

## Physics Y7 Science - KS3 ASSESSMENT DESCRIPTORS

	Discovering 'Learning'	Growing	Emerging	Developing	Secure	Mastered
Forces	Identify some forces acting on objects in everyday situations. Recall that forces are measured in Newtons.	Identify an interaction pair. Identify when the speed or direction of an object changes. Describe how friction arises. Use Hooke's law to identify proportional stretching.	Use a newtonmeter to make predictions about sizes of forces. Describe the difference between balanced and unbalanced forces. Present results in a simple table.	Explain what forces do. Describe what is meant by an interaction pair. Present data on a graph and identify a quantitative relationship in the pattern.	Make predictions about forces in different situations. Explain how forces can deform objects. Apply the effects of forces at a distance.	Explain the differences between contact and non-contact forces. Explain which pairs of forces are acting on an object. Apply Hooke's Law to make quantitative predictions.
Sound	State the link between loudness and amplitude and recall that frequency is measured in hertz.	State the link between loudness and amplitude and recall that frequency is measured in Hz. Recall some parts of the ear.	Predict how sounds will change in different situations. State that sound travels slower than light. Describe how your hearing can be damaged and explain some risks of loud music.	State the range of human hearing and describe how it differs from the ranges of hearing in animals. Use data to compare the speed of sound in different media. Describe how sound is produced and transferred in the ear.	Describe the links between loudness and amplitude and between frequency and pitch. Explain why the speed of sound differs. Explain risks of hearing damage linked to volume and exposure time.	Compare and contrast waves of different amplitude and frequency using a diagram. Explain different ways animals use echolocation. Compare and contrast the ear and the microphone.
Light	State that light travels very fast. Describe reflection and refraction. Name the parts of the eye and camera.	Describe some ways that light interacts with materials. Describe images formed by a lens. Make a model of the eye and camera.	Describe what happens when light interacts with materials. Explain how images are formed in a plane mirror. Describe and explain refraction. Describe how the eye works.	Compare results with other groups, suggesting reasons for differences. Describe what happens when light travels through a lens. Describe how a simple camera forms an image.	Predict how light will interact with different materials. Draw ray diagrams to show reflection. Predict the path of light.	Calculate the distance travelled by light in a light-year. Explain what happens when light travels through a lens. Compare a simple camera with the eye.
Colour	State the primary and secondary colours of light and Describe how they can make secondary colours.	Predict how red light will appear on a white surface.	Explain what happens when light passes through a prism.	Predict the colour of object in red light and the colour of light through different filters.	Explain the formation of secondary colours.	Predict the colour of objects in lights of secondary colours, giving a reason for the prediction.
Space	Name the planets and some other objects in the Solar System.	Identify some patterns in the Solar System.	Describe some similarities and differences between the planets of the Solar System.	Identify patterns in the spacing and diameters of planets.	Explain how the properties and features of planets are linked to their place in the Solar System.	Use data to compare and make predictions about features of planets.
Forces	Identify some forces acting on objects in everyday situations. Recall that forces are measured in Newtons.	Identify an interaction pair. Identify when the speed or direction of an object changes. Describe how friction arises. Use Hooke's law to identify proportional stretching.	Use a newtonmeter to make predictions about sizes of forces. Describe the difference between balanced and unbalanced Science forces. Present results in a simple table.	Explain what forces do. Describe what is meant by an interaction pair. Present data on a graph and identify a quantitative relationship in the pattern.	Make predictions about forces in different situations. Explain how forces can deform objects. Apply the effects of forces at a distance.	Explain the differences between contact and non-contact forces. Explain which pairs of forces are acting on an object. Apply Hooke's Law to make quantitative predictions.

## Physics Y8 Science - KS3 ASSESSMENT DESCRIPTORS

	Discovering 'Learning'	Growing	Emerging	Developing	Secure	Mastered
Electricity	Be able to draw a simple electrical circuit with correct electrical symbols. Be able to explain simple what potential difference (voltage is).	Be able to explain simply what current is. Describe how to measure potential difference. Explain the difference between positive and negative charges.	Be able to explain what resistance is Be able to explain in detail what potential difference is with reference to volts and voltmeter. Explain what causes static charge with examples.	Be able to explain in detail what current is with reference to ammeters and amps. Be able to explain the difference between current and potential difference.	Be able to explain how current behaves in series and parallel circuits. Be able to explain how potential difference behaves in series and parallel circuits. Explain what causes static charge with reference to subatomic particles.	Be able to explain in detail how resistance affects current in series and parallel circuits with reference to electrons. Describe what is meant by the rating of a battery or bulb.
Magnets	Simply state the attraction and repulsion of the same and opposite charges. Describe how magnets interact. Describe how to make an electromagnet.	Explain how an electromagnetic works.	Describe how to represent magnetic fields. Explain the factors which affect the strength of an electromagnet	Describe the Earth's magnetic field. Plan an investigation to see how changing one factor can affect the strength of an electromagnet	Give real life uses of electromagnets	Explain how compasses rely on the Earth's magnetic field. Explain how a relay and a motor work
Energy	Explain the difference between energy and power. Be able to identify the amount of energy contained in food from food labels. State the difference between energy and temperature. Be able to recall different types of energy with examples.	Be able to calculate power with units. Be able to use the correct units for energy and convert from J to kJ and vice versa. Describe what happens when you heat up solids, liquids and gases. Describe energy before and after a change.	Be able to calculate the cost of using power appliances in pence. Be able to compare the energy values of foods and fuels. Describe some sources of infrared radiation. Describe how an insulator can reduce energy transfer. Explain what brings about changes in energy	Describe the link between power, fuel use, and the cost of using domestic appliances. Compare the energy in foods and fuels with the energy needed for different activities. Explain how energy is transferred by radiation. Explain what is meant by energy stores with examples	Be able to convert minutes into hours and watts into kilowatts as well as J/s into Watts. Explain what is meant by equilibrium. Describe how energy is transferred by particles in conduction and convection. Explain what is meant by law of conservation of energy	Be able to compare and contrast conduction, convection and radiation. Explain what is meant by dissipation
Forces and Motion	Be able to explain what speed is. Be able to identify a distance time graph. Be able to label pivot, effort and load on a diagram. Be able to explain what gas pressure is.	Be able to calculate speed with units. Be able to interpret a simple distance time graph. Describe what is meant by moment. Be able to explain gas pressure with diagrams.	Be able to rearrange the formula for speed. Be able to complete a practical on moments correctly. Be able to calculate pressure and describe factors that affect gas pressure.	Use the speed equation to explain how a speed camera calculates speed. Calculate speed using a distance time graph. Calculate the moment of a force with units. Describe how atmospheric pressure changes with height and how liquid pressure changes with depth.	Be able to explain the difference between instantaneous speed and average speed. Construct a distance time graph. Explain what is meant by the Law of Moments. Explain what compression, incompressible and density mean	Describe relative motion. Be able to show acceleration on a distance time graph. Explain what is meant by centre of mass or centre of gravity with examples. Explain why some things float and some things sink. Apply ideas of pressure to different situations.