Science Home Discussion Questions

These questions have been put together to allow children to discuss scientific concepts at home with their families. They require either no resources at all or very simple items that you'd expect to find in most homes so that all children will be able to engage with them. They might be useful for science homeworks or for times when children are spending longer periods of time away from school and would benefit from some time spent thinking scientifically.

You could send home those that relate to recent learning to recap, those that you're planning to cover soon to get children thinking about what they already know or even send home questions from previous year groups so children can revisit past learning.

Feel free to make use of them in whatever way is best for your school or pupils, and please let me know if you do – I love finding out how things have worked in settings other than my own! If you share them wider, please reference me as the source 😊

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Year 1

Seasons

Look out of your window. What clues are there to tell us which season it is now?

Which season is your favourite? Why?

Plants

Look for the biggest and smallest plant you can see through your window, or in your garden or home. What is the same about them? What is different?

What if there were no plants? Which things in your home would be missing if there were no plants? Don't forget to check the fridge!

Animals including humans

See if you can think of an animal for each letter of the alphabet. You could write their names or draw pictures. When you have your list, cut it up and try sorting the animals into different groups. You could try sorting them according to what they eat, where they live or what kind of animal they are.

How many animals are there inside your home? Are there different kinds of animals or just humans? What are the similarities and differences between you and the other animals in your home?

Which animal is your favourite? Ask the other people in your home what their favourite animal is and compare them. You could think about how they move, where they live, what they eat, what they look like or what type of animal they are. Remember to think about similarities as well as differences!

Materials

Gather together a selection of your favourite toys and talk about what materials they are made of. Are they all made of the same material? Why? If you have a younger child in your home, look at the materials their toys are made of – are they made of the same things as yours? Why do you think this might be?

How many things can you find in your home that are made from just one material?

Out of metal, wood, plastic, glass, paper and fabric, which material can you find the most in your home? You could create a tally chart to keep track of what you find.

Year 2

Living things and their habitats

Can you find some things that are living, once lived and never alive in your home?

How can we tell that a car is not living? Why might someone think it is a living thing?

Is water alive? How can you tell?

Look out of your window and think about how many different animals might live in the habitats in front of your home. Would they be the same animals that live around your grandparent's home or your best friends? Or the last place you went on holiday!? Why do you think they would be different (or the same)?

Plants

What if there were no plants? Which things in your home would be missing if there were no plants? Don't forget to check the fridge!

Whereabouts in your home would be a good place for a plant to grow? Why? Where would be a bad place for a plant to grow? If you have any left over carrot tops or apple pips, you could try growing them in different places and find out!

Animals including humans

How are you similar to and different from the other people in your home?

When we are not at school having regular playtimes and PE lessons, what can we do to keep our bodies fit and healthy?

Over dinner, think about the different types of food on your plate. Which type is there the most/least of? Which foods are healthy and which are unhealthy? Which foods is it ok to have lots of and which should we only have a little of?

What if we never ate fruit or vegetables?

Uses of everyday materials

Choose a material and discuss what would happen if it were missing from your home. For example, what if there were no glass? How would your home be different?

Which materials are your rubbish made out of? Which of these can be recycled and which can't?

Year 3

Plants

What if plants didn't have roots? What if they didn't have flowers?

What if plants could walk? How about if they could talk?

Whereabouts in your home would be a good place for a plant to grow? Why? Where would be a bad place for a plant to grow? If you have any left over carrot tops or apple pips, you could try growing them in different places and find out!

How many different kinds of plant can you see from your window? How is this different from the window of your classroom or your best friend's house? Why are there different numbers and kinds of plants in different places?

Animals including humans

Over dinner, think about the different types of food on your plate and the nutrients they contain. Which nutrients are there the most/least of?

Investigate the tins and other packets of food in your cupboards. Choose a nutrient and see if you can sort them from most to least (the packets should have information about how much protein, fat, carbohydrates and some vitamins are in them).

What if we didn't have a skeleton?

What if we didn't have muscles?

Rocks, fossils & soils

What if there was no soil?

How many different kinds of rock can you find in your home or see from your window? How are they similar or different to each other? Don't worry if you don't know their names!

How do we know about animals that lived in the past?

Light

Can carrots actually help you to see in the dark?

What if we had no human-made light sources?

How do the shadows you can see from your window change over the course of the day?

Are shadows ever useful?

Investigate making shadow animals with your hands. How can you make your shadows smaller or larger?

Forces and magnets

How are magnets useful in your home?

Are all metals magnetic?

Year 4

Living things and their habitats

How many different living things can you see from your window? Make a list or draw pictures of each, then try sorting them in different ways. You could think about the different ways they move or eat, what they look like, what type of animal they are or where they can be found.

What if plastic had never been invented? How would this change the world around us?

What if all the trees in our town were cut down?

Animals including humans

What if humans had no sense of taste?

How many teeth do you have compared to the other people in your home? Why do you think there are similarities/differences?

States of matter

Where in your home can you find examples of changes of state?

Where in your home do you think a damp towel would dry the quickest? Why?

What evidence of the water cycle in action can you see from your window?

True or false – The water we drink today is the same water dinosaurs drank millions of years ago.

Sound

How is sound useful in your home?

Why do sounds from outside sound different when you are inside?

Electricity

How would a world without electricity be different?

How many switches can you find in your home?

True or false – Insulators are just as important as conductors.

Year 5

Living things and their habitats & Animals including humans

What if humans stopped growing when they were 7 years old?

Properties and changes of materials

True or false – Insulators are just as important as conductors.

How many examples of helpful insulators (electrical or thermal) can you find in your home?

What if materials couldn't dissolve in liquids? Think in particular about what you might have in your kitchen that wouldn't work without dissolving!

Earth and Space

Do you think there is life elsewhere in the universe?

What if the Earth was flat?

What if the Earth was shaped like a cube?

What if there was no Moon?

Think about your day so far. How would it have been different if it had taken place on the International Space Station (ISS)?

What are important qualities for an astronaut?

Forces

What examples of friction being helpful can you find in your home? How about if you look out of your window?

What if there was no friction?

Where in your home are levers, gears or pulleys used to make things easier?

Year 6

Living things and their habitats

Where might you find bacteria or other microorganisms in your home? Which of these are useful to us?

List all the living things you can find in your home or can see from your window. Try classifying these into a range of groups. You could thing about whether they are vertebrates or invertebrates, plants or animals, or mammals, fish, birds, insects, amphibians or reptiles. Try creating a classification key to help other identify these animals.

Animals including humans

What if we didn't have a heart?

Do all animals need to do the same things to stay healthy?

What if there were no drugs at all?

When we are not at school having regular playtimes and PE lessons, what can we do to keep our bodies fit and healthy?

Evolution and inheritance

Not all penguins live in cold habitats. How do you think those in warmer climates are adapted to their surroundings?

Think about all the plants you can see from your window. Compare these to the plants you might see if your home was in the desert or the jungle. What differences would there be and why?

What if humans were all identical?

How do we know about animals and plants that were alive in the past?

Light

What if light could go round corners?

When are shadows useful?

What wold you see in your home if there were no light sources?

What if there were no human-made light sources?

Electricity

How would your home be different without electricity?

How would a world without electricity be different?

True or false – Insulators are just as important as conductors.