

## The 'hidden' world of microbes

After finding out about the life and work of Louis Pasteur many learners will be keen to find out more about the role of microbes in our daily lives and how our knowledge and understanding of this area has changed (and continues to change) over time. Other important figures involved in the history of microbiology, vaccines and disease could form a basis for further research.

Microorganisms are very tiny living things, so small that we cannot usually see them. Learners may be aware of the existence of microorganisms (microbes) and may even be able to name some of them. Many learners will associate microbes with disease but are usually surprised to discover that actually fewer than 5% of microbes cause potential harm to humans. Many microbes are helpful, some are even essential to our health.

Some learners may have suffered from a disease caused by a particular microbe. These common diseases could be researched and details about the symptoms and appropriate treatment could be included. A class survey of common diseases could be conducted *if appropriate*. The way that certain common diseases are spread could also be examined.

Some learners will have used microscopes and will be aware that there are some organisms that are too small to be seen with the naked eye. Although some microbes (some algae and fungi) are visible under a microscope many more are only visible under a scanning electron microscope. Images from these can be examined by the learners. Often the names given to microbes are associated with their colour or shape.



Image of viruses

Microorganisms include:

- Fungi
- Viruses
- Algae
- Bacteria
- Protozoa

Some common diseases caused by microbes:

- Influenza (Virus)
- Athlete's foot (Fungus)
- Chicken pox (Virus)
- Tooth decay (Bacterium)
- Food poisoning (Bacterium)
- Malaria (Protozoan)
- Ringworm (Fungus)
- Meningitis (Bacterium)



Image of bacteria