Harrow Gate Primary Academy **Physics Progress Grid**

	NC POS	Declarative Knowledge	Procedural Knowledge
Y1	**Seasonal Changes** **1k** **1l**	• 3 methods of scientific enquiry: 1. Carrying out comparative tests 2. Observing changes over time 3. Grouping and classifying • Know what a question is **Seasonal Changes** • Name seasons • Features of a season • Time of year / dates • Length of day • Weather	• Carry out comparative tests with 2 variables • Orally answer a question with scientific vocabulary • Sort using 2 given criteria / groups • Notice things that are the same. • Scientific equipment: Measuring jug, thermometer
Y2			
Y3	**Light** **3j** **3k** **3l** **3m** **3n** **Forces and magnets** **3o** **3p** **3q** **3r** **3s** **3t**	Method of scientific enquiry: Fair Test • Scientific Keys **Light** • Definition of light • Definition of dark • Light source • Reflection • Safety of light with the sun a source • Definition of shadow **Forces and magnets** • Definition of force • Definition of friction • Magnetic force • Attract • Repel • Magnetic materials	• Ask informed questions using expressive scientific vocabulary • Carry out a simple, guided, fair test • To use a simple key • To use a secondary source as guided by the teacher • Use **systematic observation** to track the movement of water through a plant • Write a guided conclusion using PEEL (point evidence explanation link) • To use a scientific diagram in support of conclusion • Scientific equipment: Magnets, light box, Newton meters
Y4	**Sound** **4j** **4k** **4l** **4m** **4n** **Electricity** **4o** **4p** **4q** **4r**	**Sound** • Sound definition • How sound is made • Sound travel through **Medium** • **Robert Boyle 1627 – 1691 (medium)** • Pythagoras – vibration and sound waves • **Speed of sound – Marin Mersenne** **Electricity** • Electrons and protons • A complete circuit • Electrical components • **Conductors and insulators** • **Electricity safety**	• Ask a range of questions based on scientific knowledge and suggest where answers could be found. • Design a simple fair test • Interpret a food chain • Design a simple key • Identify and use a secondary source • Write a clear and cohesive guided conclusion using PEEL which incorporates any data / findings. • To create a guided scientific diagram in support of conclusion. • Scientific equipment: Tuning forks, data loggers, decibel readers batteries, switches, buzzers, clips, wires, bulbs, amps

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Y5	**Earth and Space** **5j** **5k** **5l** **5m** **Forces** **5n** **5o** **5p**	**Earth and Space** • Gravity • **Sir Isaac Newton 1643 - 1727** • Movement of the Earth • Name planets in our Solar system • Sun = star • Movement of the moon • Spherical bodies – flat earth theory • Night and day • Heliocentric • Geocentric **Brian Cox – 1968 –** **Forces** • Air Resistance • Water resistance • Load, pivot point, fulcrum • **Archimedes 212BC** •	• Identify an opportunity to work scientifically drawing on their prior knowledge and learning. • Create a line of enquiry for the science opportunity presented, incorporating a wide range of question types and scientific vocabulary. • Design and make a key for a given purpose • Identify opinion and fact when using a secondary source • Look for causal relationships in data • Write a conclusion which draws on all scientific vocabulary and understanding using relevant diagrams. • Scientific equipment: Levers, pulleys, gears
Y6	**Light** **6** **6j** **6k** **6l** **Electricity** **6m** **6n** **6o**	**Light** • Journey of light • Light sources **Thomas Edison 1877 – 1930** **Electricity** • Adding more volts (power) • Renewable power • **Nikola Tesla –** alternating current electricity supply system • **Eton Musk –** electric car	• Independently work scientifically creating own lines of enquiry • Explain why variables must be controlled • Design and make a key • Identify evidence that refutes or supports their ideas • Justify science thought using all previous methods for recording, explaining the degree of trust in results • Use their results to make predictions and identify further observations, comparative and fair tests might be needed.