

Cambridge Lower Secondary Science Curriculum outline

Cambridge Lower Secondary offers a curriculum that schools can shape around how they want their students to learn. It develops learners who are confident, responsible, reflective, innovative and engaged. Cambridge Lower Secondary builds skills, knowledge and understanding in English, English as a Second Language, mathematics, science and Cambridge Global Perspectives™. It is for learners typically aged 11 to 14.

There is a curriculum framework for each Cambridge Lower Secondary subject. Each framework is organised into three stages corresponding to the first three years of secondary education. They reflect the teaching target for each year group and provide comprehensive learning objectives.

We organise the Cambridge Lower Secondary Science curriculum in four content areas or 'strands'. Each strand is further divided into 'sub-strands'.

Strand: Scientific enquiry

- Ideas and evidence.
- Plan investigative work.
- Obtain and present evidence.
- Consider evidence and approach.

Strand: Biology

- Plants.
- Humans as organisms.
- Cells and organisms.
- Living things in their environment.
- Variation and classification.

Strand: Chemistry

- States of matter.
- Material properties.
- Material changes.
- The Earth.

Strand: Physics

- Forces and motion.
- Energy.
- The Earth and beyond.
- Sound.
- Light.
- Magnetism.
- Electricity.

The Scientific enquiry objectives underpin Biology, Chemistry and Physics, which are focused on developing confidence and interest in scientific knowledge.

Environmental awareness and some history of science are also incorporated. The Cambridge Lower Secondary Science curriculum framework provides a solid foundation for further stages of education such as Cambridge IGCSE™.



Examples from the Biology strand for Stages 7 and 9 of this curriculum include:

Stage 7

Strand: Biology

Plants

- Recognise the positions, and know the functions of the major organs of flowering plants, e.g. root, stem, leaf.

Living things in their environment

- Describe how organisms are adapted to their habitat, drawing on locally occurring examples. Secondary sources can be used.
- Draw and model simple food chains.
- Discuss positive and negative influence of humans on the environment, e.g. the effect on food chains, pollution and ozone depletion.
- Discuss a range of energy sources and distinguish between renewable and non-renewable resources. Secondary sources can be used.

Variation and classification

- Understand what is meant by a species.
- Investigate variation within a species. Secondary sources can be used.
- Classify animals and plants into major groups, using some locally occurring examples.



Stage 9

Strand: Biology

Plants

- Define and describe photosynthesis, and use the word equation.
- Understand the importance of water and mineral salts to plant growth.
- Understand sexual reproduction in flowering plants, including pollination, fertilisation, seed formation and dispersal.

Living things in their environment

- Explain the ways in which living things are adapted to their habitats. Secondary sources can be used.
- Research the work of scientists studying the natural world. Secondary sources can be used.
- Explain and model food chains, food webs and energy flow.
- Explain the role of decomposers.
- Describe factors affecting the size of populations.
- Describe and investigate some effects of human influences on the environment.

Variation and classification

- Use and construct keys to identify plants and animals.
- Understand that organisms inherit characteristics from their parents through genetic material that is carried in cell nuclei.
- Describe how selective breeding can lead to new varieties.
- Discuss the work of Darwin in developing the scientific theory of natural selection.

How can I access the full curriculum framework?

Only schools offering Cambridge Lower Secondary can access the full curriculum framework.

- If you are a Cambridge Lower Secondary school, you can download the full curriculum framework from our password-protected Cambridge Lower Secondary support site
- If you are a Cambridge school and would like to offer Cambridge Lower Secondary, complete and return our *Additional Qualification Types* form.
- If you are not a Cambridge school and would like to find out more about Cambridge Lower Secondary, complete our *Expression of Interest* form at www.cambridgeinternational.org/join

Learn more! For details of Cambridge Lower Secondary, go to www.cambridgeinternational.org/lowersecondary or contact our Customer Services team at info@cambridgeinternational.org or call them on +44 1223 553554.

