

Ashtree Primary School and Nursery Medium Term Plan for Science

Year 6 Autumn Term – Animals including Humans Unit

Prior Knowledge – Y5 – Animals including Humans

- Step 1 - identify ways in which the appearance of humans changes as they get older
- Step 2 - identify some characteristics that will not change with age
- Step 3 - recognise stages in growth and development of humans including puberty

Prior Knowledge – Y4 – Animals including Humans

- Step 1** - identify a wider range of body parts, including some internal organs
- Step 2** - locate and name the different organs in the **digestive system**
- Step 3** - describe the role of each organ in the digestive system
- Step 4** - state that animals have different **diets** and may have different kinds of teeth and describe the role of each type of teeth in **digestion**
- Step 5** - recognise they need to take care of their teeth and name the different types of teeth – **incisor, molar, canine**
- Step 6** - explain how they should look after their teeth and recognise why they need to do so

Prior Skills – Y5

reports on findings from enquiries, using relevant scientific language and conventions, **in oral and written explanations such as displays and other presentations**, beginning to use and develop keys and other information to identify, classify and describe living things and materials

Key Vocabulary - Heart, veins, arteries, capillaries, blood, pulse, beats, oxygen, carbon dioxide nutrients, organs, drugs, medicines, minerals, vitamins, lungs, caffeine, medical, legal, illegal

Key Knowledge

- Step 1 - identify and name the parts of the **circulatory** system
- Step 2 - know that the **heart** is made of **muscle**
- Step 3 - describe what the **heart** and **blood vessels** do
- Step 4 - state how to measure **pulse rate** and recognise that pulse rate is a measure of how fast the **heart** is **beating**
- Step 5 - discover that during exercise the heart beats faster to take blood more rapidly to the muscles and make careful measurements of pulse rate.
- Step 6 - describe the **different functions of the blood** (e.g. transporting and protecting)
- Step 7 - know that the blood comes from the heart in **arteries** and returns to the heart in **veins**
- Step 8 - know that blood carries **oxygen** and other essential materials around the body (**minerals, vitamins,**) and takes waste products away (**carbon dioxide**) to the **lungs**.
- Step 9 - identify some of the harmful effects of smoking
- Step 10 - give several reasons why it is sometimes necessary to take **medicines** and recognise that care needs to be taken with **medicines** and that they can be dangerous
- Step 11 - identify some harmful effects of **drugs**
- Step 12 - identify food as a fuel for the body and name the major groups into which food is categorised and identify sources for each group (**recap from year 3**)
- Step 13 - describe the main function of the **organs** of the human body

Key Skills

- Step 1** - uses and develops keys and other information to identify, classify and describe living things and materials
- Step 2** - uses and develops keys and other information to identify, classify and describe living things and materials
- Step 3** - uses relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas
- Step 4 - makes decisions about what observations to make, what measurements to use, how long to make them for and whether to repeat them and can explain their reasoning for them.
- Step 5 - **recognises and controls variables where necessary** (e.g. explains which variables need to be controlled and why), **takes measurements, in standard units, using a range of scientific equipment, accurately and precisely, takes repeat readings when appropriate**
- Step 6 - uses relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas
- Step 7 - uses relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas
- Step 8 - **records and presents findings using the most appropriate method.**
- Step 9 - **records and presents findings using the most appropriate method.**
- Step 10 - uses their scientific experiences to explore and generate ideas and raise different types of questions
- Step 11 - uses their scientific experiences to explore and generate ideas and raise different types of questions
- Step 12 - uses and develops keys and other information to identify, classify and describe living things and materials
- Step 13 - uses relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas

Curriculum Enhancements

Look at an animal's heart.

Suggested Activities

Step 1 – Recap on learning about systems in the human body from Year 4. What do they already know about the circulatory system?

Step 2 – Recap on prior learning in Year 3 about muscles and how they work before linking to the heart.

Step 3 - Create a role play model for the circulatory system.

Steps 4 & 5 - Carry out a range of pulse rate investigations: ▪ fair test – effect of different activities on my pulse rate ▪ pattern seeking – exploring which groups of people may have higher or lower resting pulse rates ▪ observation over time - how long does it take my pulse rate to return to my resting pulse rate (recovery rate) ▪ pattern seeking – exploring recovery rate for different groups of people.

Step 6 – What do you think the purpose of blood is? Why do you think this?

Step 7 – Label a diagram of a heart showing the route which blood takes.

Step 8 - Write a job description for blood

Steps 9 – 12 - Research the negative effects of drugs (e.g. tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.

Step 13 – Make up a quiz about the main organs of the human body.

Curriculum links - PE, PSHE,

Possible Misconceptions

Some children may think:

- your heart is on the left side of your chest
- the heart makes blood
- the blood travels in one loop from the heart to the lungs and around the body
- when we exercise, our heart beats faster to work the muscles more
- some blood in our bodies is blue and some blood is red
- we just eat food for energy
- all fat is bad for you
- all dairy is good for you
- protein is good for you, so you can eat as much as you want
- foods only contain fat if you can see it
- all drugs are bad for you.

This will lead to . . .

In KS3, the children will learn to,

The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases. (KS3)

- The effects of recreational drugs (including substance misuse) on behaviour, health and life processes. (KS3)
- The structure and functions of the gas exchange system in humans, including adaptations to function. (KS3)
- The mechanism of breathing to move air in and out of the lungs. (KS3)
- The impact of exercise, asthma and smoking on the human gas exchange system. (KS3)