and Senses

This worksheet refers to “Qld Junior Science’ website. Read the notes entitled ‘Nervous System and Senses’ before answering these questions.

Overview

1. Look at the top part of the overview of the human nervous system. Key words are ‘central’ and ‘peripheral’. The word ‘periphery’ means ‘the outer boundary or the surroundings’. Where do you think the central and peripheral nervous systems are to be found?
2. The brain and the spinal cord are not only different from the sensory and motor in their position in the body but also how they are enclosed. What protects the central nervous system?
3. At the bottom right of the concept map are the terms ‘sensory’ and ‘motor’. What do the sensory nerves do?
4. If a motor in a car makes it move, what are controlled by the motor nerves?

The Neurone

5. The notes on ‘The Neurone’ talk about the small nerve cells that make up the whole of the nervous system. Read the notes and decide in which direction a nervous impulse travels – dendrites to cell body to axon or vice versa (the reverse of that).
6. Are nerve cells alive or are they ‘dead’ like electrical wires? On what information did you base your decision?

The Central Nervous System

7. 3 parts of the brain are mentioned. What are they and what are their roles?
8. Key words are ‘voluntary’ and ‘vital’. Find these words in the dictionary. What are their meanings here?

The Reflex Arc

9. In the flow chart about 'The Reflex Arc', it says that the idea of 'Ouch! That was hot!' is thought after the person has removed the hand from the hot stove. Why do you think this happens?

Senses

10. In the note about 'Senses', there is a key word 'stimulus'. Find out what the word 'stimulate' means and write down as many everyday stimuli as you can that would affect your sense of touch.

The Eye

11. 'The Eye' has a part called the cornea. It is at the front of the eye and is transparent (see-through). Why do you think the cornea must be transparent? Would it have any blood vessels in it?
12. 'Humour' is another name for 'fluid or a substance that flows like water or honey'. Think of the blue-green colour called aqua and write down what kind of fluid Aqueous Humour is?
13. The word 'vitreous' comes from an old Latin word for glass. Which humour do you think is the thickest – aqueous or vitreous?
14. Look now at the most colourful object in the room. Now look sideways at it. After reading about fovea, explain why we look straight at colourful objects to see them better.
15. The word 'optic' has to do with the eye. What is the job of a person who works with eyesight that has a similar root?
16. Think about the path of light entering and travelling through the eye and then this information is passed to the brain for interpretation. Any of these parts may be damaged by injury or infection. Write at least 3 examples of how you could become blind following various types of injuries.

The Ear

17. Read the notes about 'The Ear' and then look in a friend's ear. Are you looking at the outer, the middle or the inner ear? What made you decide this?

18. Sound is the backward and forward vibrations of tiny air particles. In order to hear sound, this means that one thing collides with another thing then hits a third thing and so on along the chain. List the parts that are vibrated in turn in the ear. Notice that some parts are solid and others are liquid.
19. Use your ideas from Q18 to explain why loud sounds stimulate more hairs in the cochlea than quiet sounds.
20. At the end of the notes, it says that moving fluid in 3 canals helps us to know our head's position in 3 dimensions. Draw how these canals would look.