

Food, Digestion and Health

| Lesson | Developing | Secure | Extending |
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| B2 1.1 Nutrients | I can name some nutrients in a given diet. <input type="checkbox"/> | I can describe the components of a healthy diet. <input type="checkbox"/> | I can explain what makes a food a healthy option. <input type="checkbox"/> |
| | I can name some nutrients needed by the human body. <input type="checkbox"/> | I can explain the role of each nutrient in the body. <input type="checkbox"/> | I can explain how each nutrient contributes to a healthy, balanced diet. <input type="checkbox"/> |
| B2 1.2 Food tests | I can state that food can be tested for starch, lipids, sugar, and protein. <input type="checkbox"/> | I can describe how to test food for starch, lipids, sugar, and protein. <input type="checkbox"/> | I can explain why testing food for starch, lipids, sugar, and protein is important. <input type="checkbox"/> |
| | I can state that food tests show colour changes. <input type="checkbox"/> | I can describe the positive result for each test. <input type="checkbox"/> | I can explain the meaning of positive or negative results in terms of the food tests. <input type="checkbox"/> |
| B2 1.3 Unhealthy diet | I can state one potential problem for someone with an unhealthy diet. <input type="checkbox"/> | I can describe some health issues cause by an unhealthy diet. <input type="checkbox"/> | I can explain how an unhealthy diet causes health issues. <input type="checkbox"/> |
| | I can state that different people require different amounts of energy. <input type="checkbox"/> | I can calculate the energy requirements of different people. <input type="checkbox"/> | I can explain that different people require different amounts of energy, using energy calculations and data to support my explanations. <input type="checkbox"/> |
| B2 1.4 Digestive system | I can state what is meant by digestion. <input type="checkbox"/> | I can describe the process of digestion. <input type="checkbox"/> | I can explain why food needs to be digested. <input type="checkbox"/> |
| | I can name the main parts of the digestive system. <input type="checkbox"/> | I can describe the structure and function of the main parts of the digestive system. <input type="checkbox"/> | I can explain how each part of the digestive system works in sequence, including adaptations of the small intestine for its function. <input type="checkbox"/> |

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| B2 1.5 Bacteria and enzymes in digestion | I can name some enzymes used in digestion. <input type="checkbox"/> | I can describe the role of enzymes in digestion. <input type="checkbox"/> | I can explain how enzymes affect the rate of digestion. <input type="checkbox"/> |
| | I can state where bacteria are found in the digestive system. <input type="checkbox"/> | I can describe the role of bacteria in digestion. <input type="checkbox"/> | I can explain how some bacteria improve health. <input type="checkbox"/> |
| B2 1.8 Smoking | I can name effect of tobacco smoke on health. <input type="checkbox"/> | I can describe the effect of tobacco smoke on health. <input type="checkbox"/> | I can explain how smoking causes disease. <input type="checkbox"/> |

Respiration, Photosynthesis and Ecosystems

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|-----------------------|--|--|--|
| B2 2.1 Photosynthesis | I can state where photosynthesis occurs in the plant. <input type="checkbox"/> | I can describe the process of photosynthesis. <input type="checkbox"/> | I can explain the importance of photosynthesis in the food chain. <input type="checkbox"/> |
| | I can state the products of photosynthesis. <input type="checkbox"/> | I can state the word equation for photosynthesis. <input type="checkbox"/> | I can explain how the plant obtains the reactants for photosynthesis. <input type="checkbox"/> |
| B2 2.2 Leaves | I can name the main structures of the leaf. <input type="checkbox"/> | I can describe the structure and function of the main components of the leaf. <input type="checkbox"/> | I can explain how the structures of the leaf make it well adapted for photosynthesis. <input type="checkbox"/> |
| | I can state the function of chloroplasts in a leaf. <input type="checkbox"/> | I can explain the distribution of the chloroplasts in the leaf. <input type="checkbox"/> | I can explain the role of chloroplasts in photosynthesis. <input type="checkbox"/> |

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| B2 2.3 Plant minerals | I can name the minerals required by a plant. <input type="checkbox"/> | I can describe how a plant uses minerals for healthy growth. <input type="checkbox"/> | I can explain deficiency symptoms in plants. <input type="checkbox"/> |
| | I can state that nitrates are essential for plant growth. <input type="checkbox"/> | I can explain the role of nitrates in plant growth. <input type="checkbox"/> | I can explain how proteins are made for plant growth. <input type="checkbox"/> |
| B2 2.5 Aerobic respiration | I can state the requirements for aerobic respiration. <input type="checkbox"/> | I can state the word equation for aerobic respiration. <input type="checkbox"/> | I can explain how the reactants for respiration get into the cells. <input type="checkbox"/> |
| B2 2.5 Aerobic respiration | I can give the name of the process where energy is released in cells. <input type="checkbox"/> | I can describe the process of respiration. <input type="checkbox"/> | I can explain the process of aerobic respiration. <input type="checkbox"/> |
| B2 2.6 Anaerobic respiration | I can state the products of anaerobic respiration. <input type="checkbox"/> | I can state the word summary for anaerobic respiration. <input type="checkbox"/> | I can explain the uses of the products from anaerobic respiration. <input type="checkbox"/> |
| | I can state one difference between aerobic and anaerobic respiration. <input type="checkbox"/> | I can describe the differences between aerobic and anaerobic respiration. <input type="checkbox"/> | I can explain the differences between the two types of respiration. <input type="checkbox"/> |
| B2 2.7 Food chains and webs | I can state the definition of a food chain. <input type="checkbox"/> | I can describe what food chains show. <input type="checkbox"/> | I can explain the link between food chains and energy. <input type="checkbox"/> |
| | I can state the definition of a food web. <input type="checkbox"/> | I can describe what food webs show. <input type="checkbox"/> | I can explain why a food web gives a more accurate representation of feeding relationships than a food chain. <input type="checkbox"/> |

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| B2 2.8 Disruption to food chains and webs | I can state that one population can affect another. | <input type="checkbox"/> | I can describe the interdependence of organisms. | <input type="checkbox"/> | I can explain the interdependence of organisms. | <input type="checkbox"/> |
| | I can state that toxic materials can get into the food chain. | <input type="checkbox"/> | I can describe how toxic materials can accumulate in a food web. | <input type="checkbox"/> | I can explain why toxic materials have greater effect on top predators in a food chain. | <input type="checkbox"/> |
| B2 2.9 Ecosystems | I can state that different organisms can co-exist. | <input type="checkbox"/> | I can describe how different organisms co-exist within an ecosystem. | <input type="checkbox"/> | I can explain why different organisms are needed in an ecosystem. | <input type="checkbox"/> |
| | I can state the definition of the term niche. | <input type="checkbox"/> | I can identify niches within an ecosystem. | <input type="checkbox"/> | I can explain why different organisms within the same ecosystem have different niches. | <input type="checkbox"/> |

Atoms, Elements and Compounds

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| C1 2.1 Elements | I can match the term 'element' to its definition. <input type="checkbox"/> | I can state what an element is. <input type="checkbox"/> | I can explain why certain elements are used for given roles, in terms of the properties of the elements. <input type="checkbox"/> |
| | I can state examples of elements. <input type="checkbox"/> | I can recall the chemical symbols of six elements. <input type="checkbox"/> | I can compare the properties and uses of different elements. <input type="checkbox"/> |
| C1 2.2 Atoms | I can identify substances that are elements, giving a simple reason for my answer. <input type="checkbox"/> | I can state what atoms are. <input type="checkbox"/> | I can link the behaviour of atoms within substances to why elements, but not lone atoms, exhibit properties. <input type="checkbox"/> |
| | I can list the properties of some elements. <input type="checkbox"/> | I can compare the properties of one atom of an element to the properties of many atoms. <input type="checkbox"/> | I can use information given to draw conclusions about how the properties of atoms contribute to the properties of elements. <input type="checkbox"/> |
| C1. 2.3 Compounds | I can state that elements and compounds are different. <input type="checkbox"/> | I can state what a compound is. <input type="checkbox"/> | I can differentiate elements from compounds when given names and properties. <input type="checkbox"/> |
| | I can identify elements within compounds. <input type="checkbox"/> | I can explain why a compound has different properties to the elements in it. <input type="checkbox"/> | I can use particle diagrams to explain why a compound has different properties to the elements in it. <input type="checkbox"/> |
| C1 2.4 Chemical formulae | I can state how many different elements are in a compound by looking at a chemical formula. <input type="checkbox"/> | I can write the chemical names for some simple compounds. <input type="checkbox"/> | I can calculate the percentage of a given element within a compound. <input type="checkbox"/> |
| | I can name the elements in a compound. <input type="checkbox"/> | I can write and interpret formulae. <input type="checkbox"/> | I can use data provided to calculate formula masses for compounds. <input type="checkbox"/> |

The Rock Cycle and Earth

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| C2 4.1 The Earth and its atmosphere | I can name the layers of the Earth. <input type="checkbox"/> | I can describe properties of the different layers of the Earth's structure. <input type="checkbox"/> | I can compare the different layers of the Earth in terms of their properties. <input type="checkbox"/> |
| | I can name the main components of the atmosphere. <input type="checkbox"/> | I can describe the composition of the atmosphere. <input type="checkbox"/> | I can describe the composition of the atmosphere in terms of abundance of components. <input type="checkbox"/> |
| C2 4.2 Sedimentary rocks | I can state a property of sedimentary rocks. <input type="checkbox"/> | I can explain two properties of sedimentary rocks. <input type="checkbox"/> | I can explain two properties of sedimentary rocks by linking them to the rock structure and formation. <input type="checkbox"/> |
| | I can describe simply how sedimentary rocks are made. <input type="checkbox"/> | I can explain how sedimentary rocks are made. <input type="checkbox"/> | I can give a detailed explanation of the sedimentary rock cycle. <input type="checkbox"/> |
| C2 4.3 Igneous and metamorphic rocks | I can state one difference between igneous and metamorphic rocks. <input type="checkbox"/> | I can compare the ways that igneous and metamorphic rocks form. <input type="checkbox"/> | I can discuss examples of rocks that illustrate the different methods of formation of igneous and metamorphic rocks. <input type="checkbox"/> |
| | I can describe very simply how igneous and metamorphic rocks are formed. <input type="checkbox"/> | I can explain how igneous and metamorphic rocks form. <input type="checkbox"/> | I can link properties of igneous and metamorphic rocks to their methods of formation. <input type="checkbox"/> |
| C2 4.4 The rock cycle | I can give simple facts about how a rock can be changed from one type to another. <input type="checkbox"/> | I can use the rock cycle to explain how the material in rocks is recycled. <input type="checkbox"/> | I can give a detailed description and explanation of a rock's journey through the rock cycle. <input type="checkbox"/> |

The Rock Cycle and Earth

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| C2 4.6 Climate change | I can state a cause of global warming. | <input type="checkbox"/> | I can explain why global warming happens. | <input type="checkbox"/> | I can use a model to explain why global warming happens. | <input type="checkbox"/> |
| | I can state one impact of global warming. | <input type="checkbox"/> | I can explain some impacts of global warming. | <input type="checkbox"/> | I can discuss in detail the impacts of global warming, identifying primary and secondary problems. | <input type="checkbox"/> |

Heating and Cooling

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|-----------------------|---|--------------------------|---|--------------------------|--|--------------------------|
| P2 2.1 Food and fuels | I can identify energy values for food and fuels. | <input type="checkbox"/> | I can compare the energy values of food and fuels. | <input type="checkbox"/> | I can calculate energy requirements for various situations, considering diet and exercise. | <input type="checkbox"/> |
| | I can describe energy requirements in different situations. | <input type="checkbox"/> | I can compare the energy in food and fuels with the energy needed for different activities. | <input type="checkbox"/> | I can suggest different foods needed in various situations, considering diet and exercise. | <input type="checkbox"/> |
| P2 2.2 Energy adds up | I can state the definition of the conservation of energy. | <input type="checkbox"/> | I can describe energy before and after a change. | <input type="checkbox"/> | I can account for energy dissipation during transfers. | <input type="checkbox"/> |
| | I can state how energy is transferred. | <input type="checkbox"/> | I can explain what brings about transfers in energy. | <input type="checkbox"/> | I can compare energy transfers to energy conservation. | <input type="checkbox"/> |

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| P2 2.3 Energy and temperature | I can state how energy and temperature are measured. <input type="checkbox"/> | I can state the difference between energy and temperature. <input type="checkbox"/> | I can give an example to show that energy and temperature are different. <input type="checkbox"/> |
| | I can describe how energy is transferred through solids, liquids, and in air. <input type="checkbox"/> | I can describe what happens when you heat up solids, liquids, and gases. <input type="checkbox"/> | I can explain, in terms of particles, how energy is transferred. <input type="checkbox"/> |
| P2 2.4 Energy transfer: particles | I can describe simply what happens in conduction and convection. <input type="checkbox"/> | I can describe how energy is transferred by particles in conduction and convection. <input type="checkbox"/> | I can explain in detail the processes involved during heat transfers. <input type="checkbox"/> |
| | I can state that insulators reduce heat loss compared to conductors. <input type="checkbox"/> | I can describe how an insulator can reduce energy transfer. <input type="checkbox"/> | I can explain why certain materials are good insulators. <input type="checkbox"/> |
| P2 2.5 Energy transfer: radiation | I can state some sources of infrared radiation. <input type="checkbox"/> | I can describe some sources of infrared radiation. <input type="checkbox"/> | I can explain how thermal equilibrium can be established. <input type="checkbox"/> |
| | I can state some properties of infrared radiation. <input type="checkbox"/> | I can explain how energy is transferred by radiation. <input type="checkbox"/> | I can explain why some objects radiate more energy. <input type="checkbox"/> |

Magnets and Electromagnets

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| P2 1.6 Magnets and magnetic fields | I can describe features of a magnet. <input type="checkbox"/> | I can describe how magnets interact. <input type="checkbox"/> | I can explain how magnets can be used. <input type="checkbox"/> |
| | I can draw the magnetic field lines around a bar magnet. <input type="checkbox"/> | I can describe how to represent magnetic fields. <input type="checkbox"/> | I can compare magnetic field lines and a magnetic field. <input type="checkbox"/> |
| | I can state the Earth has a magnetic field. <input type="checkbox"/> | I can describe the Earth's magnetic field. <input type="checkbox"/> | I can explain how a compass works. <input type="checkbox"/> |
| P2 1.7 Electromagnets | I can state the main features of an electromagnet. <input type="checkbox"/> | I can describe how to make an electromagnet. <input type="checkbox"/> | I can explain how an electromagnet works. <input type="checkbox"/> |
| | I can state one difference between permanent magnets and electromagnets. <input type="checkbox"/> | I can describe how to change the strength of an electromagnet. <input type="checkbox"/> | I can predict the effect of changes on the strength of different electromagnets. <input type="checkbox"/> |
| P2 1.8 Using electromagnets | I can state some uses of electromagnets. <input type="checkbox"/> | I can describe some uses of electromagnets. <input type="checkbox"/> | I can apply knowledge about electromagnets to design a circuit. <input type="checkbox"/> |
| | I can state the main parts of a motor. <input type="checkbox"/> | I can describe how a simple motor works. <input type="checkbox"/> | I can suggest ways to make a motor turn faster. <input type="checkbox"/> |

Sound

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| P1 2.2 Sound and energy transfer | I can name some sources of sound. <input type="checkbox"/> | I can describe how sound is produced and travels. <input type="checkbox"/> | I can explain what is meant by supersonic travel. <input type="checkbox"/> |
| | I can name materials that sound can travel through. <input type="checkbox"/> | I can explain why the speed of sound is different in different media. <input type="checkbox"/> | I can describe sound as the transfer of energy through vibrations and explain why sound cannot travel through a vacuum. <input type="checkbox"/> |
| | I can state that sound travels more slowly than light. <input type="checkbox"/> | I can contrast the speed of sound and the speed of light. <input type="checkbox"/> | I can compare the time taken for sound and light to travel the same distance. <input type="checkbox"/> |
| P1 2.3 Loudness and pitch | I can state the link between loudness and amplitude. <input type="checkbox"/> | I can describe the link between loudness and amplitude. <input type="checkbox"/> | I can compare and contrast waves of different loudness using a diagram. <input type="checkbox"/> |
| | I can state that frequency is measured in hertz. <input type="checkbox"/> | I can describe the link between pitch and frequency. <input type="checkbox"/> | I can compare and contrast waves of different frequency using a diagram. <input type="checkbox"/> |
| | I can state the range of human hearing. <input type="checkbox"/> | I can state the range of human hearing and describe how it differs from the range of hearing in animals. <input type="checkbox"/> | I can explain how animals hear the same sounds differently. <input type="checkbox"/> |
| P1 2.4 Detecting sound | I can name some parts of the ear. <input type="checkbox"/> | I can describe how the ear works. <input type="checkbox"/> | I can explain how parts of the ear transfer vibrations. <input type="checkbox"/> |
| | I can state some ways that hearing can be damaged. <input type="checkbox"/> | I can describe how your hearing can be damaged. <input type="checkbox"/> | I can explain how your hearing can be damaged. <input type="checkbox"/> |

Light

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| P1 3.1 Light | I can describe some ways that light interacts with materials. <input type="checkbox"/> | I can describe what happens when light interacts with materials. <input type="checkbox"/> | I can predict how light will interact with different materials. <input type="checkbox"/> |
| | I can state that light travels very fast. <input type="checkbox"/> | I can state the speed of light. <input type="checkbox"/> | I can calculate the distance travelled by light in a light-year. <input type="checkbox"/> |
| P1 3.2 Reflection | I can describe the features of a mirror image. <input type="checkbox"/> | I can explain how images are formed in a plane mirror. <input type="checkbox"/> | I can draw a ray diagram showing how an image is formed in a plane mirror. <input type="checkbox"/> |
| | I can identify examples of specular reflection and diffuse scattering. <input type="checkbox"/> | I can explain the difference between specular reflection and diffuse scattering. <input type="checkbox"/> | I can apply the concept of specular reflection and diffuse scattering to models and other examples. <input type="checkbox"/> |
| P1 3.3 Refraction | I can describe what happens when light is refracted. <input type="checkbox"/> | I can describe and explain what happens when light is refracted. <input type="checkbox"/> | I can predict the path of light using a model of light refraction. <input type="checkbox"/> |
| | I can describe features of the image formed by a lens. <input type="checkbox"/> | I can describe what happens when light travels through a lens. <input type="checkbox"/> | I can explain what happens when light travels through a lens. <input type="checkbox"/> |
| P1 3.4 The eye and the camera | I can name parts of the eye. <input type="checkbox"/> | I can describe how the eye works. <input type="checkbox"/> | I can explain how the eye forms an image. <input type="checkbox"/> |

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| P1 3.5 Colour | I can state what happens to light when it passes through a prism. <input type="checkbox"/> | I can explain what happens when light passes through a prism. <input type="checkbox"/> | I can explain why a prism forms a spectrum. <input type="checkbox"/> |
| | I can state the primary and secondary colours of light. <input type="checkbox"/> | I can describe how primary colours add to make secondary colours. <input type="checkbox"/> | I can explain the formation of secondary colours. <input type="checkbox"/> |
| | I can state the effect of coloured filters on light. <input type="checkbox"/> | I can explain how filters and coloured materials subtract light. <input type="checkbox"/> | I can predict how coloured objects will appear given different coloured lights and filters. <input type="checkbox"/> |

Separation techniques

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|-------------------|---|--|--|
| C2 2.1 Mixtures | I can state that parts of mixtures are not joined together. <input type="checkbox"/> | I can describe particle arrangements in mixtures. <input type="checkbox"/> | I can use particle models to represent mixtures. <input type="checkbox"/> |
| | I can state that different substances in mixtures have their own melting points. <input type="checkbox"/> | I can explain how to identify pure substances. <input type="checkbox"/> | I can comment on a substance's purity by interpreting temperature change data. <input type="checkbox"/> |
| C2 2.2 Solutions | I can identify a solvent, solute, and solution in a given scenario. <input type="checkbox"/> | I can describe solutions using key words. <input type="checkbox"/> | I can explain the relationship between solutes, solvents, and solutions. <input type="checkbox"/> |
| | I can state a solution contains dissolved particles. <input type="checkbox"/> | I can use the particle model to explain dissolving. <input type="checkbox"/> | I can draw particle diagrams to represent solutions and pure substances. <input type="checkbox"/> |
| C2 2.3 Solubility | I can describe what happens when a solute dissolves. <input type="checkbox"/> | I can explain what a saturated solution is. <input type="checkbox"/> | I can explain why temperature affects the amount of solute dissolved in a solution. <input type="checkbox"/> |
| | I can describe how temperature affects solubility. <input type="checkbox"/> | I can explain the meaning of solubility. <input type="checkbox"/> | I can explain what a solubility graph shows. <input type="checkbox"/> |
| C2 2.4 Filtration | I can name the filtrate and residue in given situations. <input type="checkbox"/> | I can explain how filtration works. <input type="checkbox"/> | I can use particle diagrams to illustrate how filtering works. <input type="checkbox"/> |
| | I can state some situations in which filtering is used. <input type="checkbox"/> | I can describe how to filter a mixture. <input type="checkbox"/> | I can explain whether or not filtering can be used in given situations. <input type="checkbox"/> |

Separation techniques

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| C2 2.5 Evaporation and distillation | I can state some mixtures that can be separated using evaporation. <input type="checkbox"/> | I can explain how to use evaporation to separate mixtures. <input type="checkbox"/> | I can compare evaporation and distillation. <input type="checkbox"/> |
| | I can state some mixtures that can be separated using distillation. <input type="checkbox"/> | I can explain how distillation works. <input type="checkbox"/> | I can discuss whether evaporation or distillation would be suitable for separating a mixture. <input type="checkbox"/> |
| C2 2.6 Chromatography | I can state what happens to mixtures when they undergo chromatography <input type="checkbox"/> | I can explain how chromatography separates mixtures. <input type="checkbox"/> | I can explain how chromatography can be used in different scenarios. <input type="checkbox"/> |
| | I can describe what a chromatogram looks like. <input type="checkbox"/> | I can analyse chromatograms to identify substances in mixtures. <input type="checkbox"/> | I can consider how chromatography can be used to monitor the progress of reactions. <input type="checkbox"/> |