
CURRICULUM CONTENT

1 Life support

1.1 Staying alive

- Respiration in cells
- the role of the blood

1.2 Breathing

- Breathing
- Gas exchange

1.3 Delivering supplies

- Circulation and blood vessels

1.4 Keeping fit

- Fitness

1.5 Getting some food in

- Digestion

1.6 Using nutrients

- Nutrients

1.7 Making choices

- The psychology of eating

2 Keeping healthy

2.1 Microbes

- Bacteria
- Virus
- Fungi

2.2 Natural defenses

- Dealing with microbes
- White blood cells (immune system)
- AIDS

2.3 Avoiding microbes

- Disinfectants
- Antiseptics
- Personal hygiene

2.4 Boosting your immunity

- Vaccination and boosting immunity
- Antibiotics

2.5 Changing your mind

- Cigarettes, cannabis, and alcohol

2.6 Repairing your body

- Stem cells

3 People and environment

3.1 Earth

- Environments and adaptations

3.2 Survival

- Competition and adapting to change
- Endangered species

3.3 On safari

- Food webs, photosynthesis and biomass

3.4 Passing on energy

- Pyramids of number and biomass
- Respiration

3.5 The cost of food

- How we get our food
- Effects on the environment

3.6 Living for the future

- Sustainability
- Biofuels and biodiesels

4.1 Sociable animals

- Social behavior

4.2 Changing behavior

- Learned behavior
- Behavior in captivity

4.3 Improving pets

- Selective breeding

4.4 Making improvements

- Genetic engineering

4.5 Choices

- Food choices

5 The periodic table

5.1 Life, death and beauty

- Elements and compounds
- Using three different metals

5.2 Organizing elements

- The periodic table
- Metals and non-metals

5.3 The noble gases

- Noble gas properties
- Using noble gases

5.4 The halogens

- Properties of halogens
- Using halogens and their compounds

5.5 Four vital non-metals

- Elements in your body
- Using carbon, hydrogen, nitrogen and oxygen

5.6 The strange magic of silicon

- Silicon and its compounds
- Semi-metals

5.7 The periodic table

- Theories for organizing elements

6 Inside materials

6.1 Inside gases

- Why gases spread out
- Gas particles

6.2 Inside our atmosphere

- The gases in the atmosphere
- How the atmosphere changes

6.3 More on molecules

- Number of atoms in molecules

6.4 Polymers

- Polymer properties, uses and structure

6.5 Inside solids

- Reasons for solid properties

6.6 Reduce, reuse, recycle

- Recycling plastic bags
- Biodegradable bags

7 Metal reactions

7.1 Metals

- Metal uses and properties
- Alloys

7.2 Metals and water

- How different metals react with water

7.3 Metals and acids

- Metal and acid reactions
- The reactivity series

7.4 More on the reactivity series

The reactivity series and:

- Burning metals
- The periodic table

7.5 Tin

- Using and extracting tin

8.1 Volcano!

- Volcanic eruptions
- Investigating volcanoes

8.2 Igneous rocks

- Properties of igneous rocks
- How igneous rocks form

8.3 Finding fossils

- Fossils and their rocks
- Sedimentary rocks

8.4 Sedimentary rocks

- How sedimentary rocks form
- Types of sedimentary rocks

8.5 Metamorphic rocks

- How metamorphic rocks form
- Metamorphic rock properties

8.6 The rock cycle

- Evidence for rock recycling
- The rock cycle

9 Heating and cooling

9.1 Hot and cold

- Feeling hot and cold
- Heat and temperature
- Heat flow

9.2 Thermal conduction

- Thermal conduction and insulation

9.3 Convection

- How heat energy is transferred in liquids and gases
- Convection currents and their uses

9.4 Radiating

- Infrared radiation

9.5 Conserving energy

- Reducing heat loss
- Conserving energy
- Sankey diagrams

9.6 Space shuttle

- The development of the space shuttle
- Problems with re-entry

10 Light

10.1 What is light?

- What light is
- How light travels
- How we see light

10.2 All about mirrors

- Reflection in a plain mirror
- Reflection from smooth and rough surfaces

10.3 Bending light

- Refraction of light
- Total internal reflection

10.4 Light change bending

- Dispersions of light

10.5 Colour

- How we see colour
- Mixing coloured lights

10.6 Using light

- What is laser?
- Using lasers

11 Sound

11.1 Sounds like

- How vibrations cause sound
- How we hear

11.2 How loud

- Loudness of sound
- How to reduce sound levels

11.3 Highs and lows

- Frequency and pitch
- Audible range

11.4 There and back

- Echoes
- Ultrasonic scanning
- Uses of ultrasound

11.5 The sound of music

- How sound is produced by musical instruments
- Musical notes

11.6 Faster than sound

- The speed of sound and the speed of light
- Travelling faster than the speed of sound

12 Moving around**12.1 See-saw**

- Turning forces
- Using levers as machines

12.2 Swinging

- Time periods
- Using pendulums

12.3 Roundabout

- What keeps things moving in a circle
- Centripetal force

12.4 Free fall

- Acceleration due to gravity
- Terminal velocity

12.5 Winter sports

- What causes pressure

12.6 Thrill rides

- The effect of acceleration and deceleration on apparent weight

