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| Year 7 Science |
| Term 2 Revision Guide |
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Cells

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| Characteristics of life-MRS GREN |
| Recognise parts of a cell and their function (nucleus, cell membrane, cytoplasm, vacuole, cell wall and chloroplasts) |
| Remember the differences and similarities between plant and animal cells |
| Name some specialised cells and be able to recognise specialised cells from drawings / pictures. |
| Explain how each of the cells are specialised to carry out particular functions (eg root hair cell, nerve, ciliated cell) |
| The organisation of organisms. Cells make tissues, tissues make organs, and organs make organ systems. |
| The main organs of the body, their positions in the body and their functions. |
| Describe the functions of the main organ systems. |
| Parts of a microscope and what they do |
| Explain that plants and animals grow by increasing the number of cells and recall how cells divide. |

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| **Cells Key Words** | |
| **Cell** | the building blocks for life |
| **Tissue** | a group of similar cells do a job |
| **Organ** | a group of tissues that do a specific job |
| **Organ System** | Group of organs working together to do a specific job |
| **Microscopic** | Too small to see with the naked eye |
| **Microscope** | Equipment used to magnify small things |
| **Magnify** | Make something appear larger |
| **Cell membrane** | surrounds the cell and controls what goes in and out |
| **Cell wall** | a rigid structure around plant cells |
| **Chloroplast** | green structure found in pant cells that absorb light for photosynthesis |
| **Cytoplasm** | jelly like substance where chemical reactions take place |
| **Nucleus** | controls the cell reactions and contains genetic information |
| **Photosynthesis** | the process where green plant use to make food using sunlight |
| **Specialisation** | Cells have a particular shape to carry out a particular job |
| **Brain** | Organ that controls the body |
| **Heart** | Organ that pumps blood around the body |
| **Lungs** | Organ that makes you breath |
| **Intestines** | Organ that digests your food |
| **Circulatory System** | Organ system that carries blood around the body |

# States of Matter

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| Be able to sort materials into solids, liquids and gases |
| State properties of the three states of matter |
| Use scientific words to describe all changes of state |
| Use a heating curve to identify changes of state |
| Describe and explain the particle arrangement in solids, liquids and gases |
| Use the particle model to explain diffusion |
| Explain how gas particles exert pressure on the walls of a container. |
| Describe the effects of pressure in different situations. |
| Describe how changes will either increase or decrease pressure. |

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| **States of Matter Key Words** | |
| **Compressible** | can be squashed |
| **Contract** | gets smaller |
| **Condense** | a change of state from gas to liquid |
| **Density** | how much mass there is in a specific space |
| **Diffuse** | to spread out (from a high to low concentration) |
| **Evaporate** | a change of state from liquid to gas |
| **Boil** | Change from liquid to gas very quickly |
| **Expand** | to get bigger |
| **Flow** | a property of liquids and gases which means they can be poured and move through gaps. |
| **Freeze** | a change of state from liquid to solid |
| **Gas** | a substance with particles that are very far apart. |
| **Liquid** | a substance that has a fixed volume but takes the shape of its container |
| **Melt** | a change of state from solid to liquid |
| **Particle theory** | the model to explain why solids, liquids and gases behave like they do |
| **Pressure** | this is exerted by a gas on the walls of a container |
| **Solid** | a substance has a fixed shape and fixed volume |
| **Liquid** | A substance that takes the shape of the container but a fixed volume |
| **Gas** | A substance that has no fixed shape and takes the volume of the container |
| **Vibrate** | to move up and down or side to side |
| **Boiling Point** | Temperature at which a substance starts to boil |
| **Melting Point** | Temperature at which a substance starts to melt |
| **Freezing Point** | Temperature at which a substance starts to freeze |

**Forces-revision sheet**

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| Identify and describe common forces (e.g. friction, upthrust, gravity, weight, magnetic attraction) |
| Describe how forces can affect motion |
| Identify Newton as unit of force |
| Use arrows on diagrams to represent the direction of forces |
| Identify examples of balanced and unbalanced forces |
| Explain the difference between weight and mass |
| Describe friction and some ways of reducing friction |
| Explain how friction can be useful |
| Explain air resistance in terms of a frictional force |
| Explain why some objects float and some sink |
| Work out the size and direction of resultant forces when objects interact |
| Calculate the speed of an object using the equation  speed = distance/time |
| Interpret distance- time graphs |
| Explain changes in speed in an object in terms of unbalanced forces |

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| **Forces Key Words** | |
| **Force** | Push or pull |
| **Newton** | The unit for force (N) |
| **Non-contact force** | A force that can act at a distance (without touching the object) |
| **Upthrust** | A force pushing up |
| **Magnetism** | A non-contact force from magnets |
| **Gravity** | A non-contact force between all objects with mass (on Earth, force pulling objects to the ground) |
| **Friction** | Force acting against moving objects when two object rub against each other |
| **Static electricity** | A non-contact force caused by a build-up of charge |
| **Drag** | A force that acts against a moving object and slows it down |
| **Balanced forces** | Forces that are equal in size but opposite in direction |
| **Force diagram** | A diagram with arrows representing the size and direction of forces acting on an object |
| **Mass** | Amount of substance in an object, measured in grams or kilograms |
| **Weight** | Force measuring the heaviness of something, calculated using the equation  weight = mass x gravity |
| **Lubricant** | A substance that is used to decrease the amount of friction between two surfaces |
| **Speed** | How fast something is travelling, calculated using the equation speed = distance / time |
| **Density** | How heavy something is for its size, calculated using the equation density = mass / volume |
| **Volume** | How much space an object takes up (in cm3) |