SB5 Health, Disease and the Development of Medicines

SB5a Health and disease

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Define the term health.	☐	☐	☐
	Define the term disease.	☐	☐	☐
	Describe how communicable and non-communicable diseases differ.	☐	☐	☐
	Outline the role of the immune system in protecting against disease.	☐	☐	☐
	Explain how disease can affect the immune system.	☐	☐	☐

SB5b Non-communicable disease

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Give examples of non-communicable diseases.	☐	☐	☐
	Define the term malnutrition.	☐	☐	☐
	Explain how diet can lead to malnutrition.	☐	☐	☐
	Describe the link between alcohol and liver disease.	☐	☐	☐
	Explain the effect of alcohol consumption on liver disease at local, national and global levels.	☐	☐	☐

SB5c Cardiovascular disease

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Describe how obesity is measured (BMI and waist : hip calculations).	☐	☐	☐
	Describe how obesity correlates with cardiovascular disease.	☐	☐	☐
	Describe how smoking correlates with cardiovascular disease.	☐	☐	☐
	Explain why exercise and diet affect obesity.	☐	☐	☐
	Compare how cardiovascular diseases are treated	☐	☐	☐

SB5d Pathogens

Step	Learning outcome	Had a look	Nearly there	Nailed it!
5th	Describe some problems and diseases caused by bacteria.	☐	☐	☐
5th	Describe a disease caused by a virus.	☐	☐	☐
5th	Describe a disease caused by a protist	☐	☐	☐
5th	Describe a disease caused by a fungus.	☐	☐	☐
7th	Explain how signs of a disease can be used to identify the pathogen.	☐	☐	☐

SB5e Spreading pathogens

Step	Learning outcome	Had a look	Nearly there	Nailed it!
5th	State the ways in which pathogens can be spread.	☐	☐	☐
6th	Give examples of pathogens that are spread in different ways (e.g. cholera bacteria by water, tuberculosis bacteria and chalara dieback fungi by air, malaria protist by vector, *Helicobacter* by mouth, Ebola by body fluids).	☐	☐	☐
7th	Explain how the spread of different pathogens can be reduced or prevented.	☐	☐	☐

SB5f Virus life cycles

Step	Learning outcome	Had a look	Nearly there	Nailed it!
5th	Describe the structure of a virus.	☐	☐	☐
6th	Explain how viruses differ from cells.	☐	☐	☐
7th	Describe the lytic pathway of a virus life cycle.	☐	☐	☐
7th	Describe the lysogenic pathway of a virus life cycle.	☐	☐	☐
8th	Compare and contrast the lytic and lysogenic pathways.	☐	☐	☐
7th	Calculate the cross-sectional area of viral cultures and clear agar jelly.	☐	☐	☐

SB5g Plant defences

Step	Learning outcome	Had a look	Nearly there	Nailed it!
5th	Describe some physical barriers of plants to pests and pathogens.	☐	☐	☐
5th	Describe some chemical defences of plants to pests and pathogens.	☐	☐	☐

6th	Describe how plant protective chemicals are used to treat human diseases or symptoms.	☐	☐	☐
6th	Describe examples of aseptic technique.	☐	☐	☐
7th	Explain why aseptic technique is used during the culture of microorganisms.	☐	☐	☐

SB5h Plant diseases

Step	Learning outcome	Had a look	Nearly there	Nailed it!
6th	H Describe how plant diseases are detected using visible symptoms.	☐	☐	☐
6th	H Describe how environmental causes of plant problems are eliminated when identifying disease.	☐	☐	☐
6th	H Describe how distribution analysis can help identify a plant disease.	☐	☐	☐
6th	H Describe how plant pathogens are diagnosed in the lab.	☐	☐	☐

SB5i Physical and chemical barriers

Step	Learning outcome	Had a look	Nearly there	Nailed it!
8th	Explain how the spread of the STIs Chlamydia and HIV can be reduced or prevented.	☐	☐	☐
5th	Give examples of physical barriers.	☐	☐	☐
5th	Give examples of chemical barriers.	☐	☐	☐
6th	Describe how physical barriers protect the body (e.g. skin, mucus and cilia).	☐	☐	☐
6th	Describe how chemical barriers protect the body (e.g. lysozymes, hydrochloric acid).	☐	☐	☐

SB5j The immune system

Step	Learning outcome	Had a look	Nearly there	Nailed it!
5th	State that the immune system protects the body by attacking pathogens.	☐	☐	☐
7th	Describe how antigens trigger the release of antibodies and the production of memory lymphocytes.	☐	☐	☐
7th	Describe the role of antibodies in the immune response.	☐	☐	☐
7th	Describe the role of memory lymphocytes in triggering a secondary response.	☐	☐	☐
8th	Explain how immunisation protects against infection by a pathogen.	☐	☐	☐

8th	Discuss advantages and disadvantages of immunisation including herd immunity.	☐	☐	☐

SB5k Antibiotics

Step	Learning outcome	Had a look	Nearly there	Nailed it!
5th	Define the term antibiotic (as medicines that inhibit cell processes in bacteria).	☐	☐	☐
6th	Explain why antibiotics are useful for treating bacterial infections (because they do not damage human cell processes).	☐	☐	☐
6th	Explain why antibiotics cannot be used to treat infections by pathogens other than bacteria.	☐	☐	☐
6th	Describe the stages of development of new medicines.	☐	☐	☐
7th	Explain why each stage of the development of a new medicine is needed.	☐	☐	☐

SB5l Monoclonal antibodies

Step	Learning outcome	Had a look	Nearly there	Nailed it!
6th	H Define the term monoclonal antibody.	☐	☐	☐
6th	H Define the term hybridoma cell.	☐	☐	☐
7th	H Describe how monoclonal antibodies are produced by lymphocytes.	☐	☐	☐
8th	H Explain how monoclonal antibodies are used in pregnancy testing.	☐	☐	☐
8th	H Explain how monoclonal antibodies are used in diagnosis of disease (including blood clots and cancer).	☐	☐	☐
8th	H Explain the advantages of monoclonal antibodies compared with drug and radiotherapy treatments to target cells.	☐	☐	☐