**Colton Hills Community School medium term planning**

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| **Topic title:**.. P3 Particles | **Year:** … 10**Term:** …Autumn | **Why we teach this:**… To understand how particles behave and how this affects the properties of materials | **Why we teach this here:**… This builds on our understanding of atoms and particles so that we can start to look at how particles behave. |
| **Big questions:**1. What is density?
2. What unit is density measured in?
3. Which state has the strongest forces of attraction?
4. How is pressure created in gases?
5. If gas temperature increases what happens to the pressure?
6. How do you calculate internal energy?
7. What is work done?
8. What is specific latent heat?
 | **Builds on previous topics:**… KS3 Physics, P1 Energy, C1 Atoms | **Links to future topics:**… P4 Atoms, Physics, Biology and Chemistry  |
| **Key knowledge Triple*** Density
* Required practical 5
* Particle model
* Particle model, density and changing state
* Chemical and physical changes
* Internal energy
* SHC
* SLH
* Motion in a gas
* Pressure in gas
* Temperature and pressure
* Pressure and volume
* Boyle’s Law
* Pressure + volume equations
* Work done on a gas
 | **Key knowledge Combined:*** Density
* Required practical 4
* Particle model
* Particle model, density and changing state
* Chemical and physical changes
* Internal energy
* SHC
* SLH
* Motion and pressure in a gas
* Temperature and pressure
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| **Skills developed:**Researching information, make predictions using scientific knowledge and understanding, analyse observations and data using tables and graphs, select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent, and control variables where appropriate.Application of knowledge, making links, critical evaluation. |
| **Mini/Interim assessments:*** Multiple choice questions
* Retrieval questions

**Termly summative assessment:*** End of topic test
 | **Independent study tasks/resources:*** Oak Triple <https://teachers.thenational.academy/units/particle-model-of-matter-a6d5>
* Oak Combined H <https://teachers.thenational.academy/units/particle-model-of-matter-ht-c0e1>
* Oak Combined F <https://teachers.thenational.academy/units/particle-model-of-matter-ft-a3f6>
* Triple H <https://app.senecalearning.com/classroom/course/fe56ca00-05aa-11e8-9a61-01927559cfd5/section/0da89ca0-1d60-11e8-99b3-a37098025206/session>
* Triple F <https://app.senecalearning.com/classroom/course/2670ac10-1d69-11e8-bf76-f14a3ef7c0e6/section/eb52d2e0-1d6b-11e8-8e43-0b8b5e91224a/session>
* Combined F <https://app.senecalearning.com/classroom/course/f4627c20-1e1d-11e8-b99c-3168302284a4/section/cf2b6ff0-1e1f-11e8-820c-35b74d6c4779/session>
* Combined H <https://app.senecalearning.com/classroom/course/e7813ccb-376e-4375-9477-e8baddd262ba/section/0ca1452c-87dd-4213-a8a8-61feeeeaa67f/session>
* Bitesize triple <https://www.bbc.co.uk/bitesize/topics/zxsh2nb>
* Bitesize combined <https://www.bbc.co.uk/bitesize/topics/z3ybb82>
 | **Key vocabulary 1:**DensityParticlesChange of stateInternal energySpecific heat capacitySpecific latent heatMotionPressureTemperature  | **Key vocabulary 2:**Boyle’s LawVolumePotential energyKinetic energyWork doneChemicalPhysical |
| **Cultural capital opportunities:** … Technological advances <https://www.iop.org/explore-physics/technology-our-lives> , history of technological advances <https://spark.iop.org/collections/stories-physics-electricity-magnetism>. Careers and applications. | **Whole school Curricular Concept links:**… technological progress  |

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| **Week/Phase** | **Key Features** |
| 1 | **Small Questions:** … |
| **Key Activities/Resources:**… | **Retrieval focus:**…**Independent study:**… |
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| 2 | **Small Questions:** … |
| **Key Activities/Resources:**… | **Retrieval focus:**…**Independent study:**… |
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| 3 | **Small Questions:** … |
| **Key Activities/Resources:**… | **Retrieval focus:**…**Independent study:**… |
| **Week/Phase** | **Key Features** |
| 4 | **Small Questions:** … |
| **Key Activities/Resources:**… | **Retrieval focus:**…**Independent study:**… |
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| 5 | **Small Questions:** … |
| **Key Activities/Resources:**… | **Retrieval focus:**…**Independent study:**… |
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| 6 | **Small Questions:** … |
| **Key Activities/Resources:** … | **Retrieval focus:**…**Independent study:**… |