

BIOLOGY AS 90927 v3

Demonstrate understanding of biological ideas relating to micro-organisms Level 1, 4 Credits

This achievement standard involves demonstrating understanding of biological ideas relating to micro-organisms.

Micro-organisms: bacteria, fungi, and viruses.

- Structure of micro-organisms - bacteria, fungi, and viruses
- Culturing of micro-organisms – bacteria & fungi (agar) and viruses (host cells)
- Life processes of micro-organisms
 - bacteria and Fungi
 - nutrition
 - growth
 - respiration
 - reproduction
 - excretion
 - viruses
 - reproduction
 - why viruses cannot be considered as living (only reproduce using host cells and do not grow, feed, produce energy or excrete).
- Environmental factors that affect the life processes of micro-organisms
 - moisture
 - temperature
 - oxygen availability
 - presence of suitable nutrients
 - host species
 - chemicals
 - pH
 - toxins
 - antibiotics
 - disinfectants
 - competition (related to antibiotic action and resistance)
- Effects of environmental factors on the life processes of micro-organisms
 - nutrient cycling and role in ecosystems
 - food production and preservation
 - sewage treatment
 - food poisoning
 - disease in plants
 - microbial attack on everyday materials (helpful and harmful)
 - antibiotics, and resistance to antibiotics
 - genetic mutation in epidemiology (causes, distribution, and control of disease in populations)
- You must be familiar with the following terms
 - inoculate
 - extracellular digestion
 - enzyme
 - parasite
 - pathogen
 - toxin
 - decomposer
 - aerobic
 - anaerobic
 - hyphae
 - binary fission
 - spores
 - sporangium
 - antibiotic
 - vaccine