

Sex, Flies and Smelly Sticky Tape, National Curriculum Fit to Key Stage 4

Summary

Key Stage 4 Single Knowledge Skills and Understanding

Sc1 1a,b,c 2a,d,e

Sc2 2f,g 4 a,b,c

Sc3 3a

Breadth of Study 1a,b,c 2a

Key Stage 4 Double Knowledge Skills and Understanding

Sc1 1a,b,c 2a,d,e

Sc2 2j,k 4 a,b,c

Sc3 1f,g,h,i 3a

Breadth of Study 1a,b,c 2a

Key Stage 4 Single

Sc1 Scientific Enquiry

Knowledge, skills and understanding

Teaching should ensure that 'scientific enquiry' is taught through contexts taken from the sections on 'life processes and living things', 'materials and their properties' and 'physical processes'.

Ideas and evidence in science

1) Students should be taught:

- a. how scientific ideas are presented, evaluated and disseminated [for example, by publication, review by other scientists]
- b. how scientific controversies can arise from different ways of interpreting empirical evidence [for example, Darwin's theory of evolution]

- c. ways in which scientific work may be affected by the contexts in which it takes place [for example, social, historical, moral, spiritual], and how these contexts may affect whether or not ideas are accepted

Investigative skills

2) Students should be taught to:

- a. use scientific knowledge and understanding to turn ideas into a form that can be investigated, and to plan an appropriate strategy
- d. consider key factors that need to be taken into account when collecting evidence, and how evidence can be collected in contexts [for example, fieldwork, surveys] in which the variables cannot readily be controlled
- e. decide the extent and range of data to be collected [for example, appropriate sample size for biological work] and the techniques, equipment and materials to use

Breadth of study

1) During the key stage, students should be taught the Knowledge, skills and understanding through:

- a. a range of domestic, industrial and environmental contexts
- b. considering ways in which science is applied in technological developments
- c. considering and evaluating the benefits and drawbacks of scientific and technological developments, including those related to the environment, personal health and quality of life, and those raising ethical issues

2) During the key stage, students should be taught to:

- a. use a wide range of scientific, technical and mathematical language, symbols and conventions, including SI units, balanced chemical equations and standard form to communicate ideas and develop an argument

Health and safety

- b. recognise that there are hazards in living things, materials and physical processes, and assess risks and take action to reduce risks to themselves and others.

Sc2 Life processes and living things

Knowledge, skills and understanding

Teaching should ensure that 'scientific enquiry' is taught through contexts taken from the sections on 'life processes and living things', 'materials and their properties' and 'physical processes'.

Humans as organisms

2) Students should be taught:

Hormones

- f. the way in which hormonal control occurs, including the effects of sex hormones
- g. some medical uses of hormones, including the control and promotion of fertility

Living things in their environment

4) Students should be taught:

- a. how the distribution and relative abundance of organisms in habitats can be explained using ideas of interdependence, adaptation, competition and predation↗
- b. how the impact of humans on the environment depends on social and economic factors, including population size, industrial processes and levels of consumption and waste
- c. about the importance of sustainable development.

Breadth of study

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Sc3 Materials and their Properties

Knowledge, skills and understanding

Teaching should ensure that 'scientific enquiry' is taught through contexts taken from the sections on 'life processes and living things', 'materials and their properties' and 'physical processes'.

Patterns of behaviour

3) Students should be taught:

- a. that there are approximately 100 elements and that all materials are composed of one or more of these

Breadth of study

1) During the key stage, students should be taught the Knowledge, skills and understanding through:

- a. a range of domestic, industrial and environmental contexts
- b. considering ways in which science is applied in technological developments
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- e. decide the extent and range of data to be collected [for example, appropriate sample size for biological work] and the techniques, equipment and materials to use☐

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- j. the way in which hormonal control occurs, including the effects of insulin and sex hormones
- k. some medical uses of hormones, including the control and promotion of fertility and the treatment of diabetes

5) Students should be taught:

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Sc3 Materials and their Properties

Knowledge, skills and understanding

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Classifying materials

1) Students should be taught:

Bonding

- f. that new substances are formed when atoms combine
- g. how covalent bonds are formed when atoms share electrons
- h. that substances with covalent bonds may form simple molecular structures or giant structures
- i. ways in which the physical properties of some substances with giant structures differ from those with simple molecular structures.

Patterns of behaviour

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