
CURRICULUM CONTENT

1 Cells

1.1 Seeing life

- Microscopic
- How we use them

1.2 Zooming in

- Cells
- Differences between animal and plant cells

1.3 Staying alive

- Life processes
- Cells, tissues and organs

1.4 Right for the job

- Specialized cells

1.5 Extreme cells

- Nerves
- How we make sense of the world around us

1.6 Cell trouble?

- Using microscopes to diagnose illness
- What red blood cell counts can tell us

3 Differences

3.1 Identifying differences

- Variation
- Biometrics

3.2 What makes us different?

- Inherited variation

3.3 Growing differences

- Environmental variation

3.4 Size matters

- Continuous variation
- Correlations

3.5 Knowing differences

- Animal behavior

3.6 Olympic dreams

- How variation affects athletic ability

4 Classification

4.1 Taking stock

- Species
- What affects their numbers

4.2 Grouping animals

- Classification
- Invertebrates

4.3 Vertebrates

- Vertebrates

4.4 Precious plants

- Plant groups
- Naming species

4.5 A new species?

- How evidence can support scientific ideas or prove them wrong

5 Acid reactions

5.1 Acids and alkalis

- Acids and alkalis
- Uses of acids and alkalis

5.2 The pH scale

- The pH scale
- Measuring pH
- Concentrated and dilute acids and alkalis

5.3 Neutralization

- How acids and alkalis neutralize each other
- Useful neutralization

5.4 Acids and carbonates

- How carbonates react with acids
- Testing for carbon dioxide

5.5 Acids and metals

- How acids react with metals
- Testing for hydrogen

5.6 Acids: the full story

- Salts from reactions with acids
- Writing word equations

5.7 Using pH and neutralization

- Why water pH matters to humans and animals

6 Particles

6.1 Solids, liquids, and gases

- Particles in solids, liquids and gases
- Scientific evidence and theories

6.2 Spreading out

- Squashing solids, liquids and gases
- Particles spreading out

6.3 Heating and cooling

- Changes of state
- Expansion and contraction

6.4 Dissolving

- Speeding up dissolving
- Finding the masses of solutions
- Saturated solutions

6.5 Gas pressure and density

- Gas pressure
- Density of solids, liquids and gases

6.6 Using particles

- Using particles to explain things that happen

7 Elements and compounds

7.1 Elements

- Elements
- What's inside elements

7.2 More about elements

- Metals
- Non – metals

7.3 Compounds

- Compounds
- Differences between compounds and elements

7.4 Mixtures

- Useful mixtures
- Differences between mixtures and compounds

7.5 Elements and compounds

- Elements, compounds and mixtures that are vital for life

8 Chemical reactions

8.1 What are chemical reactions?

- What chemical reactions are
- How to recognize them
- How they're different to reversible changes

8.2 Reversible changes

Separating mixtures made in reversible changes by:

- Distillation
- Chromatography

8.3 Burning

- What happens when things burn
- Word equations

8.4 Burning hydrocarbons

- Using hydrocarbons
- Burning hydrocarbons
- Finding fuels

8.5 More useful chemical reactions

- Useful chemical reactions

8.6 Global warming

- What causes global warming
- What its effects are

9 Electricity and magnetism

9.1 Using electricity

- How circuits work
- How to draw circuit diagrams
- Series circuits

9.2 Electric current

- Series and parallel circuits
- Electric current
- How to measure electric current

9.3 All about voltage

- What 'voltage' means
- The difference between current and voltage

9.4 Magnetism

- Properties of magnets
- Magnetic materials
- Magnetic fields

9.5 Electromagnets

- The magnetic effect of an electric current
- How to make electromagnets
- How to change the strength of an electromagnet
- Uses of electromagnets

9.6 Discovering electricity

- Creative thinking in science
- Using evidence to test ideas
- Developing theories

10.1 What is energy?

- Some forms of energy
- Stored energy
- Energy changes

10.2 Food for thought

- How living things need energy
- How we measure energy
- Getting the energy balance right
- Food and exercise

10.3 More energy

- Food chains
- Fossil fuels
- Energy transfers

10.4 Storing energy

- Potential energy
- Different forms of potential energy

10.5 Energy supplies

- Non – renewable and renewable sources of energy

10.6 The energy crises

- Saving energy
- The energy crisis

11 Forces**11.1 Forces, forces everywhere!**

- Friction
- Gravity
- Measuring forces

11.2 A balanced act!

- Balanced and unbalanced forces
- Speeding up and slowing down

11.3 The work of friction

- Where friction is a nuisance
- Why friction is useful
- How to reduce friction
- Streamlining

11.4 Bouncing up

- Weight and mass
- Floating and sinking
- Stretching
- Reading graphs

11.5 Faster and slower

- How forces affect speed
- Showing speed on a graph
- How to calculate speed

11.6 Forces at work

- Forces in the fitness centre
- Forces on the building site

12 Force

12.1 Early days

- Day time and night time
- The seasons of the year

12.2 Our bit of space

- The planets in our Solar System
- Some of the other bodies orbiting the Sun

12.3 What goes around

- Different orbits
- Eclipses of the Sun and Moon

12.4 GPS and TV

- Uses of artificial satellites
- Types of orbit

12.5 Where did it all begin?

- What's in the Universe
- How the Universe started

12.6 Is anybody out there?

- How we look at objects in space
- Recent discoveries in space

