

**Micro-organisms**

Microorganisms are very tiny living things. They are so small that they are not visible to the naked eye, so a microscope is needed to see them. Microorganisms can be found all around us. They can live on and in our bodies, in the air, in water and on the objects around us. They can be found in almost every habitat



**Key Vocabulary**

<b>bacteria</b>	A single-celled <b>microorganism</b> .
<b>microorganism</b>	An organism that can only be seen using a <b>microscope</b> , e.g. <b>bacteria</b> , mould and yeast.
<b>microscope</b>	A piece of equipment that is used to view very tiny ( <b>microscopic</b> ) things by magnifying their appearance.

**Alexander Fleming**

(1881 - 1955)



Alexander Fleming was a scientist from Scotland. He is famous for discovering penicillin, the first antibiotic. Antibiotics are a type of medicine that can destroy bacteria or stop their growth.

**Discoveries**

Fleming made his greatest discovery by accident. He was examining a bacteria called staphylococcus in a culture dish. Whilst he was away on a trip, a mould spore contaminated the culture. When Fleming checked the dish, he noticed the mouldy area had no bacteria. He investigated and discovered a substance in the mould that stopped bacterial growth. He named it penicillin.

Edward Jenner is significant because he invented the world's first vaccine, which was for smallpox. He is also known by "the father of immunology" and according to studies he has "saved more lives and than the work of any other human."



**Viruses** are parasites, which means they can only survive inside the cells of other living things. They can cause infectious diseases, such as chicken pox or measles.

**Fungi** can be different sizes ranging from a single cell, like yeast (used to make bread rise), or other fungi such as moulds or toadstools.

British scientist Joseph Lister noticed that **surgery** patients often died from infection. He developed a method for keeping **microbes**, or germs, from entering the body during and after an operation. He introduced principles of cleanliness that remain important to surgery today.

*"Decomposition is the process by which the complex organic substances break-down into simpler substances by the action of microorganisms."*

*Air, moisture, light, temperature, and microbial growth cause food to decay.*

*Fruits and vegetables decay because of damage caused by microorganisms. Microorganisms such as bacteria, yeast and moulds need water and nutrients for growth, energy and reproduction.*



*Ways to preserve foods and reduce the decaying process are*

**Common Methods of Food Preservation**

1. Chilling.
2. Freezing.
3. Sugaring.
4. Salting.
5. Canning.
6. Vacuum Packing.

Helpful Microbes	Harmful Microbes
<b>Bacteria</b> – cheese	<b>Bacteria</b> – salmonella is a bacterium that can lead to food poisoning
Yeast – wine	Virus – chicken pox and flu are examples of viral diseases
<b>Bacteria</b> – yoghurt	Fungi – athlete's foot
Yeast – bread dough	<b>Bacteria</b> – plaque
Penicillium fungi - antibiotics	Fungi - mould