

Clarification summary

Following the ongoing review of our qualifications we have added the following clarifications to particular specification statements, as detailed in this resource. Please use this resource in conjunction with the [specification](#).

Key: text = a change either in wording or formatting
~~text~~ = this text has either been removed or moved from this position
text = higher content only

Clarification to the 'To include' section:

Specification reference	To include	Reasoning
P1.2d	<u>specific latent heat of fusion and specific latent heat of vaporisation</u>	Clarification of the requirements of the learning outcome
P2.1b	<u>from graphs</u>	Clarification of the requirements of the learning outcome
P2.2e	<u>scale drawings limited to parallel and perpendicular vectors only</u>	Clarification of the expectations for assessment
P2.2k	an idea of the law of conservation of momentum in elastic collisions	Clarification of the expectations for assessment
P5.2d	radio, microwave, <u>infrared</u> , visible (red to violet), <u>ultraviolet</u> , X-rays and <u>gamma rays</u>	For consistency
P5.2i	the use of <u>infrared</u>, X-rays, gamma rays and ultrasound as an alternative in medical imaging	For consistency
P6.2d	knowledge of the term nuclear fission <u>for fission to occur the unstable nucleus must usually first absorb a neutron</u>	Clarification of the expectations for assessment

Clarification to the 'Learning outcomes' section:

Specification reference	Learning outcome	Reasoning
general	Maths skills references have been removed from the learning outcomes column	References are duplicated in the Maths column
P2.2c	represent such forces as vectors	Clarification of the requirements of the learning outcome because original text refers to the previous statement.
P2.2j	explain that inertia is a measure of how difficult it is to change the velocity of an object and that the <u>inertial mass</u> is defined as the ratio of force over acceleration	Clarification of the term
P2.3l	define and calculate the moment of the force in such examples <u>a force</u>	Clarification of the requirements of the learning outcome because original text refers to the previous statement.
P3.2k	explain the design and use of such d.c. circuits for measurement and testing purposes	Clarification of the requirements of the learning outcome because original text refers to the previous statement.
P4.2h	explain how the ratio of the potential differences across the two <u>circuits in a transformer</u> depends on the ratio of the numbers of turns in each	Clarification of the requirements of the learning outcome because original text refers to the previous statement.
P5.1c	describe and apply the relationship between <u>wavelength, frequency</u> and wave velocity	Clarification of the requirements of the learning outcome because original text refers to the previous statement.
P5.1k	describe evidence that in both cases it is the wave and not the water or air itself that travels <u>describe evidence for the cases of ripples on water surfaces and for sound waves in air that it is the wave that travels and not the water or the air</u>	Clarification of the requirements of the learning outcome because original text refers to the previous statement.
P5.2g	give examples of some practical uses of electromagnetic waves in the radio, <u>microwave, infrared</u> , visible, <u>ultraviolet</u> , X-ray and <u>gamma ray</u> regions	For consistency
P5.2h	describe how <u>ultraviolet</u> waves, X-rays and <u>gamma rays</u> can have hazardous effects, notably on human bodily tissues	For consistency
P6.1e	relate these the emissions of <u>alpha particles, beta particles, gamma radiation and neutrons</u> to possible changes in the mass or the charge of the nucleus, or both	Clarification of the requirements of the learning outcome because original text refers to the previous statement.
P6.1g	balance equations representing the emission of <u>alpha, beta or gamma radiation</u> in terms of the masses, and charges of the atoms involved (M1b, M1c, M3c)	For consistency and the removal of maths references that are repeated in the 'Maths' column
P6.1l	recall the differences in the penetration properties of <u>alpha particles, beta particles and gamma rays</u>	For consistency

Clarification to the 'Practical suggestions' section:

Specification reference	Practical suggestions	Reasoning
P5.2g	Use of a phone camera to look at the <u>infrared</u> emitter on a remote control. (PAG P8)	For consistency
P5.2h	Show images of <u>X-rays</u> to discuss how the images are formed; their advantages and disadvantages.	For consistency