



Week Learning Objectives

1 7B Reproduction

7B.1 Patterns of reproduction

- 1) To be able to describe pollination and fertilisation in flowering plants.
- 2) To be able to describe fertilisation as the fusion of two sex cell nuclei.
- 3) To be able to describe differences between fertilisation in plants and animals.
- 4) To be able to explain why some eggs have shells and others don't.
- 5) To be able to account for the variation in the amount of food stored in the eggs of different animals.

7B.2 Reproduction and development of humans

- 1) To be able to describe the function of the main parts of the human reproductive system.
- 2) To be able to describe fertilisation in humans.
- 3) To be able to explain the special features of egg and sperm cells.
- 4) To be able to describe some key features of the development of a baby.
- 5) To use the terms 'embryo' and 'fetus' correctly.
- 6) To be able to explain that sex cells carry inherited information.

7B.3 The menstrual cycle

- 1) To be able to describe the changes of the menstrual cycle.
- 2) To know that menstruation stops during pregnancy.
- 3) To know that the timing of ovulation is linked to the cycle of menstruation and uterus lining repair.
- 4) To know that hormones control the menstrual cycle.

2 7B.4 The uterus as home to the developing baby

- 1) To be able to explain the functions of the main parts inside the pregnant uterus.
- 2) To be able to describe the passage of oxygen, food, carbon dioxide and other waste products across the placenta.
- 3) To be able to name some harmful substances that can pass across placenta.
- 4) To be able to explain some of viruses, cigarette smoke and other harmful things on the developing foetus.

7B.5 Birth and care of the baby

- 1) To be able to describe what happens during birth.
- 2) To be able to explain the advantages of human breast milk.
- 3) To be able to explain some aspects of baby care.

7B.6 How human change as they grow

- 1) To be able to label a diagram of the life cycle.
- 2) To be able to contrast human appearance at different stage of the life cycle.
- 3) To be able to describe secondary sexual characteristics in boys and girls.
- 4) To understand that it is normal for different people develop at different rates.

3 **7C Environment and feeding relationships**

7C.1 Habitat

- 1) To be able to recognise that habitats vary.
- 2) To be able to label a tadpole to illustrate how it is adapted to its habitat.
- 3) To be able to describe how some familiar organisms are suited to the habitat in which they live.
- 4) To be able to relate differences between habitats to the organisms found in them.
- 5) To be able to describe some adaptations of organisms to their environment.
- 6) To be able to explain why a range of habitats is needed in a community.

4 **7C.2 Changing environmental conditions**

- 1) To be able to relate daily and seasonal environmental changes to the activity of plants and animals.
- 2) To be able to list ways to measure physical factors in a habitat, e.g. temperature.
- 3) To be able to outline some ideas for investigating the activity of an invertebrate.
- 4) To be able to plan an investigation of the activity of an invertebrate.
- 5) To be able to describe some daily changes in physical factors to plants and relate them to animal activity.
- 6) To be able to describe some ways that living things are adapted to seasonal change.
- 7) To be able to give examples of other ways of investigating animal behaviour.

7C.3 Feeding relationships

- 1) To be able to show the interdependence of plants and animals in feeding relationships.
- 2) To be able to describe simple food chains.
- 3) To be able to combine food chains into food webs.
- 4) To be able to identify a food chain in a food web.
- 5) To be able to identify some animals in a web that compete for the same food.
- 6) To be able to recognise feeding levels in chains and webs.
- 7) To be able to predict and explain the effect of a change in one part of the food web on other parts of the web.

5 **7D Variation and classification**

7D.1 The same but different

- 1) To be able to describe variations of characteristics in living things.
- 2) To be able to describe similarities and differences between living things.
- 3) To be able to use the terms species and variation correctly.

7D.2 The causes of variation

- 1) To be able to recognise how individuals are like but not identical to their parents.
- 2) To be able to describe the way offspring of the same parents vary.
- 3) To be able to list some examples of inherited and environmental variations.
- 4) To be able to explain patterns of inheritance within families.
- 5) To be able to explain that some variations are a result of inherited and environmental factors.

7D.3 Describing living things

- 1) To be able to describe living things in an appropriate style, depending on context.
- 2) To be able to state some differences between similar species.
- 3) To be able to describe similarities and differences between living things.
- 4) To be able to select technical vocabulary to describe animals

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7D.4 Sorting things into groups

- 1) To be able to explain how and why scientists sort things into groups.
- 2) To be able to explain reasons for groupings.
- 3) To be able to compare different ways of grouping and recognise that some are better than others.
- 4) To be able to explain that modern classification is based on earlier examples from different cultures.

7D.5 How scientists classify living things

- 1) To be able to describe some features of animals.
- 2) To be able to list the names and main features of the main vertebrate groups.
- 3) To be able to list the differences between vertebrates and invertebrates.
- 4) To be able to describe some differences between animals.
- 5) To be able to suggest detailed features to use in subdividing one invertebrate group.
- 6) To be able to explain why scientists use internationally recognised systems of classification and naming of living things.

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Holidays

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7L The Solar System and beyond

7L.1 The Earth in space

- 1) To be able to explain how the relative motion of the Sun and the Earth cause days and years.
- 2) To be able to describe how the Earth spins.
- 3) To be able to describe how the Earth moves around the Sun.
- 4) To be able to explain why we have leap years.

7L.2 The four seasons

- 1) To be able to describe how the temperature changes with the season.
- 2) To be able to describe how the number of hours of daylight changes with the season.
- 3) To be able to explain how the tilt of the Earth's axis causes seasons.

7L.3 Lights in space

- 1) To be able to describe the difference between a star and a planet.
- 2) To be able to classify objects as luminous or not.
- 3) To be able to use the evidence of the phases of the Moon to explain how long it takes for the Moon to orbit the Earth.

7L.4 The Sun and the Moon

- 1) To be able to describe a partial solar eclipse.
- 3) To be able to sequence pictures and descriptions of a solar eclipse.
- 4) To be able to explain how the position of the Moon causes a lunar eclipse.

7L.5 The Solar System

- 1) To be able to name the planets in the Solar System.
- 2) To be able to determine whether an object is a star or a planet by its motion.

7L.HSW Changing your point of view

- 1) To be able to describe the role of scientists in developing our view of the Universe.
- 2) To be able to describe some uses for satellites.
- 3) To be able to explain why a space telescope is better than one on Earth.
- 4) To be able to describe why the observations of Galileo got him into trouble with the Roman Catholic Church.

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7I Energy resources

7I.1 Energy and fuels

- 1) To be able to name different forms of energy.
- 2) To be able to name the unit used to measure energy.
- 3) To be able to describe how energy makes things happen.
- 4) To be able to describe some everyday energy transfers.
- 5) To be able to describe how we release energy from fuels.
- 6) To be able to explain that, in some energy transfers, more than one type of energy can be produced.

7I.2 Fossil fuels

- 1) To be able to describe how fossil fuels are made.
- 2) To be able to explain the meaning by non-renewable.
- 3) To be able to explain where fossil fuels get their energy.
- 4) To be able to describe some advantages of each fossil fuel.
- 5) To be able to describe some disadvantages of each fossil fuel.
- 6) To be able to explain why it is important to save fuel.
- 7) To be able to compare fossil fuels to nuclear power.

7I.3 Renewable energy resources

- 1) To be able to name a range of renewable energy resources.
- 2) To be able to describe renewable energy resources.
- 3) To be able to explain why we need renewable energy resources.
- 4) To be able to explain the difference between the terms renewable and non-renewable.
- 5) To be able to explain some advantages and disadvantages of renewable energy resources.
- 6) To be able to explain how renewable energy resources can be used to generate electricity.

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7I.4 Living things and energy

- 1) To be able to describe where animals get their energy.
- 2) To be able to describe the energy needed for various activities.
- 3) To be able to describe where the energy in food originally came from.
- 4) To be able to convert energy in joules into kilojoules.
- 5) To be able to explain what happens if you use more energy than you get from foods.
- 6) To be able to explain how energy travels through a food chain.
- 7) To be able to compare the energy released by different foods.
- 8) To be able to calculate the total energy used in a day.

7I.HSW Ethical problems

- 1) To be able to state some advantages and disadvantages of wind energy.
- 2) To be able to state an advantage of using hydrogen as an energy source.
- 3) To be able to suggest some solutions to problems with renewable energy sources.
- 4) To be able to describe disadvantages of power lines.
- 5) To be able to explain why some people don't want renewable energy resources near to where they live.

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7J Electrical circuits

7J.1 Switches, circuits and symbols

- 1) To be able to describe how a circuit must be made so that a bulb will light up.
- 2) To be able to recognise circuits which are connected correctly.

- 3) To be able to describe how a switch works.
- 4) To be able to recognise circuit symbols.
- 5) To be able to explain the difference between a cell and a battery.
- 6) To be able to find faults in circuits which do not work.

7J.2 Inside a circuit

- 1) To be able to describe how to connect two bulbs in series.
- 2) To be able to describe how electric current flows around a series circuit.
- 3) To be able to describe how to connect an ammeter to measure electric current.
- 4) To be able to use the units of amps when measuring electric current.
- 5) To be able to describe the pattern for the flow of electric current in a series circuit.

7J.3 Energy for the circuit

- 1) To be able to describe the job of a cell in a circuit.
- 2) To be able to explain that a battery is two or more cells joined together.
- 3) To be able to explain that a cell is made of chemicals that react to make current flow.
- 4) To be able to describe what the voltage of a battery tells you.
- 5) To be able to describe how the components in an electric circuit do similar jobs to the components in a water circuit.
- 6) To be able to relate the voltage of a battery to the amount of energy it supplies.

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7J.4 Parallel circuits

- 1) To be able to describe how bulbs are connected when in parallel.
- 2) To be able to describe how the electric current flows around a parallel circuit.
- 3) To be able to describe some advantages of connecting bulbs in parallel.
- 4) To be able to compare series circuits and parallel circuits.
- 5) To be able to explain how to calculate the electric current at one point in a parallel circuit.
- 6) To be able to explain why household lights are connected in parallel circuits.

7J.5 Using electricity safely

- 1) To be able to describe some of the common dangers when using electricity.
- 2) To be able to describe how a fuse protects a circuit.
- 3) To be able to recall the colours of a wire in a plug and which terminal they are connected to.
- 4) To be able to explain why it is dangerous to use a fuse with too high a current rating.
- 5) To be able to calculate the current flowing and use this to choose the appropriate fuse.

7J.HSW Electricity: the pluses and the minuses

- 1) To be able to describe some of the problems with using so much electricity.
- 2) To be able to explain how hazards can be reduced.
- 3) To be able to explain what factors you need to consider when choosing the supply voltage.

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7K Forces and their effects

7K.1 About forces

- 1) To be able to identify forces as either pushes or pulls.
- 2) To be able to describe the effect of forces on an object.
- 3) To be able to describe the effect of balanced forces on stationary objects.
- 4) To be able to state the unit used to measure force.
- 5) To be able to name the instrument used to measure force.

- 6) To be able to describe the effect of balanced forces on moving objects.
- 7) To be able to explain how a newtonmeter works.
- 8) To be able to explain why balanced forces have the effect they do on moving objects.
- 9) To be able to calculate the effect of combined forces acting on an object.

7K.2 Weight

- 1) To be able to describe what we mean by weight.
- 2) To be able to describe how to measure weight.
- 3) To be able to describe what we mean by gravity.
- 4) To be able to explain why gravitation force is less on the Moon than on the Earth.
- 5) To be able to describe what we mean by mass.
- 6) To be able to compare the masses and the weights of different objects.
- 7) To be able to explain why the force of a person's weight doesn't make them fall through the floor.

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7K.3 Friction

- 1) To be able to describe what we mean by friction.
- 2) To be able to describe examples of where friction is useful in everyday life.
- 3) To be able to describe examples of where friction is not helpful in everyday life.
- 4) To be able to explain that friction always acts in the opposite direction to the movement.
- 5) To be able to explain how friction can be reduced.
- 6) To be able to describe drag as friction when things move through air.
- 7) To be able to describe examples of where drag is useful.
- 8) To be able to describe how we can reduce drag.
- 9) To be able to explain how the size of the friction force changes with the size of the applied force.
- 10) To be able to explain how streamlining reduces drag.

7K.4 Moving and stopping

- 1) To be able to describe how brakes use friction.
- 2) To be able to describe how to calculate speed.
- 3) To be able to describe factors that affect stopping distance.
- 4) To be able to explain why it is important to have good tread on tyres.
- 5) To be able to use different units for speed.
- 6) To be able to use a distance–time graphs to describe how objects are moving.
- 7) To be able to draw distance time–graphs to depict journeys.

7K.HSW Gravity

- 1) To be able to describe how Galileo used experiments to prove his ideas.
- 2) To be able to describe how Galileo's ideas were proved correct by Neil Armstrong.
- 3) To be able to explain how Newton used the idea of gravity to explain why things fall.
- 4) To be able to explain why new scientific ideas aren't always of benefit to people.
- 5) To be able to explain how later scientific evidence proved early ideas developed by Einstein.

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Revision

