Parent and Carer Information: Year 4 Science

This guide helps you to track the progress of your year 4 child as they develop through the subject of science. In year 4, children learn the key skills that form the basis of their science education, including studying living things, changes of state and the practical skills of investigations and experiments. Practising these skills at home can be a great way to your boost child's confidence and complement what they learn in the classroom. This guide outlines how you, as parents and carers, can best support your child's year 4 science journey, with an easy-to-follow flowchart of what they will learn and clear goals for you to work on together.

Click on each topic to head to the relevant category on the Twinkl website to find super resources to support your child.

Conductors and Insulators

Alternatively, you can follow the web url **www.twinkl.co.uk/resources/parents** to get to the Twinkl Parents Hub.

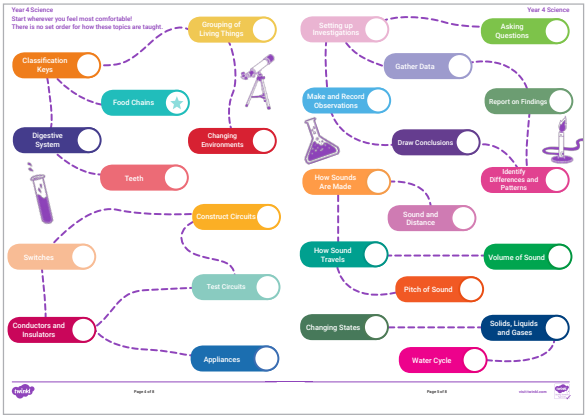
We have also included handy tick boxes, so you can easily check off when you have covered each topic, and you can keep on track with your child's studies. You can also use the 'traffic light' system to record your child's confidence, and how they feel about the topic you have covered together.

Stick the other pages together to create a display poster for both you and your child to fill in. Complete with handy tick boxes, this chart is ideal for helping to support your child's studies from home.

I feel unsure about this.

I feel okay about this.

I feel confident about this!



We hope you find the information on our website and resources useful. The contents of this resource are for general, informational purposes only. This guide is intended to offer parents general guidance on what subject areas tend to be covered in their child's year group and where they could support their children at home. However, please be aware that every child is different and information can quickly become out of date. There are some subject areas that we have intentionally not covered due to the nature of how they are taught or because a trained professional needs to teach these areas. We try to ensure that the information in our resources is correct but every school teaches the national curriculum in its own way. If you would like further guidance or are unsure in any way, we recommend that you speak to your child's teacher or another suitably qualified professional.

Grouping of Living Things

Your child can sort and organise living things based on a variety of different properties. They recognise that you can use physical properties (such as having wings, number of legs, teeth etc.) to sort living things. They can also use other properties to sort living things, like what they eat, where they live, whether they live alone or on groups etc.

Changing Environments

Your child can identify how environments can change. They understand the basics of changing temperatures, pollution effects, deforestation, changing uses of land (e.g. for housing). They can say how these changes can have an effect on animals and cause difficulties for them.

Classification Keys

Your child can create a classification key. This is a chart that can be used to identify different animals based upon their properties. The user will answer a series of questions that sort animals based on their properties. For example, does the animal have more than four legs? Is the animal furry? Does the animal make a web? It's a tarantula.

Food Chains

Your child can create food chains. They recognise producers, predators and prey within each chain and can name examples of each. For example, grass (producer) → rabbit (prey) → fox (predator).

Digestive System

Your child can describe the basic function of the digestive system. They can name some of the parts of the body associated with the digestive system (mouth, teeth, tongue, oesophagus, stomach and intestines) and describe what each part does when eating and digesting food. For example, they understand the teeth help to break up food, the oesophagus carries the food down to the stomach and the stomach contains acids that break down the food for our body to use.

Teeth

Your child can recognise that humans have different types of teeth. They can name some of these (molars, canines, incisors etc.) and describe the function of each tooth.

Construct Circuits

Your child can build simple circuits. They recognise that a circuit must be a complete loop with no gaps in order to work and can name some of the simple components of the circuit. For example, they recognise a bulb, cell, wire, lamp and switch.

Switches

Your child can identify how a switch works in a circuit. They can describe that the switch creates a break in a circuit when it is turned off and fills the gap in the circuit when it is turned on. They can use this information to predict if a lamp will light in a circuit containing a switch, based upon its on or off position.

Test Circuits

Your child can test if a circuit will work. They can identify whether a lamp in a circuit will light up or not based on whether the circuit is correct or not. They understand that a circuit must be a complete loop with a battery in order to work.

Conductors and Insulators

Your child can describe the meaning of the words conductors and insulators. They understand that conductors allow electricity to pass through them, while insulators do not. They can name some materials that are conductors and some that are insulators.

Appliances

Your child can name some common home appliances that run on electricity. They recognise that some objects require electricity to work. For example, a hair dryer, a fridge or a television.

Setting up Investigations

Your child can create an investigation or experiment to test a question that they have set. They think carefully about what they want to find out and decide how they can test this. They think of rules for the investigation and ways of recording what they find out.

Asking Questions

Your child can ask sensible questions to find out more about a scientific subject. They can pose a question that they wish to test using an investigation or experiment.

Gather Data

Your child can gather together the measurements they take during an investigation or experiment and can record this data in tables, graphs and charts. This makes the information more visual and easier to understand.

Make and Record Observations

Your child can make observations of what they see happen in an investigation or experiment they carry out. They can record measurements of what is happening by using simple equipment such as rulers, timers, scales and measuring jugs.

Report on Findings

Your child can report back what they have found in an investigation or experiment. They can present what they did, what they found out and what this means to other people, using both spoken and written feedback. This can include presentations, display posters and write-ups.

Draw Conclusions

Your child can look at the information they gather from an investigation or experiment and decide what this means. They can apply this information to their initial question and decide on an answer. Also, they can suggest ways that their investigation or experiment could be improved or changed to test a further question.

How Sounds Are Made

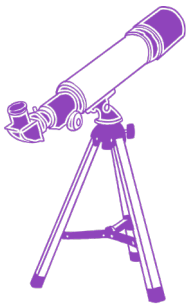
Your child can describe how sounds are made. They understand that sound is caused by something vibrating. For example, the strings of a guitar, a person's vocal chords or a drum skin being struck.

Year 4 Science

Start wherever you feel most comfortable!
There is no set order for how these topics are taught.

Grouping of Living Things

Classification Keys



Food Chains

Digestive System

Changing Environments

Teeth

Construct Circuits

Switches

Test Circuits

Conductors and Insulators

Appliances

Setting up Investigations

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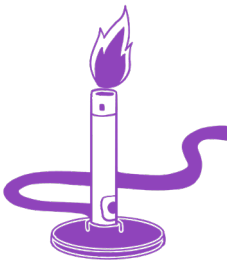

Draw Conclusions

Identify Differences and Patterns

How Sounds Are Made

Sound and Distance

How Sound Travels

Volume of Sound

Pitch of Sound

Changing States

Solids, Liquids and Gases

Water Cycle

Explore and Discover More

Twinkl Go! is a digital platform, hosting interactive content such as videos, games, audiobooks and more. Twinkl Go! enables digital content to be streamed to your computer or mobile device.

Twinkl Book Club is our book subscription service. Enjoy our original works of fiction in beautiful printed form, delivered to you each half-term and yours to keep!

Twinkl Boost is a range of intervention resources, created to support and lift learning with children at every level. These include our easy-to-use SATs and Phonics Screening resources.

Imagine resources are designed to help your children to think creatively, question and imagine. Every week, a new topic consisting of five photos, each with related activities, is created.

Twinkl Originals are engaging stories written to inspire pupils from EYFS to KS2. Designed to encourage a love of reading and help curriculum-wide learning through accompanying resources.

Twinkl Kids' TV is our wonderful YouTube channel dedicated to fun and informative video style resources full of new and creative activities you can try at home!

Identify Differences and Patterns

Your child can identify how some objects can be bent, twisted, squeezed, stretched and squashed. They understand that some materials can have their shape changed using these actions, whereas some can't.

Sound and Distance

Your child can describe that the further away from a sound you are, the quieter it will be. This is because vibrations lose energy the further they have to travel. So if the sound has to travel a long way to your ear, it will lose a lot of energy and become quieter.

How Sound Travels

Your child can recognise that sound is capable of travelling. They recognise that sound travels by vibrating the medium it is in (for example, it travels through air by vibrating the air and through water by vibrating the water). They understand that we hear sound because the vibration travels into your ear.

Volume of Sound

Your child understands that the stronger the initial vibration of a sound, the louder it will be. If they clap their hands softly, producing a smaller vibration, this will be quieter than if they clap their hands firmly, creating a larger vibration and a louder sound.

Pitch of Sound

Your child can identify that different shaped objects produce different sounds. For example, they understand that the strings of a guitar are different thickness and therefore produce a different sound when they are plucked.

Changing States

Your child can describe that some materials change state. They understand that heating and cooling can cause materials to change between being a solid, liquid and gas. Through experiments and using thermometers, your child can test at what temperature some of these changes occur. For example, melting chocolate turns it from a solid to a liquid.

Solids, Liquids and Gases

Your child can recognise if a material is a solid, liquid or gas. They recognise some of the simple properties and can name everyday examples of each. For example, a solid keeps it's shape and doesn't flow, a liquid changes shape to match the container it is in and flows, a gas spreads out and fills a container it is in and moves freely.

Water Cycle

Your child can describe the water cycle. They understand that water in the world goes through many different stages; taking it from the sea, to clouds, to rain, to rivers and back to the sea again. They can describe how evaporation and condensation play a massive part in the water cycle.

Above and Beyond

If you really want to go the extra mile, you and your child can review these sections, to gain a greater understanding of each topic and push your learning further.

★ Changing States

- Your child can identify that changes of state can be reversible or irreversible. They know that some changes can be undone, while others can't. For example, ice melting into water can be reversed by refreezing the water, whereas bread being toasted can't be reversed, so is an irreversible change.
- Your child can, with some support, identify that some mixtures can be separated by filtering, sieving or evaporating. They can use their knowledge of solids, liquids and gases to understand that some solutions can be separated.
- Your child can, with some support, recognise that some materials dissolve in liquids to produce a solution. They understand that dissolving means that the material has become incorporated into the solution.

★ Food Chains

Your child can use their knowledge of food chains to create a food web. A food web is an extended version of a food chain, where all the animals and plants that are eaten in a habitat are joined together. For example, grass → rabbit → fox, but a cow also eats the grass and humans eat the cow. Also some birds of prey eat rabbits. All this information is joined together to create a food web.