

Name _____ Class _____ Date _____

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
P14.1 Reflection of light	I can state the law of reflection.	<input type="checkbox"/>	I can construct accurate ray diagrams showing the reflection of light rays.	<input type="checkbox"/>	I can draw a ray diagram showing the position of an image in a plane mirror.	<input type="checkbox"/>
	I can describe the properties of an image in a mirror in simple terms and investigate reflection with guidance.		I can explain why some surfaces form images during reflection but other do not.	<input type="checkbox"/>	I can use a ray diagrams to discuss why some surfaces form images during reflection but others do not.	<input type="checkbox"/>
	I can state that a real image can be formed on a screen but a virtual image cannot.		I can investigate the law of reflection through practical techniques.	<input type="checkbox"/>	I can evaluate the data from an investigation to discuss the precision and accuracy of any results.	<input type="checkbox"/>
P14.2 Refraction of light	I can state that the path of a ray of light will change at a boundary between two transparent materials.	<input type="checkbox"/>	I can construct a ray diagram showing the refraction of a ray of light at a boundary between two different media.	<input type="checkbox"/>	I can explain how the refraction of light can cause the depth of a material to appear less than it actually is.	<input type="checkbox"/>
	I can identify the angle of incidence and angle of refraction in a ray diagram.		I can describe the dispersion of white light as it passes through a prism.		I can explain the dispersion of light as it passes through a prism in terms of different changes of speed for different wavelengths of light.	
	I can measure the angle of incidence and angle of refraction for a simple refraction.		I can investigate the refraction of light through a glass or Perspex block.		I can analyse the data from a refraction investigation to test different substances to determine whether it fits a suggested relationship.	
P14.3 Light and colour	I can describe the visible spectrum as a continuous series of colours or wavelengths.	<input type="checkbox"/>	I can describe the colours of objects in different colours of light.	<input type="checkbox"/>	I can explain the apparent colour of surfaces using the concept of reflection and absorption when illuminated by white light or combinations of primary colours.	<input type="checkbox"/>
	I can explain the colour of objects in white light in terms of reflection of parts of the spectrum.		I can describe how combinations of filters transmit light.		I can describe the effects of combinations of coloured light and filters on the appearance of a variety of coloured objects	
	I can explain the effect of a single filter on white light.		I can determine the appearance of a white object when illuminated by combinations of primary coloured light.		I can determine the apparent colour of a coloured surface when illuminated by different combinations of red, green, and blue light.	

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P14.4 Lenses	I can distinguish whether a lens is converging or diverging based on a simple ray diagram.	<input type="checkbox"/>	I can identify real and virtual images by using ray diagrams.	<input type="checkbox"/>	I can explain ray paths through a lens in terms of refraction and the focal point.	<input type="checkbox"/>
	I can identify convex (converging) and concave (diverging) lenses from their shapes.		I can calculate the magnification of a lens based on object and image size.		I can perform calculations involving the rearrangement of the magnification equation.	
	I can form images by using a range of lenses.		I can investigate the image-forming properties of a converging lens.		I can construct complete ray diagrams showing image formation by a convex lens with a variety of object positions.	
P14.5 Using lenses	I can identify the optical axis and focal point for a diagram showing image formation.	<input type="checkbox"/>	With support, I can construct ray diagrams showing the formation of images by a convex lens and a concave lens.	<input type="checkbox"/>	From first principles, I can construct ray diagrams showing the formation of images by a convex lens and a concave lens.	<input type="checkbox"/>
	I can identify the position of the image formed by a lens using pre-existing rays on a diagram.		I can describe the image formed by a magnifying glass.		I can describe fully the properties of an image (real, virtual, magnified, diminished, upright, and inverted) based on a ray diagram.	
	I can describe how a focused image can be formed by a camera lens.		I can describe the image formed by a camera lens.		I can use scale diagrams to determine the size of an image produced by a lens.	