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## Particle Model

Key Idea	What I need to do...	Confidence		
		Red	Amber	Green
<a href="#">States of matter and changes of state</a>	Can list the 3 states of matter and the processes to change from one state to another			
	Can describe the properties of each state of matter			
<a href="#">Particle model</a>	Can draw a particle model for each state of matter, describing the energy levels of each			
	Understands the limitations of the particle model			
<a href="#">Gas pressure</a>	Can explain what causes gas pressure			
	Can state the factors that affect gas pressure			
<a href="#">Atomic structure</a>	Understands what an atom is and that everything is made up from them			
	Can state the 3 subatomic particles that make up the atom (including their charge)			
	Can use a periodic table to find the chemical symbol for an element			
<a href="#">Atoms, elements, compounds, and mixture</a>	Can describe the difference between an element, compound and a mixture			
	Can explain why physical separation methods do not work on a compound but do on a mixture			
	Can suggest a separation technique to separate sand, salt and iron filings			

## Separating Mixtures

Key Idea	What I need to do...	Confidence		
		Red	Amber	Green
<a href="#">Mixtures</a> and <a href="#">solubility</a>	Explain what the words mixture, solute, solvent, solution, and saturated mean			
	Make a solution of sugar and water and understanding when it is saturated			
<a href="#">Diffusion</a>	Understand what diffusion of particles is			
	Describe the effect that temperature has on the speed of diffusion			
<a href="#">Filtering</a> and <a href="#">evaporation</a> of rock salt	Explain why filtering can remove impurities in a rock salt solution			
	Explain how salt dissolves in water and how evaporation can separate it			
<a href="#">Chromatography</a>	Be able to describe how chromatography can be used to separate inks			
	Be able to explain why some ink moved further up the paper than others			
<a href="#">Distillation</a>	Be able to produce a labelled diagram of your equipment			
	Explain how distillation can be used to separate liquids of different boiling points			
	Give a real-world example/use for distillation			

## Acids and Alkalis

Key Idea	What I need to do...	Confidence		
		Red	Amber	Green
<a href="#">Acids and alkalis</a>	Can recognise different hazard symbols and undergo a risk assessment			
	Can tell if a substance is an acid or an alkali using litmus paper			
	<a href="#">Uses of acids and alkalis</a>			
<a href="#">Reactions of metals and acids</a>	Can write word equations of the reaction between an acid and a metal			
	Knows the test for hydrogen gas			
<a href="#">Neutralisation and making salts</a>	Can explain what is meant by neutralisation and how to neutralise an acid			
	Can write the word equation for a neutralisation reaction			

## Cells and Movement

Key Idea	What I need to do...	Confidence		
		Red	Amber	Green
<a href="#">Cell structure</a>	Can label a diagram of an animal and plant cell			
	Give the function of each sub-cellular structure			
<a href="#">Diffusion</a>	Can describe what diffusion is			
	Can give an example of substances that need to be exchanged by diffusion in a cell			
<a href="#">Organisation of organisms</a>	Give the definitions of cell, tissue, organ and organ system			
	Can describe why multicellular organisms need specialised cells			
	Identify some specialised cells in both plants and animals			
<a href="#">Function of the skeleton</a>	Identify the main bones in the skeleton			
	Describe the main functions of the skeleton			
	Can name two different types of <a href="#">joints</a> in the body			
<a href="#">Function of muscles</a>	Identify the different tissues that connect bones and muscles, and bones to bones			
	Explain how antagonistic muscle pairs work			

## Variation and Interdependence

Key Idea	What I need to do...	Confidence		
		Red	Amber	Green
<a href="#">Leaf and root adaptations</a>	Can describe how leaves are adapted for photosynthesis			
	Can describe the roles of roots for the plant			
	Knows what stomata are and why they are important to the plant			
<a href="#">Photosynthesis</a>	Can state what photosynthesis is and why it is important for plants and food chains			
	Understands where all of the reactants for photosynthesis come from			
<a href="#">Interdependence</a>	Understands how organisms are dependent on each other for survival			
	Can make a small food chain from a list of organisms			
<a href="#">Predator-prey relationships</a>	Understands the difference between a predator and a prey organism			
<a href="#">Food webs</a>	Knows what a food web is and how it is more realistic than a food chain for an ecosystem			
	Can state producers, primary/secondary and tertiary consumers and describe why an organism is a “top predator”			
<a href="#">Pollination and seed dispersal</a>	Can describe how plants can be fertilised via insects and wind			
	Give brief descriptions of the 4 main methods of seed dispersal			

## Forces

Key Idea	What I need to do...	Confidence		
		Red	Amber	Green
<u>Forces</u>	List the 3 things that forces can do			
	Can describe the difference between contact and non-contact forces			
	Can describe explain what would happen if we removed friction force			
<u>Force diagrams</u>	Can state the unit of measurement for force and how we measure it			
	Can draw a force diagram using arrows			
	Explain if an object is stationary or accelerating			
<u>Hooke's law</u>	Can explain what happens to a spring when force is applied (using Hooke's law)			
	Describe what the limit of proportionality is			
<u>Pressure</u>	Can describe what pressure is using force and area			
	Can use an equation triangle involving pressure, force, and area			
<u>Moments</u>	Can describe using moments how different amounts of force can have the same moment			
	Can describe the use of moments in the real world			
	Can calculate the unknown distance from pivot, moment or force using an equation triangle			

## Energy Transfers and Energy Costs

Key Idea	What I need to do...	Confidence		
		Red	Amber	Green
<a href="#">Energy stores and pathways</a>	Understands different stores of energy and the pathways in which it can be transferred			
	Can explain the law of the conservation of energy in relation to energy transfers			
	Can draw an energy transfer diagram to show what happens to energy in given situations (such as heating a pot of water using wood)			
<a href="#">Calculating work done and energy transferred</a>	Can use power and time to calculate the energy transferred to an appliance (in joules)			
	Can use a 3-term equation triangle to calculate the work done (in joules) on an object			
<a href="#">Heat energy transfer via conduction</a>  <a href="#">Heat energy transfer via convection</a>  <a href="#">Heat energy transfer via radiation</a>	Can describe how energy is transferred along a solid			
	Understands how to investigate which material is the best conductor of heat			
	Can describe why materials such as copper are used for items such as pots and pans			
	Understands how the temperature of a of a fluid can affect its density			
	Can explain how hot, less dense fluids rises above colder more dense fluids			
	Can describe how a convection current forms and can heat a room			
	Understands what a vacuum is and how radiation is transferred along it			
	Can describe what surfaces are best at absorbing infrared radiation			
Can explain why an object changes in temperature due to absorbing/emitting infrared radiation				
<a href="#">Insulators</a>	Can describe the difference between a conductor and an insulator			



## Current and Voltage

Key Idea	What I need to do...	Confidence		
		Red	Amber	Green
<a href="#">Circuit symbols</a>	Can link circuit symbols to their components			
	Can describe what current and voltage are in a circuit			
	Make an analogy to describe how electricity acts in a circuit			
<a href="#">Current, voltage and resistance</a>	Knows the units for potential difference (voltage) , current and resistance			
	Can explain what we use to measure voltage and current in a circuit			
	Can state why a voltmeter must be wired into a circuit in parallel to a component			
<a href="#">Series and parallel circuits</a>	Can draw and describe the differences between a series and a parallel circuit			
	Understands what happens to the voltage and current in a series and a parallel circuit			
	Explain what will happen to the other bulbs in a series or parallel circuit when one of the bulbs breaks			
<a href="#">Static electricity</a>	State what particles are lost or gained to make an object "charged"			
	Describe how materials will attract or repel each other when statically charged			

## Metals and Non-Metals

Key Idea	What I need to do...	Confidence		
		Red	Amber	Green
<a href="#">Metals and non-metals</a>	Understands what malleable, ductile, sonorous, lustrous and conductor mean			
	Can describe the properties of a metal and a non-metal			
	Can suggest what properties of a metal make it suitable for different applications (uses)			
<a href="#">The reactivity series</a>	Knows what the reactivity series is			
	Understands four signs that show that a reaction is happening			
	Can use the reactivity series to predict if a reaction will happen or not based on the reactivity of the reactants			
<a href="#">Displacement reactions</a>	Can predict and name the products formed from a displacement reaction			
	Understands how displacement reactions are used to extract metals such as copper from their ores			
	Can describe which elements are being oxidised and reduced in a reaction			