



## Enquiry maps

### Age 7 – 9 years

This enquiry map aims to give you some ideas for scientific enquiry based on Explorify activities. You will often find more guidance in the **Take it further** section of the activity. **This enquiry map takes account of the requirements of all four UK science curriculums, so do check your own scheme of work/nation’s curriculum when selecting activities.**

We have included activities that can get the children asking questions as all science starts with curiosity and questioning. This may generate questions the children can go on to investigate. The Great Science Share has different [question maker resources](#) to support this.

	Ask simple questions	Observe changes over time	Identify and classify	Carry out comparative and fair tests	Notice patterns and relationships	Research using secondary sources
Animals	<a href="#">Flappy friends</a> -what questions do you have about these birds? How could you find the answers?		<a href="#">Feathered friends</a> use a database like <a href="#">this</a> to classify the birds they see. <a href="#">Get a backbone</a> or <a href="#">Terrific tree dwellers</a> - get the children to classify a set of vertebrates and invertebrates. Or develop it further and classify into mammals, birds, fish, reptiles and amphibians. <a href="#">Topsy turvy</a> and <a href="#">Funny bones</a> – sort a range of animals by whether		<a href="#">Have you ever found it difficult to spot an animal because of its colour?</a> or <a href="#">Confusing camouflage</a> - are green or brown caterpillars easier to spot?	<a href="#">Unexpected eggs</a> – do all animals lay eggs? Are the eggs all the same? <a href="#">Tasty web?</a> What do these animals eat? Can you make different food chains/webs? <a href="#">What if we could bring back woolly mammoths?</a> - Research animals that are extinct. <a href="#">What if we had four stomach parts like a</a>

			<p>they are vertebrates or invertebrates.</p> <p><a href="#">What would they eat?</a> - can you sort these skulls into herbivores, carnivores and omnivores?</p>			<p><a href="#">cow?</a> - Find out about the digestive system of different animals.</p>
Humans	<p><a href="#">HYE broken a bone?</a> - what questions do children have about their bones? How can you find out?</p> <p><a href="#">HYE been to the dentist and had your teeth checked?</a></p> <p>Why aren't all your teeth the same?</p>	<p><a href="#">Disappearing egg shells</a> - what happens when you leave eggs shells in acid?</p>	<p><a href="#">Bite, rip, mash</a> – what do you use your different teeth for?</p> <p><a href="#">What's for dinner?</a></p> <p>How can you group the food that you eat?</p>	<p><a href="#">Healthy drinks</a> - which drinks are healthier for your teeth?</p>	<p><a href="#">Hanging out</a> and <a href="#">How fast can you jump a mile?</a> - investigate whether people with longer arms throw further? Can people with longer legs jumper further? Can people with bigger hands catch a ball more easily?</p> <p><a href="#">Brilliant brain case</a></p> <p>Do male humans have larger skulls than female humans?</p> <p><a href="#">What food helps to keep us healthy?</a></p> <p>Are foods that are high in energy always high in sugar?</p>	<p><a href="#">Which breakfast is best?</a> and <a href="#">'Super broccoli' food research scientist</a> – research which foods help you stay healthy?</p> <p><a href="#">Our digestive organs</a> - research the digestive system</p>
Plants	<p><a href="#">Out to grass</a> - do all plants have flowers? How could you find out?</p>	<p><a href="#">Water colours</a> - observe how the stem transports</p>	<p><a href="#">What is inside flowers?</a> - find and identify the different parts of a</p>	<p><a href="#">Have you ever heard of anyone feeding their plants?</a> - Do plants</p>		<p><a href="#">What if we did not plant trees?</a> - investigate how</p>

		<p>water to all parts of the plant.</p> <p><a href="#">Three weeds</a> – observe the life cycle of a dandelion</p> <p><a href="#">Brown tubes</a> - investigate how fast roots grow.</p>	<p>flower. Are they all the same?</p> <p><a href="#">Underground overground</a>– do all roots look the same?</p> <p><a href="#">Have you noticed a plant growing in the cracks in the pavement?</a>, <a href="#">Brown and sticky</a>, <a href="#">Sightseeing seeds</a>- sort a set of different seeds by how they are dispersed?</p>	<p>grow quicker/stronger with nutrients added to the water they're given?</p>		<p>much carbon is stored in local trees.</p>
Habitats and biodiversity.	<p><a href="#">Have you ever watched a small animal in its habitat?</a> - what questions do the children have about different habitats?</p>	<p><a href="#">Which pollinators visit our school grounds?</a> and <a href="#">Who is Adam Hart?</a> - what living things could you observe in your school grounds?</p> <p><a href="#">Wildlife in the pond</a></p> <p>How does the average temperature of the pond change over the year?</p>	<p><a href="#">Different homes</a> - what different plants and animals can you find in different local habitats?</p>	<p><a href="#">Wet, wet, wet</a></p> <p>Investigate how microplastics enter seas, lakes and rivers and learn about their impact.</p>	<p><a href="#">Busy bee</a></p> <p>What colour flowers do pollinating insects prefer?</p> <p><a href="#">Funky feet</a> - do all animals that live near water have webbed feet?</p>	<p><a href="#">Thirsty work</a></p> <p>Investigate how much water different animals need to drink in the savannah. How is climate change impacting this?</p> <p><a href="#">Remarkable reef</a></p> <p>What animals and plants do you find living in coral reefs? How is pollution and climate change threatening the habitat?</p>
Materials	<p><a href="#">What if water couldn't freeze?</a> and <a href="#">White crystals</a> – what questions do children have about freezing? How could they find out?</p>	<p><a href="#">Hold on tight</a> - Observe the three states of water by heating a small ice cube in a foil tray over a lit tealight.</p>	<p><a href="#">Gas</a> - sort materials into liquids, solids and gases?</p>	<p><a href="#">Have you ever needed to dry something quickly?</a></p> <p>- how could you investigate this question?</p>	<p><a href="#">Have you ever held a piece of chocolate tightly in your hand?</a></p> <p>- do all types of chocolate melt at the same speed?</p>	<p><a href="#">Liquid of life</a> - research the water cycle.</p> <p><a href="#">Have you ever had an ice cream melt?</a></p>

		<p><a href="#">Have you ever not been able to see yourself in the bathroom mirror?</a> or <a href="#">Where is the water?</a> - observe condensation forming.</p> <p><a href="#">Have you ever splashed in a puddle?</a></p> <p>Observe puddles evaporating using chalk to mark the outline of the puddle. Alternatively, paint shapes with water and a paint brush in sunny and shady parts of the playground and observe what happens.</p>		<p><a href="#">Have you ever had an ice cream melt?</a> and <a href="#">Ice lollies</a>- investigate what affects an ice pole melting.</p> <p><a href="#">How can we slow down evaporation to make sure that wildlife can drink?</a> - does the size of the container affect how quickly water evaporates?</p> <p><a href="#">Have you ever tasted sugar in your cereal?</a> - Which type of sugar dissolves the fastest? / Does the heat of the water affect how quickly the sugar dissolves?</p>		<p>do all materials have the same melting point?</p>
Rocks and soils	<p><a href="#">Big question why don't all rocks look the same?</a></p> <p>- What questions do you have about rocks? How could you find out?</p>	<p><a href="#">Tiny bits and pieces</a> - observe soil separating into layers by adding water.</p>	<p><a href="#">Surprising Surface, Glitter and Sparkle</a> and <a href="#">Mysterious Material</a> - what rock is this?</p>	<p><a href="#">Drainage dilemma</a> - investigate which soil retains sufficient water to help the plant's growth.</p> <p><a href="#">Obscure orange</a> - which rock would be best for a bird bath? A statue?</p>		<p><a href="#">Do rocks stay the same forever?</a></p> <p><a href="#">Animal fossils</a> - how are fossils made?</p>

Forces	<p><a href="#">Magnets</a> – what “I wonder” questions do you have about magnets?</p> <p><a href="#">Scarf shooter</a> - what “I wonder” questions do you have?</p> <p><a href="#">What if you had magnets for fingers?</a></p>		<p><a href="#">Give it a pull</a> - sort different forces into pushes and pulls?</p> <p><a href="#">Magnets</a> and <a href="#">Attract and repel</a> - sort materials into magnetic and non-magnetic materials?</p>	<p><a href="#">Have you ever ridden your bike or scooter off the pavement?</a> - test how far a toy will travel on different surfaces.</p> <p><a href="#">Have you ever used a magnet?</a> - test which magnet is the strongest?</p>	<p><a href="#">Pull together</a> - does the size and shape of a magnet affect how strong it is?</p>	<p><a href="#">Marvellous magnets</a> - research what magnets are used for.</p>
Electricity	<p><a href="#">Have you ever tried to turn something on when it wasn't turned on at the plug?</a></p> <p>What questions do you have about electricity? How could you investigate?</p>		<p><a href="#">Electrical appliances</a> - sort appliances by whether they use mains or battery power</p> <p><a href="#">Interesting insulators</a> or <a href="#">To the wire</a> - sort materials into insulators and conductors</p>		<p><a href="#">Have you ever tried to turn something on when it wasn't turned on at the plug?</a></p> <p>Which room has the most electrical sockets in a house?</p>	
Energy conservation	<p><a href="#">Have you ever had a power cut and not had any electricity?</a></p> <p>- what questions do you have about electricity? How could we investigate?</p>	<p><a href="#">Solar does it</a> - investigate solar-powered toys to see how well they work. Will they work on cloudy days as well as sunny days?</p>	<p><a href="#">Green power</a> - can you sort different sources of energy?</p>			<p><a href="#">Green power</a> and <a href="#">Take your turn</a> - research the different ways electricity is generated and the <a href="#">pros and cons</a> of each.</p>
Light	<p><a href="#">Have you ever had to move position because of a shadow?</a></p>	<p><a href="#">Have you ever been somewhere where you couldn't see anything when you woke up in the night?</a></p>	<p><a href="#">Source of light</a> - identify natural and artificial sources of light?</p> <p><a href="#">Shiny things</a> - which objects reflect light?</p>	<p><a href="#">Lightproof your secret den</a></p> <p>- which materials are opaque, translucent and transparent?</p>		

	What questions do you have about shadows?	When is the classroom darkest?		<a href="#">Shadow shapes</a> - how does the size of the shadow change the closer the light source is to the object? <a href="#">In the shade?</a> Which pair of sunglasses will be best at protecting your eyes?		
Sound	<a href="#">Have you ever heard your neighbours in the next house or flat?</a> - what questions do you have about how we hear? How can you find the answers?	<a href="#">Hidden depths</a> - when is our classroom quietest?	<a href="#">Sounds like science</a> - sort different musical instruments by how the vibrations are made.	<a href="#">Protect your ears</a> - which material is best for muffling sound?	<a href="#">Keeping track</a> - how does volume change the further you are from a sound? <a href="#">Pitch perfect</a> or <a href="#">Bottle orchestra</a> - is there a pattern between the pitch of a sound and the size of the guitar string or the length of the keys on a xylophone?	<a href="#">The sound of silence</a> - which animals can move silently?
Space	<a href="#">Earth</a> - what do you notice happens to our planet in this video? How could we find out more? <a href="#">HYE spoken to a friend or relative elsewhere in the world and time was different?</a> - what questions do you	<a href="#">HYE looked up at the Moon and noticed how it appears to be different shapes at different times?</a> - How does the Moon change shape over the month?				

	have about day and night?					
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### For other ideas visit

The Ogden Trust - [Identifying and classifying, pattern seeking, comparative tests, observing overtime](#), and [research](#)

The Great Science Share has some great videos looking at the [different working scientifically skills](#). You will need to set up a login, but it is free.

PLAN primary assessment also has [working scientifically matrixes](#).