

KFJS
Science Curriculum Map

In each project children will: build excitement and curiosity about natural phenomena by using science to explain, predict and analyse the way things behave.

Year 3

Project	Good Vibrations Sound	Light's Out! Light	Feel the Force Forces and Magnets	Flower Power Plants
Key Question	Why are there different sounds?	Why do shadows change size?	What is a controlled variable and how do we test for them?	What do plants need to grow?
Essential understanding	<p>Sounds are made when objects vibrate. The vibrations enter our ear and we hear them as sound.</p>	<p>We need light in order to see things and dark is the absence of light. Shadows are formed when light from a source is blocked by an opaque object. The closer an object is to a light source the greater the shadow.</p>	<p>Friction is a force between two surfaces that are sliding, or trying to slide, across each other. Magnetic force, unlike other forces, can act at a distance to an object due to the magnetic field.</p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaf and flowers Explore the requirements of plants for life and growth and how they vary from plant to plant Investigate the way in which water is transported within plants Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>
<p>Start to recognise the variables in a fair test and what needs to stay the same. Know the difference between observation and a fair test. Make systematic measurements using standard units.</p>				
Objectives	<p>Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear</p>	<p>Recognise that they need light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces</p>	<p>Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance</p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaf and flowers Explore the requirements of plants for life and growth and how they vary from plant to plant</p>

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	<p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p>	<p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Find patterns in the way that the size of shadows change.</p>	<p>Observe how magnets attract or repel each other and attract some materials and not others</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.</p> <p>Describe magnets as having two poles</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>Investigate the way in which water is transported within plants</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>
Working scientifically	<p>Set up simple practical enquiries, comparative and fair tests.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p>	<p>Ask relevant questions and use scientific enquiries to answer them.</p> <p>Make systematic and careful observations and take accurate measurements using standard units.</p> <p>Identify changes related to simple scientific ideas and processes.</p>	<p>Ask relevant questions and use scientific enquiries to answer them.</p> <p>Set up simple practical enquiries, comparative and fair tests.</p> <p>Make systematic and careful observations and take accurate measurements using standard units.</p>	<p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results or conclusions.</p>

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	Use straightforward scientific evidence to answer questions and support their findings.		Use straightforward scientific evidence to answer questions or support their findings.	
Skills	Begin to understand and use simple scientific language. Say what is similar and different. Use prior scientific knowledge of the world to support own findings.			
	Explain how sounds are made and how we hear them.	Recognise we need light in order to see things and dark is the absence of light. Explain how shadows are formed and understand the closer an object is to a light source, the greater the shadow. With support, construct simple, relevant questions. Set up a simple investigation using provided equipment With support, recognise that some variables need to be kept the same to make the test fair.	Explain what friction is. Explain how magnets work. Knows what it is important to observe and makes more than 1 observation. Describe what can be seen using everyday language. Use equipment which has been provided to take standard measurements.	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaf and flowers Understand what plants need for life and growth. Identify the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Use simple drawings, labelled diagrams and tables to present findings. Say what has been found out, explain simple patterns and relate back to prediction. Share results and simple patterns verbally with others and through a range of written methods.

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Assessment	Children to demonstrate that the volume and pitch of sound effects how often and depth of vibrations represented in sound waves through a verbal explanation and demonstration (could be videoed) or written explanation with diagrams	Children to create a labelled diagram of a light source, object and shadow.	Children to plan final investigation to test the strength of magnets.	Create a labelled diagram of a plant they have dissected.
WTS	Show that the louder a sound the greater the vibrations	Show that a shadow is formed when an object blocks the light	Support to identify independent variable and a controlled variable	Label plant with stem, petals, stamen, leaves and roots
EXS	Can represent sound as waves and show that the louder/ quieter a sound the greater/ smaller the vibrations	Labels added show direction of light and shadow and the shadow is the same shape as the object	Should be able to identify independent variable and a minimum of 1 controlled variable.	Labels as above with detail including role of roots, leaves and stamen.
GDS	Represent sound in sound waves with greater accuracy and able to identify impact of volume and pitch on strength and frequency of vibrations	As above but greater detail in labels and awareness of distance from light source (may need 2 diagrams).	Confident recognising independent variable and a range of controlled variables.	May include terms such as photosynthesis, nutrients, fertiliser and reproduce.