

Scheme of Learning: Infection & Response

Topic Sequence:

1	2	3	4	5	6	7	8	9	10
Cell Biology	Particle Model of Matter	Infection & Response	Atomic Structure & the Periodic Table	Atomic Structure (Physics)	Bonding & Structure	Energy	Bioenergetics	Rates of Reaction	Chemistry of the Atmosphere

Topic Overview:

Pathogens are microorganisms such as viruses and bacteria that cause infectious diseases in animals and plants. They depend on their host to provide the conditions and nutrients that they need to grow and reproduce. They frequently produce toxins that damage tissues and make us feel ill. This section will explore how we can avoid diseases by reducing contact with them, as well as how the body uses barriers against pathogens. Once inside the body our immune system is triggered which is usually strong enough to destroy the pathogen and prevent disease. When at risk from unusual or dangerous diseases our body's natural system can be enhanced by the use of vaccination. Since the 1940s a range of antibiotics have been developed which have proved successful against a number of lethal diseases caused by bacteria. Unfortunately many groups of bacteria have now become resistant to these antibiotics. The race is now on to develop a new set of antibiotics

Lesson Sequence:

Starting with an overview of communicable disease and their transmission, including a description of microbes, we learn about the specific disease required by the specification. We then describe the immune response of the human body and how this can be supported with antibiotics and vaccinations. We explore how new medicines are developed and the use of monoclonal antibodies. We finish with a look at how plants protect themselves from pathogens. Our focus skill for this topic is 'describe'.

Sequence of Lessons:

1	Communicable disease
2	Spread of Disease.
3	Viral & bacterial disease
4	Fungi & protist disease
5	Defence mechanisms of human body.
6	Vaccination. Literacy task
7	Antibiotics & painkillers
8	Developing medicines
9	Double blind trials & placebos - Mid topic assessment
10	Monoclonal antibodies
11	Plant diseases
12	Revision
13	Test

Resources:

1	Virus, fungi, bacteria & protist fact sheets – laminated in filing cabinet
2	Petri dishes with sterile agar, cotton buds, tape, marker pens.
3	Viral and bacterial disease laminated fact sheets in filing cabinet
4	Worksheets in shared area folder
5	Worksheets in shared area folder
6	Vaccination and covid literacy task sheets.
7	Patient card and action cards in filing cabinet.
8	Worksheets in shared area folder
9	Two number grids x 15. Two colours of pre-wrapped (for hygiene) sweets. Exam question in shared area folder.
10	Monoclonal antibody laminated fact sheets
11	Symptom checker question key. Laminated pictures of diseased plants.
12	Resources in shared area folder
13	Test paper in shared area

Supportive Reading:

Comprehension activity	Vaccinations & Covid comprehension L6
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Assessment:

Knowledge:	Multiple choice and short answer questions.
Application of Knowledge:	Exam questions based on the skill of 'describe'