Cells

Lesson	Developing	Secure	Extending
B1 1.1 Observing cells	I can state what a cell is. ☐	I can describe what a cell is. ☐	I can explain what all living organisms are made of. ☐
	I can describe how to use a microscope to observe a cell. ☐	I can explain how to use a microscope to observe a cell. ☐	I can explain what each part of the microscope does and how it is used. ☐
B1 1.2 Plant and animal cells	I can identify one similarity and one difference between a plant and an animal cell. ☐	I can describe the similarities and differences between plant and animal cells. ☐	I can explain the similarities and differences between plant and animal cells. ☐
	I can match some components of a cell to their functions. ☐	I can describe the functions of the components of a cell. ☐	I can explain the functions of the components of a cell by linking them to life processes. ☐
B1 1.3 Specialised cells	I can name some examples of specialised animal cells. ☐	I can describe examples of specialised animal cells. ☐	I can describe examples of specialised animal cells, linking structure and function. ☐
	I can name some examples of specialised plant cells. ☐	I can describe examples of specialised plant cells. ☐	I can describe examples of specialised plant cells, linking structure and function. ☐
B1 1.4 Movement of substances	I can identify substances that move into or out of cells. ☐	I can name some substances that move into and out of cells. ☐	I can explain which substances move into and out of cells. ☐
	I can state simply what diffusion is. ☐	I can describe the process of diffusion. ☐	I can explain the process of diffusion. ☐
B1 1.5 Unicellular organisms	I can name an example of a unicellular organism. ☐	I can describe what a unicellular organism is. ☐	I can explain what a unicellular organism is and give detailed examples. ☐
	I can identify some structures in an amoeba. ☐	I can describe the structure of an amoeba. ☐	I can describe the structure and function of an amoeba. ☐
	I can identify some structures in a euglena. ☐	I can describe the structure of a euglena. ☐	I can describe the structure and function of a euglena. ☐

Reproduction

Lesson	Developing	Secure	Extending
B1 3.1 Adolescence	I can state the definitions for adolescence and puberty. ☐	I can state the difference between adolescence and puberty. ☐	I can explain the difference between adolescence and puberty. ☐
	I can state the changes of the bodies of boys and girls during puberty. ☐	I can describe the main changes which take place during puberty. ☐	I can explain the main changes that take place during puberty. ☐
B1 3.2 Reproductive systems	I can name the main structures of the male and female reproductive structures. ☐	I can describe the main structures in the male and female reproductive systems. ☐	I can explain how different parts of the male and female reproductive systems work together to achieve certain functions. ☐
	I can state a function of the main structures of the male and female reproductive systems. ☐	I can describe the function of the main structures in the male and female reproductive systems. ☐	I can explain the adaptations of some of the main structures that help them function. ☐
B1 3.3 Fertilisation and implantation	I can state the definitions of gametes. ☐	I can describe the structure and function of gametes. ☐	I can compare the male and female gametes. ☐
	I can state what is meant by fertilisation. ☐	I can describe the process of fertilisation. ☐	I can explain the sequence of fertilisation and implantation. ☐
B1 3.4 Development of a fetus	I can state the definition of gestation. ☐	I can describe what happens during gestation. ☐	I can describe accurately the sequence of events during gestation. ☐
	I can state how long a pregnancy lasts. ☐	I can describe what happens during birth. ☐	I can explain in detail how contractions bring about birth. ☐

Reproduction

Lesson	Developing		Secure		Extending	
B1 3.5 The menstrual cycle	I can state a simple definition of the menstrual cycle.	☐	I can state what the menstrual cycle is.	☐	I can explain the role of the menstrual cycle in reproduction.	☐
	I can state the main stages in the menstrual cycle.	☐	I can describe the main stages of the menstrual cycle.	☐	I can describe the stages of the menstrual cycle as a timed sequence of events.	☐
B1 3.6 Flowers and pollination	I can name the parts of a flower.	☐	I can identify the main structures in a flower.	☐	I can explain how the structures of the flower are adapted to their function.	☐
	I can state what is meant by pollination.	☐	I can describe the process of pollination.	☐	I can explain the role of pollination in plant reproduction.	☐
	I can name two methods of pollination.	☐	I can describe the differences between wind pollinated and insect pollinated plants.	☐	I can explain the processes of wind and insect pollination comparing the similarities and differences between the two.	☐
B1 3.7 Fertilisation and germination	I can state what is meant by fertilisation in plants.	☐	I can describe the process of fertilisation in plants.	☐	I can explain the process of fertilisation in plants, explaining the role of each of the parts involved in the process.	☐
	I can state what seeds and fruit are.	☐	I can describe how seeds and fruits are formed.	☐	I can explain how the germination of seeds occurs.	☐
B1 3.8 Seed dispersal	I can state what is meant by seed dispersal.	☐	I can state the ways that seeds can be dispersed.	☐	I can explain why seeds are dispersed.	☐
	I can name the methods of seed dispersal.	☐	I can describe how a seed is adapted to its method of dispersal.	☐	I can explain how the adaptations of seeds aid dispersal.	☐

The Particle Model

Lesson	Developing	Secure	Extending
C1 1.1 The particle model	I can state that materials are made up of particles. ☐	I can describe how materials are made up of particles. ☐	I can explain how a range of materials are made up of particles. ☐
	I can match particle models to the properties of a material. ☐	I can use the particle model to explain why different materials have different properties. ☐	I can evaluate particle models that explain why different materials have different properties. ☐
C1 1.2 States of matter	I can identify a substance in its three states. ☐	I can describe the properties of a substance in its three states. ☐	I can discuss the properties of a range of substances in their three states. ☐
	I can match properties of the three states of matter to the name of the state. ☐	I can use ideas about particles to explain the properties of a substance in its three states. ☐	I can use ideas about how fast particles are moving to explain the properties of a substance in its three states. ☐
C1 1.4 Boiling	I can describe boiling as a change of state. ☐	I can use the particle model to explain boiling. ☐	I can use the particle model and latent heat to explain boiling. ☐
	I can recognise that different substances boil at different temperatures. ☐	I can explain why different substances boil at different temperatures. ☐	I can explain why different substances boil at different temperatures using particle diagrams and latent heat. ☐
C1 1.5 More changes of state	I can recall changes of state involving gases. ☐	I can describe changes of state involving gases. ☐	I can explain what occurs during sublimation and condensation using particle models. ☐
	I can describe how particles change in their arrangements during evaporation, condensation, and sublimation. ☐	I can use a particle model to explain evaporating, condensing, and subliming. ☐	I can explain, using particle models, the differences between evaporation and boiling. ☐

The Particle Model

Lesson	Developing	Secure	Extending
C1 1.6 Diffusion	I can describe examples of diffusion. ☐	I can use the particle model to explain diffusion. ☐	I can use particle diagrams to explain how diffusion occurs and the factors that affect it. ☐
	I can describe the movement of particles in diffusion. ☐	I can describe evidence for diffusion. ☐	I can describe why diffusion is faster at higher temperatures, using the concept of how fast particles are moving. ☐
C1 1.7 Gas pressure	I can describe simply what gas pressure is. ☐	I can use the particle model to explain gas pressure.	I can use particle diagrams to explain how gas pressure is created. ☐
	I can state examples of gas pressure in everyday situations. ☐	I can describe the factors that affect gas pressure. ☐	I can explain, using particle diagrams, what happens to gas pressure as the temperature increases. ☐

Chemical Reactions

Lesson	Developing	Secure	Extending
C1 3.1 Chemical reactions	I can state what a chemical reaction is. ☐	I can describe what happens to atoms in chemical reactions. ☐	I can describe in detail what happens to particles in a chemical reaction. ☐
	I can state what happens to the reactants in a chemical reaction. ☐	I can explain why chemical reactions are useful. ☐	I can compare and contrast physical and chemical reactions. ☐
	I can state some signs of a chemical reaction. ☐	I can compare chemical reactions to physical changes. ☐	I can explain the differences in physical and chemical changes. ☐

Lesson	Developing	Secure	Extending
C1 3.2 Word equations	I can identify reactants and products for a given reaction.	I can identify reactants and products in word equations.	I can convert word equations into formula equations.
	I can complete simple word equations.	I can write word equations to represent chemical reactions.	I can construct a formula equation for a reaction without the use of word equations.
C1 3.3 Burning fuels	I can state what a fuel is.	I can predict products of combustion reactions.	I can construct formula equation for some combustion reactions.
	I can state what fuels react with when they burn.	I can categorise oxidation reactions as useful or not.	I can explain the benefits and disadvantages of some oxidation reactions.
C1 3.4 Thermal decomposition	I can state simply what a decomposition reaction is.	I can identify decomposition reactions from word equations.	I can write formula equations for decomposition reactions.
	I can describe the products of a decomposition reaction.	I can use a pattern to predict products of decomposition reactions.	I can compare decomposition reactions with combustion reactions.
C1 3.5 Conservation of mass	I can state what happens to the mass of the reactants and products in chemical reactions.	I can explain conservation of mass in chemical reactions.	I can apply the conservation of mass in unfamiliar situations, giving a reasoned explanation.
	I can describe how to find out the mass of a reactant or product.	I can calculate masses of reactants and products.	I can predict and explain whether the mass within a reaction vessel will stay the same from word and formula equations.

C1 3.6 Exothermic and endothermic	I can state simply what happens in endothermic and exothermic changes.	I can describe the characteristics of exothermic and endothermic changes.	I can apply temperature changes to exothermic and endothermic changes in unfamiliar situations.
	I can identify a reaction as endothermic and exothermic.	I can classify changes as exothermic and endothermic.	I can begin considering endothermic and exothermic changes in terms of energy transfers to and from the surroundings.

Acids and Alkalis

Lesson	Developing	Secure	Extending
C1 4.1 Acids and alkalis	I can name some common properties of acids and alkalis. ☐	I can compare the properties of acids and alkalis. ☐	I can compare the different particles found in acids and alkalis. ☐
	I can describe, in simple terms, what the key words 'concentrated' and 'dilute' mean. ☐	I can describe the differences between concentrated and dilute solutions of an acid. ☐	I can explain what 'concentrated' and 'dilute' mean, in terms of the numbers of particles present. ☐
C1 4.2 Indicators and pH	I can describe broad colours of universal indicator for acids, alkalis, and neutral solutions. ☐	I can use the pH scale to measure acidity and alkalinity. ☐	I can use a variety of indicators to measure acidity and alkalinity and explain how they work. ☐
	I can state that indicators will be different colours in acids, alkalis, and neutral solutions. ☐	I can describe how indicators categorise solutions as acidic, alkaline, or neutral. ☐	I can categorise substances as strong or weak acids and alkalis using pH values. ☐

C1 4.3 Neutralisation	I can state simply what happens during a neutralisation reaction.	I can describe how pH changes during neutralisation reactions.	I can interpret a graph of pH changes during a neutralisation reaction.
	I can give one example of a neutralisation reaction.	I can state examples of useful neutralisation reactions.	I can explain why neutralisation reactions are useful in the context of specific examples.
C1 4.4 Making salts	I can state the type of chemical made when an acid and alkali react.	I can describe what a salt is.	I can explain what salt formation displaces from the acid.
	I can match the type of salt that will form from the type of acid used.	I can predict the salts formed when acids react with metals or bases.	I can predict the formulae for products of reactions between acids and metals, or acids and bases.

Forces

Lesson	Developing	Secure	Extending
P1 1.1 Introduction to forces	I can identify some forces acting on objects in everyday situations. ☐	I can explain what forces do. ☐	I can explain the difference between contact and non-contact forces. ☐
P1 1.2 Squashing and stretching	I can state an example of a force deforming an object. ☐	I can describe how forces deform objects. ☐	I can explain how forces deform objects in a range of situations. ☐
	I can use Hooke's Law to identify proportional stretching. ☐	I can use Hooke's Law to predict the extension of a spring. ☐	I can apply Hooke's Law to make quantitative predictions with unfamiliar materials. ☐

P1 1.3 Drag forces and friction	I can identify examples of drag forces and friction. ☐	I can describe the effect of drag forces and friction. ☐	I can explain the effect of drag forces and friction in terms of forces. ☐
	I can describe how drag forces and friction arise. ☐	I can explain why drag forces and friction arise. ☐	I can explain why drag forces and friction slow things down in terms of forces. ☐
P1 1.4 Forces at a distance	I can identify gravity as a force that acts at a distance. ☐	I can describe the effect of a field. ☐	I can apply the effects of forces at a distance to different fields. ☐
	I can state that gravity changes with distance. ☐	I can describe the effect of gravitational forces on Earth and in space. ☐	I can explain how the effect of gravity changes moving away from Earth. ☐
P1 1.5 Balanced and unbalanced	I can identify familiar situations of balanced and unbalanced forces. ☐	I can describe the difference between balanced and unbalanced forces. ☐	I can explain the difference between balances and unbalances forces. ☐
	I can identify when the speed or direction of motion of an object changes. ☐	I can explain why the speed or direction of motion of objects can change. ☐	I can explain why the speed or direction of motion of objects can change using force arrows. ☐

Space

Lesson	Developing	Secure	Extending
P1 4.1 The night sky	I can name some objects seen in the night sky. ☐	I can describe the objects you can see in the night sky. ☐	I can use the speed of light to describe distances between astronomical objects. ☐
	I can place some objects seen in the night sky in size order. ☐	I can describe the structure of the Universe. ☐	I can describe the structure of the Universe in detail, in order of size and of distance away from the Earth. ☐

P1 4.2 The Solar System	I can name some objects in the Solar System. ☐	I can describe how objects in the Solar System are arranged. ☐	I can explain how the properties and features of planets are linked to their place in the Solar System. ☐
	I can name the planets in the Solar System. ☐	I can describe some similarities and differences between the planets of the Solar System. ☐	I can compare features of different objects in the Solar System. ☐
P1 4.3 The Earth	I can describe differences between seasons. ☐	I can explain why seasonal changes happen. ☐	I can predict the effect of the Earth's tilt on temperature and day-length. ☐
	I can describe the motion of the Sun, stars, and Moon across the sky. ☐	I can explain the motion of the Sun, stars, and Moon across the sky. ☐	I can predict how seasons would be different if there was no tilt. ☐
P1 4.4 The Moon	I can name some phases of the Moon. ☐	I can describe the phases of the Moon. ☐	I can predict phases of the Moon at a given time. ☐
	I can explain simply why we see the Moon from Earth. ☐	I can explain why we see the phases of the Moon. ☐	I can explain how total eclipses are linked to phases of the Moon. ☐
	I can describe what a total eclipse is. ☐	I can explain why total eclipses happen. ☐	I can explain why it is possible to see an eclipse on some of the planets in the Solar System but not others. ☐

Environment and Feeding Relationships

Lesson	Developing	Secure	Extending
B2 2.7 Food chains and webs	I can state the definition of a food chain. ☐	I can describe what food chains show. ☐	I can explain the link between food chains and energy. ☐
	I can state the definition of a food web. ☐	I can describe what food webs show. ☐	I can explain why a food web gives a more accurate representation of feeding relationships than a food chain. ☐
B2 2.8 Disruption to food chains and webs	I can state that one population can affect another. ☐	I can describe the interdependence of organisms. ☐	I can explain the interdependence of organisms. ☐
	I can state that toxic materials can get into the food chain. ☐	I can describe how toxic materials can accumulate in a food web. ☐	I can explain why toxic materials have greater effect on top predators in a food chain. ☐
B2 2.9 Ecosystems	I can state that different organisms can co-exist. ☐	I can describe how different organisms co-exist within an ecosystem. ☐	I can explain why different organisms are needed in an ecosystem. ☐

Electrical Circuits

Lesson	Developing	Secure	Extending
P2 1.2 Circuits and current	I can name what flows in a circuit. ☐	I can describe what is meant by current. ☐	I can use a model to explain how current flows in a circuit. ☐
	I can name the equipment used to measure current. ☐	I can describe how to measure current. ☐	I can predict the current in different circuits. ☐
P2 1.3 Potential difference	I can state the unit of potential difference. ☐	I can describe what is meant by potential difference. ☐	I can explain the difference between potential difference and current. ☐

Lesson	Developing	Secure	Extending
	I can name the equipment used to measure potential difference. ☐	I can describe how to measure potential difference. ☐	I can explain why potential difference is measured in parallel. ☐
	I can describe the effect of a larger potential difference. ☐	I can describe what is meant by the rating of battery or bulb. ☐	I can predict the effect of changing the rating of a battery or bulb in a circuit. ☐
P2 1.4 Series and parallel	I can state one difference between series and parallel circuits. ☐	I can describe the difference between series and parallel circuits. ☐	I can explain the most suitable type of circuit for the domestic ring main. ☐
	I can state how current varies in series and parallel circuits. ☐	I can describe how current and potential difference vary in series and parallel circuits. ☐	I can explain why current and potential difference vary in series and parallel circuits. ☐
P2 1.5 Resistance	I can state the unit of resistance. ☐	I can describe what is meant by resistance. ☐	I can explain the causes of resistance. ☐
	I can compare simply the resistance of conductors and insulators. ☐	I can calculate the resistance of a component and of a circuit. ☐	I can explain what factors affect the resistance of a resistor. ☐
	I can list examples of conductors and insulators. ☐	I can describe the difference between conductors and insulators in terms of resistance. ☐	I can compare the effect of resistance in different materials. ☐