

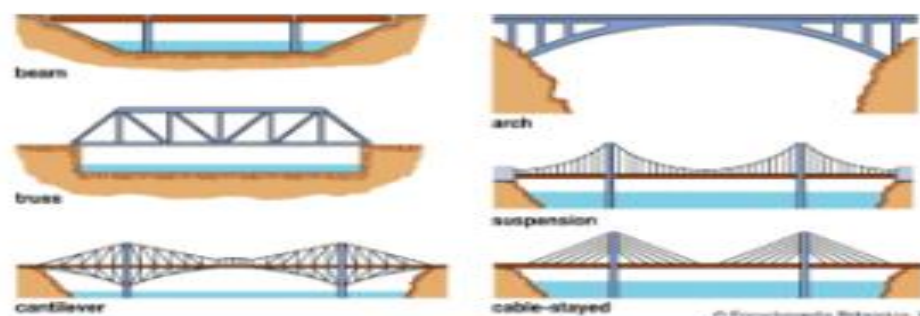
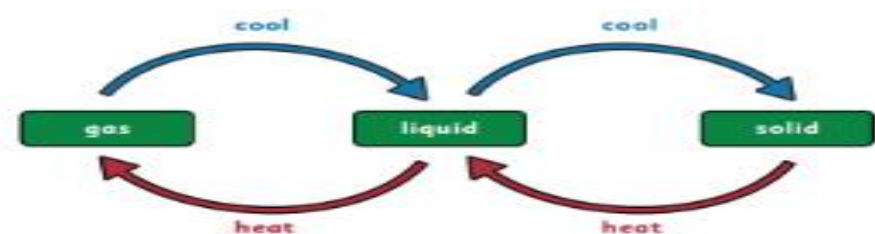
## Changing Materials - Bridges

Year 5 Summer 2

	Prior Knowledge	New Knowledge	Future Knowledge
<b>Science</b>	Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). (Y4) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting, and stretching. (Y2)	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids, and gases to decide how mixtures might be separated, including through filtering, sieving, and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood, and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	The order of metals and carbon in the reactivity series The use of carbon in obtaining metals from metal oxides Properties of ceramics, polymers, and composites (qualitative). (KS3)
<b>Art &amp; DT</b>	Create shell or frame structures, strengthen frames with diagonal struts. (Y4) Make structures more stable by giving them a wide base. Prototype frame structures. Measure and mark accordingly to 1cm. Cut slots. Cut internal shapes (if necessary). (Y3)	Study of a famous architect, Isambard Kingdom Brunel: Use appropriate tools with increasing accuracy. Join materials using appropriate methods. Cut accurately and safely to a marked line. Join and combine materials with temporary, fixed, or moving joinings.	Build frameworks using a range of materials e.g. wood, card corrugated plastic to support mechanisms Use glue gun with close supervision Use a craft knife cutting mat and safety ruler under one-to-one supervision if appropriate. Choose an appropriate sheet material for the purpose. (KS3)

Key Questions	Key Individuals	Key Vocabulary
How does a bridge not collapse?  How can you group different materials?  How can mixtures be separated?  How can you recover a substance from a solution?  Why is Brunel an influential and important person in British history?	<b>Isambard Kingdom Brunel</b> (1806-1859) was an English civil engineer. Brunel built dockyards, the Great Western Railway (GWR), a series of steamships, and numerous important bridges and tunnels (including the Clifton Suspension Bridge).  <b>Joseph Bazalgette</b> (1819-1891) engineered the first extensive underground sewage system to keep the River Thames clean from deadly bacteria, which is still standing in our local area today.  <b>Ruth Benerito</b> (1916-2013) was an American chemist and inventor known for her work related to the textile industry, notably including the development of wash-and-wear cotton fabrics.	<b>Engineering</b> - the branch of science and technology concerned with the design, building, and use of engines, machines, and structures. <b>Industrial Revolution</b> - the process of change from an agrarian and handicraft economy to one dominated by industry and machine manufacturing. <b>Hardness</b> - the quality or condition of being hard. <b>Solubility</b> - the ability to be dissolved, especially in water. <b>Conductivity</b> - the degree to which a specified material conducts electricity <b>Dissolving</b> - become or cause to become incorporated into a liquid so as to form a solution.

**States of matter can change when they are heated or cooled.**



Curriculum Leaflet

Year 5 Summer 2

Year 5 will be exploring the topic: 'Changing Materials - Bridges'. This unit of work will have a specific focus on developing the children's knowledge, skills, and understanding in Science.

Maths	English	Home
<p><b>Decimals</b>                      Add decimals with the same number of decimal places.                      Subtract decimals with the same number of decimal places.                      Add decimals with different numbers of decimal places.                      Subtract decimals with different numbers of decimal places.                      Efficient strategies for adding and subtracting decimals.</p> <p><b>Negative Numbers</b>                      Understand negative numbers.                      Count through zero in 1s.                      Count through zero in multiples.                      Compare and order negative numbers.                      Find the difference between negative numbers.</p> <p><b>Measurement</b>                      Kilograms and kilometres.                      Millimetres and millilitres.                      Metric units Imperial units.                      Converting units of times.</p> <p><b>Volume</b>                      To use cubic centimetres.                      To compare volume.                      Estimate volume.                      Estimate capacity.</p>	<p>We will be studying:</p> <p><b><i>Wonder</i> by R J Palacio</b></p> <p><b>Genres</b></p> <p><b><u>Biography</u></b></p> <ul style="list-style-type: none"> <li>Ensuring the consistent and correct use of tense (past) throughout a piece of writing and ensuring correct subject and verb agreement when using singular and plural.</li> <li>Uses relative clauses beginning with who, which, where, when, whose, that, or an omitted relative pronoun.</li> </ul> <p><b><u>Newspaper report</u></b></p> <ul style="list-style-type: none"> <li>Distinguish between the language of speech and writing and choose the appropriate register (dialogue - informal/formal).</li> <li>Uses expanded noun phrases to convey complicated information concisely.</li> </ul> <p><b><u>Descriptive poetry</u></b></p> <ul style="list-style-type: none"> <li>Select appropriate vocabulary, and understand how such choices can change and enhance meaning (figurative language use of simile, metaphor, and hyperbole)</li> <li>Performs their own compositions, using appropriate intonation, volume, and movement so that meaning is clear.</li> </ul> <p><b><u>Information text</u></b></p> <ul style="list-style-type: none"> <li>Notes and develops initial ideas, drawing on reading and research where necessary,</li> <li>Uses some devices to build cohesion within a paragraph (e.g. adverbials, pronouns, tense).</li> </ul>	<p>Families can support learning in the following ways:</p> <ul style="list-style-type: none"> <li>Accessing weekly home learning tasks via Google Classroom</li> <li>Supporting the development of times tables skills via regular practice on Times Tables Rock Stars</li> <li>Reading daily at home</li> <li>Accessing MyMaths for weekly maths homework (KS2)</li> <li>Borrow and explore books from the library about materials.</li> <li>Discuss how bridges are constructed and research Isambard Kingdom Brunel through trusted websites such as BBC Bitesize   <a href="https://www.bbc.co.uk/teach/class-clips-video/true-stories-isambard-kingdom-brunel/zjrtvk7">https://www.bbc.co.uk/teach/class-clips-video/true-stories-isambard-kingdom-brunel/zjrtvk7</a></li> <li>Suggested visits to the Science Museum.                      Brunel Museum in London</li> </ul>