

1. Organisms 5: Disease

This unit links to previous work on cells and starts by introducing different **pathogens** that can cause **disease**, we will learn the features of these pathogens and some of the diseases that they cause. We then look at what **bacteria** need to grow and work **aseptically** to grow a sample of bacteria on **agar** plates, linking to the work of Semmelweis and why it is important to wash our hands. We then consider how the body defends itself against pathogens and **explain** how the **immune system** works to protect us from illness. This is then linked to **vaccinations** and how they can make us **immune** to a disease.



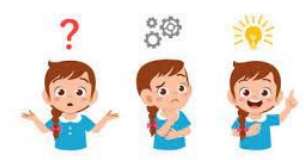
SUMMATIVE ASSESSMENT 1
(Organisms 5, matter 5, forces 3)
week 9

2. Organisms 6: Healthy Lifestyles



This unit looks at how to make sure your body is healthy and

functioning properly. We start by considering what we mean by **health** and activities that could have positive and negative effects on it. This leads onto looking at balanced diets and the impact of not having a balanced diet. We then progress to look at different types of **drugs** and their effects on the body before considering smoking and alcohol in more detail. We study how they damage different organ systems in the body and how they can harm a developing **foetus**.



START!

Year 9

Half term 1

Half term 2

3. Ecosystems 3 - Bioenergetics forces

We start by looking at the **cells, tissues** and **organs** found in plants, linking this to previous learning. We then study how plants are able to use sunlight to produce their own food via **photosynthesis**. We **investigate** factors that affect how quickly photosynthesis occurs and practice **writing a scientific method** and **identifying variables** in experiments. We move on to look at how living organisms release energy through **respiration**, **comparing and contrasting aerobic** and **anaerobic** respiration and looking at how exercise effects these.



Practical skills: working aseptically to grow bacteria

SUMMATIVE ASSESSMENT 3
(ecosystems 3, Earth 2, forces 4)
Week 27

Numeracy and graph skills: Energy in food calculations and graph of results

Half term 4

Half term 3

Graph skills and conclusions from data: factors affecting photosynthesis

SUMMATIVE ASSESSMENT 2
(organisms 6, reactions 4, electromagnets 3)
Week 18



Literacy: communicating scientific ideas – comparing selective breeding, cloning and genetic modification

Half term 5

Half term 6

4. Genes 4: Inheritance

Building on prior knowledge about cells we consider what is found inside the **nucleus**. We learn about the structure of **DNA** and how it codes for our **characteristics**. We study how characteristics are **inherited** linking this to previous work on inherited variation. We will then consider how **genes** can be manipulated by humans through selective breeding, cloning and genetic modification.



SUMMATIVE ASSESSMENT 4
(genes 4, reactions 5, waves 3)
Week 35

