# *PLANNING SUPPORT BOOKLET*

**J250**

**For first teaching in 2016**

This support material booklet is designed to accompany the

OCR GCSE (9–1) specification in Gateway Combined Science A - Physics

***DISCLAIMER***

This resource was designed using the most up to date information from the specification at the time it was published. Specifications are updated over time, which means there may be contradictions between the resource and the specification, therefore please use the information on the latest specification at all times.If you do notice a discrepancy please contact us on the following email address: [resources.feedback@ocr.org.uk](mailto:resources.feedback@ocr.org.uk)

# Introduction

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This support material is designed to accompany the new OCR GCSE (9-1) specification for first teaching from September 2016 for:

* [Combined Science A (Gateway Science – J250)](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-combined-science-a-j250-from-2016/)

We recognise that the number of hours available in timetable can vary considerably from school to school, and year to year. As such, these ***suggested*** teaching hours have been developed on the basis of the experience of the Science Subject Specialist team in delivering GCSE sciences in school. The hours are what we consider ideal for providing the best opportunity for high quality teaching and engagement of the learners in all aspects of learning science.

While Combined Science is a double award GCSE formed from the three separate science GCSEs, the DfE required subject content is greater than a strict two-thirds of the separate science qualifications, hence the suggested hours here are greater than a strict two-thirds of the separate science hours.

The ***suggested*** hours take into account all aspects of teaching, including pre- and post-assessment. As a linear course, we would recommend on-going revision of key concepts throughout the course to support learner’s learning. This can help to minimise the amount of re-teaching necessary at the end of the course, and allow for focused preparation for exams on higher level skills (e.g. making conceptual links between the topics) and exam technique.

Actual teaching hours will also depend on the amount of practical work done within each topic and the emphasis placed on development of practical skills in various areas, as well as use of contexts, case studies and other work to support depth of understanding and application of knowledge and understanding. It will also depend on the level of prior knowledge and understanding that learners bring to the course.

The table follows the order of the topics in the specification. It is not implied that centres teach the specification topics in the order shown. Centres are free to teach the specification in the order that suits them.

Should you wish to speak to a member of the Science Subject Team regarding teaching hours and scheme of work planning, we are available at [scienceGCSE@ocr.org.uk](mailto:scienceGCSE@ocr.org.uk) or 01223 553998.

## Delivery guides

Delivery guides are individual teacher guides available from the qualification pages:

[http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-combined-science-a-j250-from-2016/#resources](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-combined-science-a-j250-from-2016/" \l "resources)

These Delivery guides provide further guidance and suggestions for teaching of individual topics, including links to a range of activities that may be used and guidance on resolving common misconceptions.

## Practical work

Specification Topic CS7 (Practical skills) is not included explicitly in the Planning Guidance table. The expectation is that the practical skills are developed throughout the course and in support of conceptual understanding.

Suggestions where the PAG activities can be included are given in the table below. This is by no means an exhaustive list of potential practical activities that can be used in teaching and learning of Physics.

Suggested activities are available under “Teaching and Learning Resources / Practical Activities” on the qualification page: http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-combined-science-a-j250-from-2016/#resources.

An optional activity tracker is available at <http://www.ocr.org.uk/Images/323483-gcse-combined-science-practical-tracker.zip>.

An optional learner record sheet is available at <http://www.ocr.org.uk/Images/304431-gcse-combined-science-learner-record-sheet.doc>.

A sample set of activities that gives learners the opportunity to cover all apparatus and techniques is available at <http://social.ocr.org.uk/groups/science/resources/gcse-sciences-example-sets-practical-activities>.

| **Topic** | **Teaching hours**  combined | | **Delivery Guides** | **PAG opportunities** |
| --- | --- | --- | --- | --- |
| **Topic 1: Matter** | | | | |
| 1.1 The particle model | 3 hours | Matter – delivery guide | | PAG1: Determine the densities of a variety of objects both solid and liquid |
| 1.2 Changes of state | 6 hours | Matter – delivery guide | | PAG5: Determine the specific heat capacity of a metal |
| **Total for topic 1 = 9 hours** | | | | |
| **Topic 2: Forces** | | | | |
| 2.1 Motion | 5 hours | Forces and Motion – delivery guide | | PAG3: Investigate acceleration of a trolley down a ramp |
| 2.2 Newton’s laws | 11 hours | Forces and Motion – delivery guide | |  |
| 2.3 Forces in action | 4 hours | Forces and Motion – delivery guide | | PAG 2: Investigate the effect of forces on springs |
| **Total for topic 2 = 20 hours** | | | | |
| **Topic 3 Electricity and magnetism** | | | | |
| 3.1 Static and Charge | 3 hours | Electricity – delivery guide | |  |
| 3.2 Simple circuits | 7 hours | Electricity – delivery guide | | PAG6: Investigate the I-V characteristics of circuit elements  PAG7: Investigate the brightness of bulbs in series and parallel |
| 3.3 Magnets and magnetic fields | 7 hours | Magnetism – delivery guide | |  |
| **Total for topic 3 = 17 hours** | | | | |
| **Topic 4 Waves and radioactivity** | | | | |
| 4.1 Wave behaviour | 4 hours | Waves – delivery guide | | PAG4: Measuring the speed, frequency and wavelength of a wave |
| 4.2 The electromagnetic spectrum | 5 hours | Waves – delivery guide | |  |
| 4.3 Radioactivity | 7 hours | Radioactivity – delivery guide | |  |
| **Total for topic 4 = 16 hours** | | | | |
| **Topic 5 Energy** | | | | |
| 5.1 Work done | 5 hours | Energy – delivery guide | |  |
| 5.2 Power and efficiency | 6 hours | Energy – delivery guide | |  |
| **Total for topic 5 = 11 hours** | | | | |
| **Topic 6 Global Challenges** | | | | |
| 6.1 Physics on the move | 4 hours | Global challenges – delivery guide | |  |
| 6.2 Powering Earth | 5 hours | Global challenges – delivery guide | |  |
| **Total for topic 6 = 9 hours** | | | | |
| **Total teaching hours = 82 hours** | | | | |

Statements shown in **bold** type will only be tested in the Higher Tier papers. All other statements will be assessed in both Foundation and Higher Tier papers

# Outline Scheme of Work: P1 – Matter

## Total suggested teaching time – 9 hours

### P1.1 The particle model (3 hours)

|  |  |
| --- | --- |
| Links to KS3 Subject content  * a simple (Dalton) atomic model * differences between atoms, elements and compounds * chemical symbols and formulae for elements and compounds * similarities and differences, including density differences, between solids, liquids and gases * the differences in arrangements, in motion and in closeness of particles explaining changes of state, shape and density, the anomaly of ice-water transition * atoms and molecules as particles | |
| Links to Mathematical Skills  * M1a * M1b * M1c * M3c * M5b | Links to Practical Activity Groups (PAGs)  * PAG 1: Determine the densities of a variety of objects both solid and liquid |

# Overview of P1.1 The particle model

| Lesson | Statements (bold = Higher tier) | Teaching activities | Notes |
| --- | --- | --- | --- |
| 1 (1hr) | P1.1a describe how and why the atomic model has changed over time  P1.1b describe the atom as a positively charged nucleus surrounded by negatively charged electrons, with the nuclear radius much smaller than that of the atom and with almost all of the mass in the nucleus  P1.1c recall the typical size (order of magnitude) of atoms and small molecules | Starter options: Thompson’s plum pudding model of the atom A clip just over 2 minutes in length summarising Thompson’s plum pudding model.  [View full activity in 1.1 The particle model - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg001-p11-the-particle-model?activity=294505#294505)  **Main options:** Facebook activity  General template that learners can use to represent any historical figure. This can be used for the scientists involved in the development of the atomic structure.  [View full activity in 1.1 The particle model - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg001-p11-the-particle-model?activity=294507#294507) Resources to develop a learner timeline 1 A research link for learners to find information about the development of the atomic model. This can be used to make a timeline.  [View full activity in 1.1 The particle model - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg001-p11-the-particle-model?activity=294513#294513) Visualising the size of an atom and small molecules This short instruction sheet provides teachers with ideas to use in the classroom that will enable learners to better visualise the sizes of atoms.  [View full activity in 1.1 The particle model - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg001-p11-the-particle-model?activity=294509#294509) Plenary options: Discovering the nucleus Three levelled worksheets based on Geiger and Marsden’s experiments. They take the learners through the practical and the results and ask a range of questions to follow.  [View full activity in 1.1 The particle model - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg001-p11-the-particle-model?activity=294517#294517) Geiger and Marsden’s experiment An animation to allow learners to be guided through the experiment and to check their understanding.  [View full activity in 1.1 The particle model - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg001-p11-the-particle-model?activity=294519#294519) | Link to Delivery guide Matter  <http://www.ocr.org.uk/Images/283338-matter-delivery-guide.pdf>  Link to transition guide Matter  <http://www.ocr.org.uk/Images/293467-matter-ks3-ks4-transition-guide.pdf> |
| 2(1hr) | P1.1d define density  P1.1e explain the differences in density between the different states of matter in terms of the arrangements of the atoms and molecules  P1.1f apply the relationship between density, mass and volume to changes where mass is conserved (M1a, M1b, M1c, M3c)  PM1.1i recall and apply: density (kg/m3) = mass (kg) / volume (m3) | Starter: Density: A story of Archimedes and the gold crown A video summarising the story of Archimedes and the gold crown which is a good introduction to getting learners thinking about density and its relationship with mass and volume.  [View full activity in 1.1 The particle model - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg001-p11-the-particle-model?activity=294521#294521) Main options: Density experiments Numerous free videos and experiment sheets for density experiments that can be printed straight from the website and used for whole class practical activities.  [View full activity in 1.1 The particle model - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg001-p11-the-particle-model?activity=294511#294511)  **Plenary**: Question 19 Paper 1 Foundation tier SAM  <http://www.ocr.org.uk/Images/234625-unit-j249-01-physics-foundation-tier-paper-1-sample-assessment-material.pdf> | Link to Delivery guide [Matter](https://www.ocr.org.uk/Images/283338-matter-delivery-guide.pdf)  Link to transition guide [Matter](https://www.ocr.org.uk/Images/293467-matter-ks3-ks4-transition-guide.pdf)  Link to SAM [J249-01](https://www.ocr.org.uk/Images/234625-unit-j249-01-physics-foundation-tier-paper-1-sample-assessment-material.pdf) |
| 3(1hr) | P1.1d define density  P1.1e explain the differences in density between the different states of matter in terms of the arrangements of the atoms and molecules  P1.1f apply the relationship between density, mass and volume to changes where mass is conserved (M1a, M1b, M1c, M3c)  PM1.1i recall and apply: density (kg/m3) = mass (kg) / volume (m3) | **Starter:** How to calculate the density of a person  <https://www.youtube.com/watch?v=druZDtSK1-U>  **Main:** PAG 1: Determining Densities  **Plenary**: Give pupils the [candidate progress sheet](https://www.ocr.org.uk/Images/295647-gcse-physics-learner-record-sheet.doc), from the practical activities section of the webpage. Pupils to tick of skills covered. | Link to PAG activity:  [PAG P1](https://www.ocr.org.uk/Images/293854-pag-activity-physics-materials-suggestion-1.docx) – Determining Densities can be found in the Practical activities section of the subject page.  Link to [candidate progress sheet](https://www.ocr.org.uk/Images/295647-gcse-physics-learner-record-sheet.doc) |

|  |  |  |
| --- | --- | --- |
| **Additional online learning opportunities**  ***As a response to the Covid-19 outbreak, additional online learning opportunities were identified for each topic in June 2020.*** | | |
| **Lesson** | **Statement** | **Teaching activities** |
| 1 | P1.1a, P1.1b | PhET[Animation](https://phet.colorado.edu/en/simulation/rutherford-scattering) for Thomson and Rutherford experiments which can be used to reinforce understanding or to replace the 2nd plenary task. |
| 1 | P1.1a, P1.1b | Brian Cox [video](https://www.youtube.com/watch?v=-FWxd78sOZ8) on the model of the atom can be used as a main activity or flipped learning. Rutherford scattering is from 4.14-4.55. |
| 2 | P1.1d, P1.1e, P1.1f | Cambridge International [video](https://ocr.org.uk/rpgphys15) explaining how density is calculated for an irregular shaped object and a liquid.  This can be shown to students before attempting the experiments themselves. |
| 3 | P1.1d, P1.1e, P1.1f | Past paper [density questions](https://ocr.org.uk/Images/244398-question-paper-unit-b752-02-modules-p4-p5-p6-higher-tier.pdf) and [markscheme](https://www.ocr.org.uk/Images/240386-mark-scheme-unit-b752-02-modules-p4-p5-p6-higher-tier-june.pdf) that can be used by students for homework to consolidate and apply their knowledge. Go to Q15. |

# Outline Scheme of Work: P1 – Matter

## Total suggested teaching time – 9 hours

### P1.2 Changes of state (6 hours)

|  |  |
| --- | --- |
| Links to KS3 Subject content  * conservation of mass changes of state and chemical reactions * changes of state in terms of the particle model * conservation of material and mass, and reversibility, in melting, freezing, evaporation, sublimation, condensation, dissolving * the difference between chemical and physical changes * changes with temperature in motion and spacing of particles * internal energy stored in materials | |
| Links to Mathematical Skills  * M1a * M3c * M3d | Links to Practical Activity Groups (PAGs)  * PAG 5: Investigation of specific heat and specific latent heat |

# Overview of P1.2 Changes of state

| Lesson | Statements (bold = Higher tier) | Teaching activities | Notes |
| --- | --- | --- | --- |
| 1(1hr) | P1.2a describe how mass is conserved when substances melt, freeze, evaporate, condense or sublimate  P1.2b describe that these physical changes differ from chemical changes because the material recovers its original properties if the change is reversed | Starter: Sublime iodine A short video clip showing the sublimation of iodine.  [View full activity in 1.2 Changes of state - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg002-p12-changes-of-state?activity=294561#294561)  **Main:** Melting and freezing stearic acid practical  <http://www.rsc.org/learn-chemistry/resource/res00001747/melting-and-freezing-stearic-acid?cmpid=CMP00005262>  **Plenary:** Pupils to write definitions of the key term: Melt, freeze, evaporate, condense and sublimate. | Link to Delivery guide [Matter](http://www.ocr.org.uk/Images/283338-matter-delivery-guide.pdf)  Link to transition guide [Matter](http://www.ocr.org.uk/Images/293467-matter-ks3-ks4-transition-guide.pdf) |
| 2(1hr) | P1.2c describe how heating a system will change the energy stored within the system and raise its temperature or produce changes of state | Starter: video changing state <https://www.youtube.com/watch?v=v4zq_uTl7Ho> Main: Probing for learners understanding This is a website to assist teachers new to delivering some of the concepts in this topic.  [View full activity in 1.2 Changes of state - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg002-p12-changes-of-state?activity=294575#294575)  Practical and graph for heating curve of ice – water - steam  <http://www.kentchemistry.com/links/Matter/HeatingCurve.htm>  **Plenary:** Pupils annotate a heating graph to show where changes of states occur. Pupils answer the question: Why does the temperature stay the same during a change of state? | Link to Delivery guide [Matter](http://www.ocr.org.uk/Images/283338-matter-delivery-guide.pdf)  Link to transition guide [Matter](http://www.ocr.org.uk/Images/293467-matter-ks3-ks4-transition-guide.pdf) |
| 3(1hr) | P1.2d define the term specific heat capacity and distinguish between it and the term specific latent heat  P1.2e apply the relationship between change in internal energy of a material and its mass, specific heat capacity and temperature change to calculate the energy change involved (M1a, M3c, M3d)  PM1.2i apply: change in thermal energy (J) = mass (kg) x specific heat capacity (J/kg°C) x change in temperature (°C) | Starter: Specific heat capacity video A short video showing what specific heat capacity is and how it can be calculated.  [View full activity in 1.2 Changes of state - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg002-p12-changes-of-state?activity=294563#294563) Main: Practical – specific heat capacity of water <http://www.instructables.com/id/Measure-the-specific-heat-of-water-and-other-fluid/> Plenary Options: Specific heat capacity puzzle Learners should work in small groups with one complete set of cards. The aim is to answer the questions using the information given.  [View full activity in 1.2 Changes of state - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg002-p12-changes-of-state?activity=294567#294567)  [SAM](http://www.ocr.org.uk/Images/234625-unit-j249-01-physics-foundation-tier-paper-1-sample-assessment-material.pdf) question 22 J249-01 F | Link to Delivery guide [Matter](http://www.ocr.org.uk/Images/283338-matter-delivery-guide.pdf)  Link to transition guide [Matter](http://www.ocr.org.uk/Images/293467-matter-ks3-ks4-transition-guide.pdf)  Link to SAM [J249-01](http://www.ocr.org.uk/Images/234625-unit-j249-01-physics-foundation-tier-paper-1-sample-assessment-material.pdf) |
| 4(1hr) | P1.2d define the term specific heat capacity and distinguish between it and the term specific latent heat  P1.2e apply the relationship between change in internal energy of a material and its mass, specific heat capacity and temperature change to calculate the energy change involved (M1a, M3c, M3d)  PM1.2i apply: change in thermal energy (J) = mass (kg) x specific heat capacity (J/kg°C) x change in temperature (°C) | **Starter:** Demo PAG apparatus  **Main:** PAG 5: Determining the specific heat capacity of a metal  **Plenary**: Give pupils the [candidate progress sheet](https://www.ocr.org.uk/Images/295647-gcse-physics-learner-record-sheet.doc), from the practical activities section of the webpage. Pupils to tick of skills covered. | Link to Delivery guide [Matter](http://www.ocr.org.uk/Images/283338-matter-delivery-guide.pdf)  Link to transition guide [Matter](http://www.ocr.org.uk/Images/293467-matter-ks3-ks4-transition-guide.pdf)  PAG 5  [PAG P5](https://www.ocr.org.uk/Images/309692-pag-activity-physics-energy-suggestion-1.docx) – Determining the specific heat capacity of a metal |
| 5(1hr) | P1.2d define the term specific heat capacity and distinguish between it and the term specific latent heat  P1.2f apply the relationship between specific latent heat and mass to calculate the energy change involved in a change of state (M1a, M3c, M3d)  PM1.2ii apply: thermal energy for a change in state (J) = mass (kg) x specific latent heat (J/kg) | Starter: Introduction to specific latent heat <https://www.youtube.com/watch?v=SzNAoyIGUeA> Main: Latent heat of fusion of ice A downloadable document covering a practical that can be carried out with a class to determine the specific latent heat of ice.  [View full activity in 1.2 Changes of state - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg002-p12-changes-of-state?activity=294551#294551)  **Plenary options:**  Specific heat capacity and latent heat: Cyber physics Resources: <http://www.cyberphysics.co.uk/Q&A/KS4/SHC/questionsSHC_GCSE.html>  A series of exam based questions which learners can use to apply their equations. The questions include solutions and a quick explanation about each key area. Many other topics can also be found. | Link to Delivery guide [Matter](http://www.ocr.org.uk/Images/283338-matter-delivery-guide.pdf)  Link to transition guide [Matter](http://www.ocr.org.uk/Images/293467-matter-ks3-ks4-transition-guide.pdf)  Note: Question 4 answer is 1130 000 J |
| 6(1hr) | P1.2g explain how the motion of the molecules in a gas is related both to its temperature and its pressure  P1.2h explain the relationship between the temperature of a gas and its pressure at constant volume (qualitative only) | Starter: Boyle’s law animation (Pressure x volume = a constant) This is a learner revision site; however the animation is really helpful to introduce the concept of Boyle’s law.  [View full activity in 1.3 Pressure - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg003-p13-pressure?activity=294612#294612)  **Main options:** The physics hyper textbook  Useful mini practical’s that can be completed very simply to demonstrate what happens during changes in volume creating a temperature change.  [View full activity in 1.3 Pressure - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg003-p13-pressure?activity=294619#294619)  Gas laws learner activity  A website link which takes you to a virtual gas lab where temperature and pressure can be altered.  [View full activity in 1.3 Pressure - Online delivery guide](http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-physics-a-j249-from-2016/delivery-guide/topic-gpat001-p1-matter/delivery-guide-gpadg003-p13-pressure?activity=294621#294621) Plenary: Give pupils examples of systems and ask them what will happen to the pressure if you increase/decrease the temperature/volume | Link to Delivery guide [Matter](http://www.ocr.org.uk/Images/283338-matter-delivery-guide.pdf)  Link to transition guide [Matter](http://www.ocr.org.uk/Images/293467-matter-ks3-ks4-transition-guide.pdf) |
| 7 | Chapter P1 End of topic quiz | Pupils to complete the end of chapter quiz P1. After completion pupils to swap and mark quizzes.Pupils use their quizzes to create a revision list from Chapter 1 | End of chapter [quiz P1](https://interchange.ocr.org.uk/Downloads/Gateway-Combined-Science-Quizzes.zip). |

|  |  |  |
| --- | --- | --- |
| Additional online learning opportunities ***As a response to the Covid-19 outbreak, additional online learning opportunities were identified for each topic in June 2020.*** | | |
| Lesson | Statement | Teaching activities |
| 2 | P1.2c  P1.2f | This [colourful online video](https://www.youtube.com/watch?v=3itqmCtmJPc) can be used in place of the practical and graph video for heating curve of ice – water – steam. |
| 3 | P1.2c, P1.2d, P1.2e  PM1.2i | [Video](https://www.youtube.com/watch?v=HAPmwu7byGM) on the specific heat capacity experiment including a discussion on possible errors.  This can be used as a main activity or flipped learning activity before students carry out the experiment themselves. |
| 6 | P1.2g | [Worksheet](https://www.tes.com/teaching-resource/boyle-s-law-questions-for-gcse-11369938) on the relationship between pressure and volume of a gas can be used as homework. |
| 6 | P1.2g, P1.2h, | BBC Bitesize [MCQ quiz](https://www.bbc.co.uk/bitesize/guides/zwvd6yc/test) which can be used as a plenary (or homework) at end of lesson 3. |

We’d like to know your view on the resources we produce. By clicking on ‘[Like’](mailto:resources.feedback@ocr.org.uk?subject=I%20liked%20the%20GCSE%20Combined%20Science%20Physics%20A%20SOW%20P1) or ‘[Dislike’](mailto:resources.feedback@ocr.org.uk?subject=I%20disliked%20the%20GCSE%20Combined%20Science%20Physics%20A%20SOW%20P1) you can help us to ensure that our resources work for you. When the email template pops up please add additional comments if you wish and then just click ‘Send’. Thank you.

If you do not currently offer this OCR qualification but would like to do so, please complete the Expression of Interest Form which can be found here: [www.ocr.org.uk/expression-of-interest](http://www.ocr.org.uk/expression-of-interest)

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