| The big picture |
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| States of matter |
| Pupil particles |
| Changes of state 1 |
| Changes of state 2 |
| Mass and density |
| Dissolving |
| Density challenge |
| Particles and pressure |
| Diffusion |
| Solubility |
| Speeding up dissolving |

| Key ideas and terms | |
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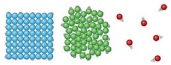
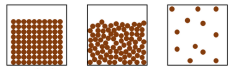
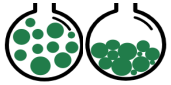
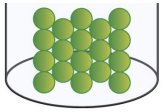
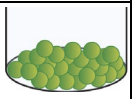
| Particle model | Materials are all made up of tiny particles.  |
| States of matter | There are three states of matter: solid, liquid and gas.   |
| Compressibility |  How easy it is to squash something. |
| Density | How tightly packed the particles are.  |
| Solid | Random particles, close together, move around each other. Fixed shape and volume. Dense and can't be compressed. Strong forces between particles.    |
| Liquid | Regular particles, close together, move around each other. Fixed volume, flow to fit container. Fairly dense and difficult to compress. Medium strength forces between particles.    |

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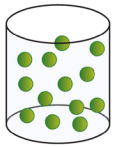
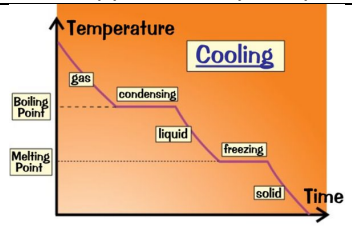
| Gas |  Random particles, far apart, move anywhere. Fill container. Low density and easy to compress.   No forces between particles. |
| Change of state<br><br>Melting<br>Boiling<br>Condensing<br>Freezing<br>Subliming | Changing between a solid, a liquid and a gas  <br>Changing solid to liquid<br>Changing liquid to gas<br>Changing gas to liquid<br>Changing liquid to solid<br>Changing directly from solid to gas |
| Melting point |  The temperature where a solid turns to a liquid. Freezing point is the opposite of this. |
| Boiling | The temperature where a liquid turns to a gas as fast as possible.  |
| Evaporation |  Where a liquid turns to a gas at the surface of the liquid. Happens at any temperature. |
| Cooling curve |   |
| Calculating mass and density | Mass = density x volume<br>Density = mass ÷ volume<br>Volume = mass ÷ density |

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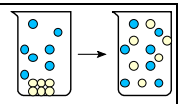
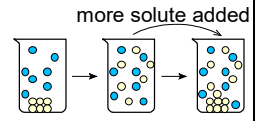
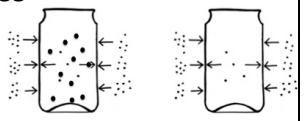
| Dissolving | The process where a solution forms.  |
| Soluble | A chemical that dissolves |
| Solvent | The liquid that dissolves the chemical |
| Solute | The solid that you dissolve |
| Solution | A mixture of a solid dissolved in a liquid  |
| Insoluble | A substance that does not dissolve |
| Saturated | A solution where no more solid will dissolve.   |
| Investigation words | **Independent variable:** This is what we change.<br>**Dependent variable:** This is what we measure.<br>**Control variables:** These are what we keep the same. |
| Pressure | This is caused when particles collide with something. It is bigger if there are more particles or less space.  |
| Diffusion |  The movement of a substance from an area of high concentration to an area of lower concentration.  |

# Year 7
# Particles and Matter