

Knowledge Organiser – Year 8 Microbes & Disease

Key words

Key word	Definition
Transmission	The passing of a microorganism that causes a disease
Microorganism	A microscopic organism
Nucleus	Part of the cell that contains DNA and controls the cells activities
Cytoplasm	Part of the cell where chemical reactions happen
Flagellum	Present in some animal cells (e.g. sperm) and bacteria cells for movement
Bacteria	A microorganism with no nucleus, but with DNA loose in the cytoplasm
Virus	A small infectious agent which replicates inside of a hosts cell
Fungus	A kingdom of organisms which includes both mushrooms and yeast
White blood cell	A part of blood that defends the body from dangerous microorganisms
Vaccine	A jab which can help provided immunity against a disease
Fermentation	Type of anaerobic respiration carried out by yeast which produces ethanol and carbon dioxide
Respiration	A chemical process that uses sugar to produce energy.

Transmission of disease

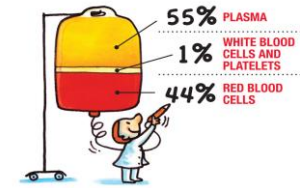
Term	Meaning	Example
Bloodborne	Transmitted through blood	HIV
Waterborne	Transmitted through water	Cholera
Airborne	Transmitted through air	Influenza
Food	Transmitted through food	Salmonella
Direct contact	Transmitted by touch	Herpes

Uses of microorganisms

Bacteria can be used to make yoghurt and cheese. Fungi, such as yeast, can be used to produce bread and alcohol in a process called fermentation. Here, the yeast cells use glucose (a sugar) and produce alcohol and carbon dioxide. This makes yeast important for economic uses.



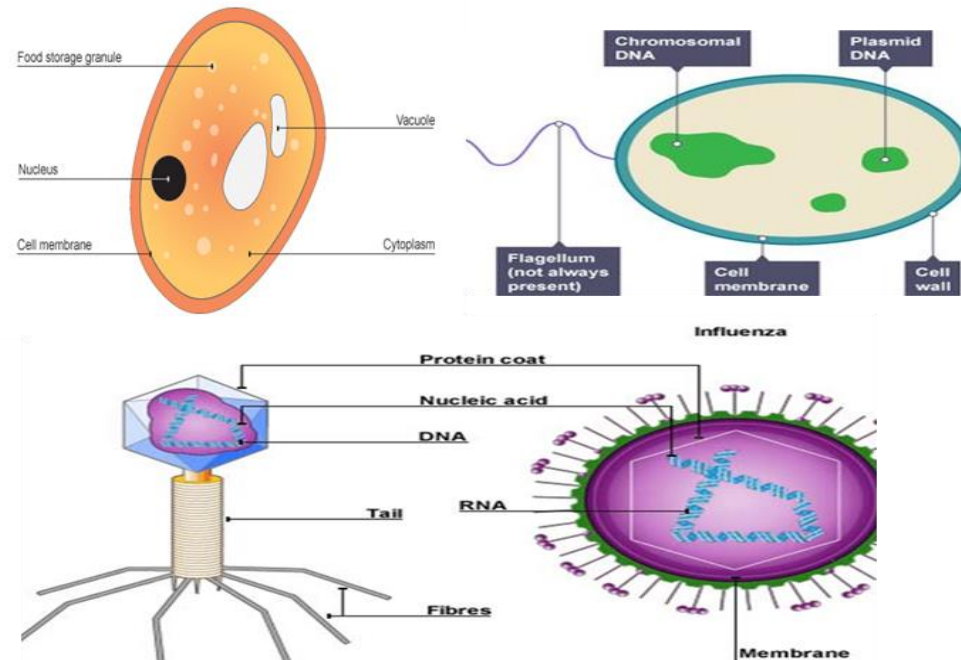
Components of blood



Red blood cells carry oxygen, platelets help form blood clots and plasma transports dissolved substances. See the yellow box for information about white blood cells.

Bacteria, fungi and viruses

You do not need to be able to draw or label viruses, but it is important you can recognise that they come in a wide range of shapes and sizes. You should be able to draw and label fungi cells (top left) and bacteria cells (top right).



White blood cells

White blood cells can defend your body against dangerous microorganisms. They can do this by **engulfing** the microorganism or releasing special proteins called **antibodies** which are able to destroy the invading microorganism.

Vaccines

1. Injected with a weak version of the microorganism which causes the disease
2. Your white blood cells destroy it.
3. When you come into contact with the microorganism again your body is able to destroy it faster
4. You destroy it before it makes you sick – this is immunity.