CP12 Particle Model

CP12a Particles and density

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Learning outcome | Had a look | Nearly there | Nailed it! |
|  | Describe the arrangements of particles in solids, liquids and gases. |  |  |  |
| D:\WD\Live Job\2016\Sep-16\regcsesciencewordformattingsb3sc13sp4andsp5\Required_Input\Required_Input\TTPP progression steps icons\Progression_icon_L7.jpg | Use the particle model to explain the different properties of solids, liquids and gases. |  |  |  |
|  | Recall the formula relating density, mass and volume. |  |  |  |
| D:\WD\Live Job\2016\Sep-16\regcsesciencewordformattingsb3sc13sp4andsp5\Required_Input\Required_Input\TTPP progression steps icons\Progression_icon_L7.jpg | Use the formula relating density, mass and volume. |  |  |  |
| D:\WD\Live Job\2016\Sep-16\regcsesciencewordformattingsb3sc13sp4andsp5\Required_Input\Required_Input\TTPP progression steps icons\Progression_icon_L7.jpg | Use the particle model to explain why solids, liquids and gases have different densities. |  |  |  |
|  | Describe what happens to the mass of a substance when it changes state. |  |  |  |

CP12b Energy and changes of state

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Learning outcome | Had a look | Nearly there | Nailed it! |
|  | Explain how heating affects the particles in a substance or object, including changes of state. |  |  |  |
|  | Describe how the temperature of an object changes with time while being heated or cooled to make it change state. |  |  |  |
|  | Define the term specific heat capacity. |  |  |  |
|  | Define the term specific latent heat. |  |  |  |
|  | Explain the difference between specific heat capacity and specific latent heat. |  |  |  |
|  | Explain ways of reducing unwanted energy transfer through thermal insulation. |  |  |  |

CP12c Energy calculations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Learning outcome | Had a look | Nearly there | Nailed it! |
|  | Use the formula relating change in thermal energy, mass, temperature change and specific heat capacity. |  |  |  |
|  | Use the formula relating thermal energy, mass and specific latent heat. |  |  |  |
|  | Recall that the value of specific latent heat for a substance is different for melting/solidifying and for evaporating/condensing. |  |  |  |

CP12d Gas temperature and pressure

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| --- | --- | --- | --- | --- |
| Step | Learning outcome | Had a look | Nearly there | Nailed it! |
|  | Explain how the movement of particles causes gas pressure. |  |  |  |
|  | Explain how changing the temperature of a gas affects the speed of its particles. |  |  |  |
|  | Explain how temperature affects the pressure of a fixed mass of gas at constant volume. |  |  |  |
|  | Explain the significance of absolute zero. |  |  |  |
|  | Convert temperatures between the Kelvin and Celsius temperature scales. |  |  |  |

CP13 Forces and Matter (Paper 6)

CP13a Bending and stretching

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Learning outcome | Had a look | Nearly there | Nailed it! |
|  | Explain that more than one force is needed to distort an object. |  |  |  |
|  | Describe the difference between elastic and inelastic distortion. |  |  |  |
|  | Describe the relationship between force and extension for a spring. |  |  |  |
|  | Describe the relationship between force and extension for a rubber band. |  |  |  |
|  | Compare the force–extension relationship for different objects. |  |  |  |

CP13b Extension and energy transfers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Learning outcome | Had a look | Nearly there | Nailed it! |
|  | Recall the equation that links force, extension and the spring constant. |  |  |  |
| D:\WD\Live Job\2016\Sep-16\regcsesciencewordformattingsb3sc13sp4andsp5\Required_Input\Required_Input\TTPP progression steps icons\Progression_icon_L7.jpg | Use the formula relating force, extension and spring constant. |  |  |  |
|  | Recall that work has to be done to stretch a spring. |  |  |  |
| D:\WD\Live Job\2016\Sep-16\regcsesciencewordformattingsb3sc13sp4andsp5\Required_Input\Required_Input\TTPP progression steps icons\Progression_icon_L7.jpg | Use the formula relating the energy transferred to the extension of a spring. |  |  |  |