International GCSE Physics

Please note that a number of minor amendments have been made to the Edexcel International GCSE Physics specification.

The changes clarify the demands of the specification, and demonstrate links to practical activities. The majority of these changes will **not** require you to revisit areas of the specification that you have already taught. However, a small number of changes involve the removal of material from Double Award into separate sciences; or the addition of new material. There is also a small change in the Assessment Objective weightings in the question papers, although the style of the question papers is unchanged. It has been necessary to make these changes immediately for first examination in the June 2013 series.

If you have any questions about these changes, please contact the Edexcel Science Advisor (ScienceSubjectAdvisor@edexcelexperts.co.uk) for all subject specific enquires. Alternatively, please contact your Regional Development Manager.

The mapping document below outlines the changes to the Physics specification. Please take the time to review this document. To assist you with the nature of the changes, they have been colour-coded as follows:

Changes in red show where the command word used in the specification has changed. This is unlikely to affect what you have already taught, but may help to indicate the depth of knowledge that an examination question will require.

Changes in blue show where a specification statement has been reworded to highlight a practical opportunity. This should not affect what you have already taught, as practical-based questions (AO3) could still be asked on any aspect of the specification.

Changes in green show where minor changes have been made to clarify the meaning or depth of a specification statement, or to improve its wording. There is unlikely to be any effect on what you have already taught.

Changes in pink show where new material has been added, or a deletion has occurred. In some cases, a specification statement has been removed from Science (Double Award) and will only appear in the separate science papers. These changes may require you to look back at areas that you have already taught to ensure that the entire specification has been covered; or that candidates for Science (Double Award) know which areas they will no longer be examined on.

NB - Please contact the Science Subject Advisor team for assistance if you have a black and white version of this document.

Section 1: Forces and motion

1.2 "plot and interpret distance–time graphs"

1.3 "know and use the relationship…"

new (1.4) "describe experiments to investigate the motion of everyday objects such as toy cars or tennis balls"
this has not been highlighted as new material, as it has been regularly tested as an associated practical skill within Section 1(b)

1.4 "know and use the relationship…"

1.5 "plot and interpret velocity–time graphs"

1.8 "describe the effects of forces between bodies such as changes in speed, shape or direction"

1.9 "identify different types of force such as gravitational or electrostatic"

1.11 "**understand that force is a vector quantity**"

1.12 "**find the resultant force of forces that act along a line**"

1.14 "know and use the relationship…"

1.15 "know and use the relationship…"

new (1.18) "describe experiments to investigate the forces acting on falling objects, such as sycamore seeds or parachutes"

1.18 **"know and use the relationship…"**

1.22 "**demonstrate an understanding of Newton's third law**"

1.23 "know and use the relationship…"

1.25 "**know and use the principle…**"

1.27 "describe experiments to investigate how extension varies…"

1.28 "understand that the initial linear region…"

1.29 "describe elastic behaviour as the ability of a material to recover…"

1.30 "recall that the moon orbits the Earth and that some planets also have moons"
this outcome has been deleted, but the content has been used to create new specification point 1.34

1.32 "explain that gravitational force…"
this has been re-written to split the middle bullet point "causes the moon and artificial satellites to orbit the Earth" into "causes moons to orbit planets" and "causes artificial satellites to orbit the Earth"

1.34 "describe the differences in the orbits of comets, moons and planets"
this has been re-written to incorporate the deleted 1.30, and now becomes before outcome 1.33 ("use the relationship...", renumbered 1.35)

1.35 "understand that..."
note that this statement has also been re-written so that the information appears in decreasing size, from universe to galaxy to solar system

Section 2: Electricity

2.2 "understand and identify the hazards…"

2.3 "understand the uses of insulation…"

2.4 combined to form a new statement: "understand that a current in a resistor
& 2.5 results in the electrical transfer of energy and an increase in temperature, and how this can be used in a variety of domestic contexts"

2.6 "know and use the relationship…"

2.8 "understand the difference between mains electricity being alternating current (a.c.) and direct current (d.c.) being supplied by a cell or battery"

2.15 "know and use the relationship…"

2.17 "know and use the relationship…"

2.18 "know that electric current in solid metallic conductors…"

2.19 **"understand that..."**

2.21 **"describe experiments to investigate how insulating materials..."**

2.23 **"understand that there are forces of attraction..."**

2.25 **"explain the potential dangers of electrostatic charges..."**

2.26 **"explain some uses of electrostatic charges..."**

Section 3: Waves

3.2 "understand the difference between longitudinal and transverse waves and describe experiments to show longitudinal and transverse waves in, for example, ropes, springs and water"

3.3 "define amplitude…"

3.4 "understand that waves transfer energy…"

3.5 "know and use the relationship…"

3.11 "identify the order of the electromagnetic spectrum in terms of…"

3.12 "explain some of the uses of electromagnetic radiations…"

3.13 "understand the detrimental effects… and describe simple protective measures against the risks"

3.14 "understand that light waves are transverse waves…"

3.15 "use the law of reflection (the angle of incidence…"

3.18 "know and use the relationship…"

3.21 "explain the meaning of the critical angle, *c*"

3.22 "know and use the relationship…"

3.26 "understand that sound waves are longitudinal waves and how they can be reflected…"

3.27 "understand that the frequency range…"

3.28 "describe an experiment to measure the speed of sound in air"

3.30 **"describe an experiment using an oscilloscope…"**

3.31 **"relate the pitch of a sound to the frequency…"**

3.32 **"relate the loudness of a sound to the amplitude…"**

Section 4: Energy resources and energy transfer

4.4 "know and use the relationship…"

4.6 "describe how energy transfer may take place…"

4.7 "explain the role of convection…"

4.8 "explain how insulation is used…"

4.9 "know and use the relationship…"

4.11 "know and use the relationship…"

4.12 "know and use the relationship…"

4.16 "describe the energy transfers involved…"

Section 5: Solids, liquids and gases

5.2 "know and use the relationship…"

5.3 "describe experiments to determine density…"

5.4 "know and use the relationship…"

5.6 "know and use the relationship…"

5.7 & 5.8 combined to form a new statement: "**understand the changes that occur when a solid melts to form a liquid, and when a liquid evaporates or boils to form a gas**"

5.9 & 5.10 combined to form a new statement: "**describe the arrangement and motion of particles in solids, liquids and gases**"

5.11 "understand the significance of Brownian motion, as supporting evidence for particle theory"

5.12 "understand that molecules in a gas…"

5.13 "understand why there is an absolute zero of temperature…"

Section 6: Magnetism and electromagnetism

6.2 "**understand that magnets repel and attract…**"

6.3 "**describe the properties…**"

6.6 "describe experiments to investigate the magnetic field pattern…"

6.7 "describe how to use two permanent magnets…"

6.8 "understand that an electric current in a conductor…"

6.11 "**understand that there is a force…**"

6.12 "understand that a force is exerted…"

6.14 "describe how the force on a current-carrying conductor…"

6.15 "understand that a voltage is induced… when a magnetic field changes through it and describe the factors…"

6.17 "**describe the structure of a transformer…**"

6.19 "**know and use the relationship…**"

6.20 "**know and use the relationship…**"

Section 7: Radioactivity and particles

7.9 "explain the sources…"

7.11 "understand the term 'half-life'…"

7.14 "…and describe how the associated risks can be reduced"

7.18 "understand that the fission of U-235…"

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