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| **Discovering Three:** Can you see sound or hear light?  **Y2 and Y3 (Upper KS1/ Lower KS2 Science Project Three)**  *Safeguarding link- Sun safety* | |
| **What should I already know?**   * Water cycle and food chains (including the importance of the sun in these cycles) * Seasonal changes across the year and changes in the length of the day/ amount of sunlight | **Key Knowledge**  **Light**  We need light in order to see things, dark is the absence of light (which is why it is hard to see)  Light is reflected from surfaces and can be refracted by an object  Shadows are formed when the light from a light source is blocked by an opaque object. They change size depending on the distance of the object from the light source- identify patterns in this change through simple experiments and recording findings  Light from the sun can be dangerous and it is important that people protect their eyes  **Sound**  Sound is created by a vibration which moves through a medium to our ear, so it can be heard (e.g. through the air). If there was no medium for the sound to vibrations to travel through they could not be heard.  A high pitch sound corresponds to a high frequency sound wave and a low pitch sound corresponds to a low frequency sound wave.  Varying the strength of vibrations alters the volume of a sound- but the pitch does not change.  Recognise that sounds get fainter as the distance from the sound source increases.  **Forces and Magnetism**  Compare how things move on different surfaces- objects need a force to move (e.g. a push or pull). They don’t move unless the forces acting on them are imbalanced.  Magnetic forces can act at a distance- the magnets do not need to be touching.  Magnets attract or repel each other and attract some materials and not others, record trends and conclusions in the types of materials which attract magnets  Magnets have two poles and we can predict whether they will attract or repel a magnetic material, depending on which poles are facing. |
| **Key Vocabulary**   |  |  | | --- | --- | | **Key Term** | **Definition** | | light | Radiation which stimulates the sense of sight and makes things visible | | force | An influence which causes something to move | | magnet | A piece of iron or steel which can attract iron and points North to South when hung up | | reflect | To send back light, heat or sound from a surface | | refract | To ben a ray of light at the point where it enters water or glass at an angle | | shadow | The dark shape that falls on a surface when something is between the surface and a light | | attract | To pull something by means of a force | | repel | To push something away from itself by means of a force | | two poles | A point on the earths surface that is as far north or as far south as possible  Either end of a magnet | | vibration | A continuous shaking movement that you can feel | | volume | The strength or power of sound | | pitch | How high or low a sound is | | opaque | Not able to be seen through | | transparent | Able to be seen through | |
| **Scientific Skills**   * Use Google Science Journal to measure sound pitch and light- use the app to record and analyse results of experiments. * Create your own scientific questions and use different types of scientific enquiries to answer them * setting up simple practical enquiries, comparative and fair tests * making systematic and careful observations and, where appropriate, taking accurate measurements using standard units and different equipment * gathering, recording, classifying and presenting data in a variety of ways to help in answering questions * recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables * reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions * using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions * identifying differences, similarities or changes related to simple scientific ideas and processes * using straightforward scientific evidence to answer questions or to support their findings. |
| **Key Experiences**  Puppet show and making your own shadow puppet workshop <https://www.squashboxtheatre.co.uk/schools>  Science workshop  Weekly teacher led experiment |
| **States of Matter**    Particles are what materials are made from. They are so small that we cannot see them with our eyes.    The properties of a substance depend on what its particles are like, how they move and how they are arranged    Particles behave differently in solids, liquids and gases.    601DF35E**What is a solid?**    In the solid state, the material holds its shape.    Solids have vibrating particles which are closely packed in and form a regular pattern. This explains the fixed shape of a solid and why it can’t poured. Solids always take up the same amount of space.  E5E4D71C  **What is a liquid?**    In the liquid state, the material holds the shape of the container it is in.    This means that liquids can change shape, depending on the container. Liquids have particles which are close together but random. Liquid particles can move over each other. Liquids can be poured.    9399778A**What is a gas?**    In the gas state, particles can escape from open containers.    Gases have particles which are spread out and move in all directions. | |