# Entry Level Science Resources – Topic C1

These resources are aimed at Entry Level Science students. They have been adapted from the legacy R591 resources published by OUP to meet the requirements of the R483 Entry Level Science specification.

They could also be used as a starting point and a recap of Key Stage 3 content for your lower attaining students studying GCSE Combined Science. OCR Entry Level Science is mapped to both OCR GCSE Combined Science A and OCR GCSE Combined Science B.

The table below shows this mapping for Topic C1.

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| **Entry Level ref** | **Entry Level statement** | **GCSE (9–1) Gateway A combined science ref.** | **GCSE (9–1) Gateway A combined science statement** | **GCSE (9–1) 21st Century Science B combined science ref.** | **GCSE (9–1) 21st Century Science B combined science statement** |
| ELC1a | Explain states of matter using the particle model. | C1.1a | describe the main features of the particle model in terms of states of matter and change of state | C1.1.1 | recall and explain the main features of the particle model in terms of the states of matter and change of state, distinguishing between physical and chemical changes and recognise that the particles themselves do not have the same properties as the bulk substances |
| ELC1b | Explain changes of state using the particle model. | C1.1a | describe the main features of the particle model in terms of states of matter and change of state | C1.1.1 | recall and explain the main features of the particle model in terms of the states of matter and change of state, distinguishing between physical and chemical changes and recognise that the particles themselves do not have the same properties as the bulk substances |

| **Entry Level ref** | **Entry Level statement** | **GCSE (9–1) Gateway A combined science ref.** | **GCSE (9–1) Gateway A combined science statement** | **GCSE (9–1) 21st Century Science B combined science ref.** | **GCSE (9–1) 21st Century Science B combined science statement** |
| --- | --- | --- | --- | --- | --- |
| ELC1c | Describe the physical states of products and reactants using state symbols: (s), (l), (g) and (aq). | C3.1f | describe the physical states of products and reactants using state symbols (s, l, g and aq) | C2.4.4 | describe the physical states of products and reactants using state symbols (s, l, g and aq) |
| ELC1d | Plan an experiment to work out the melting point of a solid. | C2.1b | use melting point data to distinguish pure from impure substances | C5.1.3 | use melting point data to distinguish pure from impure substances |
| ELC1e | Use data to predict states of substances under given conditions. | C2.3e | use data to predict states of substances under given conditions, including data such as temperature and how this may be linked to changes of state  | C1.1.4 | use data to predict states of substances under given conditions |
| ELC1f | Explain chemical reactions using the particle model. | C1.1b | explain in terms of the particle model the distinction between physical changes and chemical changes | C1.1.1 | recall and explain the main features of the particle model in terms of the states of matter and change of state, distinguishing between physical and chemical changes and recognise that the particles themselves do not have the same properties as the bulk substances |
| ELC1g | Use ideas about the behaviour of particles and bonds to explain what happens during of state. | C2.3d | use ideas about energy transfers and the relative strength of chemical bonds and intermolecular forces to explain the different temperatures at which changes of state occur | C1.1.3 | use ideas about energy transfers and the relative strength of forces between particles to explain the different temperatures at which changes of state occur |
| ELC1h | Know that during a change of state the mass of the substance remains the same. | C3.1k | recall and use the law of conservation of mass | C5.2.1 | recall and use the law of conservation of mass |
| ELC1i | Explain using the particle model why in a non-enclosed reaction there may be loss of mass during a chemical reaction limited to one of the products being a gas. | C3.1l | explain any observed changes in mass in non-enclosed systems during a chemical reaction and explain them using the particle model | C5.2.2 | explain any observed changes in mass in non-enclosed systems during a chemical reaction and explain them using the particle model |
| ELC1j | Know that some reactions may be reversed e.g. forward reaction: a+b g c+d and backwards: c+d g a+b. | C5.2a | recall that some reactions may be reversed by altering the reaction conditions | C6.3.1 | recall that some reactions may be reversed by altering the reaction conditions including: a) reversible reactions are shown by the symbol ⇋b) reversible reactions (in closed systems) do not reach 100% yield |

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