




Topic	Science - Properties of Materials	Theme	Creation	Year Group	5
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Key Question What are the properties of materials and how do they change?


What I should already know?	Key learning:	Key Vocabulary	
<ul style="list-style-type: none"> <input type="checkbox"/> A circuit must have a closed path so that electrical energy can pass through. <input type="checkbox"/> Circuits can include bulbs, wires, switches, buzzers and cells connected in one loop. <input type="checkbox"/> A conductor is a material which allows energy to flow through it. <input type="checkbox"/> An insulator does not allow energy to flow through it. <input type="checkbox"/> Metal is a material which can be hard, shiny and a conductor of electricity. <input type="checkbox"/> Material is what an object is made from. <input type="checkbox"/> Materials which are insulators are rubber, plastic and wood. 	<ul style="list-style-type: none"> <input type="checkbox"/> Materials can be grouped according to their properties. Properties include hardness, transparency, electrical and thermal conductivity and attraction to magnets. <input type="checkbox"/> An electrical conductor is a material that allows electricity to flow through it, whereas an electrical insulator is a material that does not allow electricity to flow through it. <input type="checkbox"/> Thermal insulators are materials which do not allow heat to travel through them easily. Thermal insulators help to keep hot things hot and cold things cold. <input type="checkbox"/> A comparative test explores the relationship between variables - what will change, what will be measured and what will be kept the same. <input type="checkbox"/> Materials have specific uses based on their properties - metals are good conductors of electricity and heat whereas plastics are good insulators of electricity. 	<p>anomalous result</p> <p>bulb</p> <p>cell</p> <p>circuit</p> <p>conclusion</p> <p>control beaker</p> <p>data</p> <p>electrical conductor</p> <p>electrical insulator</p> <p>hardness</p> <p>magnetism</p> <p>opaque</p> <p>properties</p> <p>thermal insulator</p> <p>thermometer</p> <p>translucent</p> <p>transparent</p>	<p>a result that does not fit in with the pattern of the other results</p> <p>a part in a circuit that produces light</p> <p>a single device which produces electricity</p> <p>a complete path that allows electrical energy to flow</p> <p>what has been found out during an investigation</p> <p>a beaker that is not wrapped in material so it can be used for comparison with other beakers</p> <p>facts and numerical information collected</p> <p>a material that lets electricity pass through it</p> <p>a material that does not let electricity pass through it</p> <p>a measure of how resistant a solid is to a change of shape or indentation when a force is applied</p> <p>a non-contact force created by a magnet</p> <p>an object or material that does not allow any light to pass through it</p> <p>the qualities and characteristics of a material</p> <p>material that does not let heat pass through it quickly/efficiently/easily</p> <p>a piece of equipment used to measure temperature</p> <p>an object or material that allows some light to pass through it</p> <p>an object or material that allows all light to pass through it</p>

Insulating heat experiment variables


independent variable (what will change) - the material that the beaker is wrapped in.






controlled variable (what is kept the same) - the temperature of the water in each beaker at the start of the experiment, the number of layers of insulation wrapped around the beakers, the volume of water in the beakers and the shape and size of the beakers.



dependent variable (what will be measured) - the temperature of the water over time



Wood	Metal	Plastic
<p>wood - a natural material that is generally hard and comes from the stem or branches of trees and shrubs</p> 	<p>metal - a material that can typically conduct electricity and heat</p> 	<p>plastic - a man-made material that is often strong, lightweight and can be formed into many shapes</p> 

Uses of everyday materials - plastic, wood and metal

- Materials have specific uses.
- Metals are good conductors of electricity and heat.
- Plastics are good insulators of electricity.

Example of data

Insulating material	Temperature (°C)			
	0 min	5 min	10 min	15 min
aluminium foil	45	41	38	36
felt	45	43	40	37



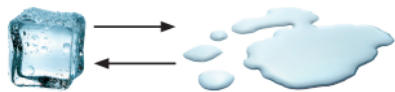
Topic	Science - Reversible and irreversible changes; Plastic Pollution	Theme	Creation	Year Group	5
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Key Question: What are the properties of materials and how do they change?

What I should already know?	Key learning:	Key Vocabulary	
<ul style="list-style-type: none"> Solids have a fixed shape and volume. A solid material will keep its shape if it is transferred from one container to another. Liquids have no fixed shape and will take on the shape of the container they are transferred into. The volume will remain the same. Gases have no fixed shape and no fixed volume. They will spread out and fill any available space. Some materials can change state between a solid, a liquid and a gas. Water can be a solid (ice), a liquid (water) or a gas (water vapour). A thermometer is used to measure temperature. 	<p><u>Reversible and irreversible changes</u></p> <ul style="list-style-type: none"> A soluble substance can dissolve in a liquid. Salt and sugar are soluble in a liquid. An insoluble substance cannot dissolve in a liquid. Sand and flour are insoluble in a liquid. Mixtures can be separated out by methods like filtering, sieving and evaporating. Some changes to materials such as dissolving, mixing and changes of state are reversible, but some changes such as burning, toast and mixing vinegar with bicarbonate of soda result in the formation of new materials and these are not reversible. <p><u>Plastic Pollution</u></p> <ul style="list-style-type: none"> Plastics are designed to last a very long time and do not break down easily, this can have a negative impact on the environment. Plastic pollution results in lots of plastic ending up in landfill sites and the oceans. 	burning	a chemical reaction where a substance is heated in air to make a new substance, which may produce a flame.
		chemical reaction	a change where new substances are made
		dissolve	when a solution is made from a liquid and one other substance
		evaporation	the change of state from a liquid to a gas which happens slowly from the surface of a liquid
		filtering	a method of separating insoluble solids from a liquid
		heating	raising the temperature of a substance
		insoluble	cannot dissolve in a liquid
		irreversible change	when a change cannot be undone to get the same substances back again
		mixture	two or more substances that can be easily separated
		reversible change	when a change can be undone to get the same substances back again
		sieve	equipment used to separate solids of different sizes
		soluble	can dissolve in a liquid
		solution	made by dissolving a substance in a liquid
		states of matter	the different forms that materials can take
		substance	what something is made up of
		habitat	an area where animals and plants live
		landfill	an area or site where waste materials are disposed of. Often the waste is buried underneath the ground
		microplastics	pieces of plastic which are smaller than 5 millimetres
		plastic	an artificial material that is strong, lightweight and mouldable
		pollution	when humans add harmful materials to the environment
		plastic pollution	when humans add plastic into the environment

Reversible and Irreversible Changes

reversible change - when a change can be undone to get the same substances back again. To **reverse** means to go back



The three states of matter are **solids, liquids and gases**.

- Some changes can be reversed, such as dissolving, mixing and changes of state.
- Changes of state include freezing, melting, evaporation and condensation.
- If you can retrieve the substances that you started with, then the change is reversible.

irreversible change - when a change cannot be undone to get the same substances back again.



An irreversible change is when a change cannot be undone to get the same substances back again.

- Irreversible changes result in new substances being made.
- When a new substance is made, a **chemical reaction** has taken place.
- Burning is an example of an irreversible change.

Plastics Facts:

- Plastics are designed to last a very long time and do not break down easily.
- Plastics can end up in landfill sites as well as the oceans. This has an impact on animal and plant life.
- As a result of plastic pollution, lots of plastic ends up in landfill sites and the oceans.
- Microplastics are tiny pieces of plastic.
- Microplastics can be eaten by animals.





Topic	RE	Theme	Creation	Year Group	5
Key Question	What does it mean to be a Muslim in Britain today?				

What I should already know	Key Learning
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- | | |
|---|---|
| <ul style="list-style-type: none"> Muslims believe in Allah as the one true God. They use 99 names for Allah to understand him better. They believe that Muhammad is God's messenger. There are five pillars in Islam (profession of faith, prayer, charity, fasting, pilgrimage). | <ul style="list-style-type: none"> Muslims believe that God is One and Prophet Muhammad is his messenger. The Shahadah is a declaration Muslims make to join the faith. The Shahadah shows that Muslims believe in one God and that Muhammad is the prophet of Allah. Muslims believe in the Five Pillars of Islam - faith, fasting, charity, prayer and pilgrimage. The pillars of Islam provide structure for Islamic daily life and help Muslims through the journey of life. Muslims are expected to pray 5 times a day. Praying gives Muslims a feeling of connection to Allah and to all the other Muslims around the world. Zakat is the third pillar of Islam and is all about looking after others. Every year, Muslims give some of their savings to charity. Sawm is the fourth pillar and calls for Muslims to fast. During Ramadan, the ninth month, Muslims fast during daylight hours. Fasting allows Muslims to devote themselves to their faith and reminds them of the suffering of others. At least once in their life, Muslims go on a pilgrimage to the Kaaba (the sacred house of Allah) in Mecca. It is important to Muslims as Mecca is the place where the Islamic religion started. |
|---|---|

The Five Pillars of Islam

These are the five most important duties for Muslims.

أركان الإسلام الخمسة

هذه هي الأركان الخمسة المهمة للمسلمين.

<p>الشهادتان The Shahadah شهادة أن لا إله إلا الله وأن محمداً رسول الله. The belief that there is no God but Allah and that Muhammad is his messenger.</p>	<p>الصلاة Salah حسبى صلوات فى اليوم. Praying five times a day.</p>	<p>الزكاة Zakat إخراج جزء من المال للفقراء والمساكين. Making an annual charitable donation to help the poor.</p>	<p>الصوم Sawm صوم رمضان. Fasting during the month of Ramadan.</p>	<p>الحج Hajj حج البيت فى مكة لمن استطاع إليه سبيلاً. Attending the pilgrimage to Makkah once in your lifetime.</p>
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Muhammad is so highly respected by Muslims that they will say "peace be upon him" after his name is spoken.



Key Beliefs: Muslims believe that there is only one God called Allah. They believe Allah is the only ruler of the universe. The word 'Islam' means submission and obedience to Allah.

Key Vocabulary

- Allah:** Arabic word for God. In Islam, Allah is the absolute one; unique, all powerful, all knowing.
- Five Pillars of Islam:** The five things that Muslims are expected to do.
- Hajj:** Muslim pilgrimage to Mecca
- Islam:** Second largest religion in the world, founded by the Prophet Muhammad (pbuh).
- Mecca:** Mecca is an important place to Muslims. It is where Muhammad was born. Muslims face Mecca and pray and try to visit it sometime during their lives.
- Mosque:** Muslim place of worship.
- Muslim:** Someone who follows the teachings of Islam.
- Prophets:** Special messengers sent from Allah.
- Prophet Muhammad:** The last prophet and the key prophet in Islam.
- Shahadah:** Muslim belief that there is no God but Allah and Mohammad is the messenger of Allah.
- Qur'an:** Islamic sacred book believed to be the word of Allah as dictated to Muhammad.
- Zakah:** Charity



Key Learning

- To use formulae within a spreadsheet to convert measurements of length and distance.
- To use a spreadsheet to model a real-life problem.
- To use spreadsheet tools to investigate probability.
- To use the count tool to answer hypotheses about common letters in use.

Key Resources



2Calculate

Key Spreadsheet Vocabulary

Budget

The amount of money available to spend on a project.

Expenses

A cost associated with a project. For example, the cost of buying ingredients for a cake sale, materials for making banners etc.

Hypothesis

A concept or idea that you test through research and experiments. The plural of hypothesis is hypotheses.

Columns

Boxes running vertically in a spreadsheet.

Format

The way that text looks. Formatting cells is helpful for interpreting a cell's contents for example you might want to format a cell to show a fraction e.g. $4 \frac{1}{2}$ or include units such as £ or \$.

Profit

Money that is earned in trade or business after paying the costs of producing and selling goods and services. For example, the amount of money there is from a cake sale when the cost of creating them has been subtracted.

Computational model

Creating or using a simulation (a model) of a real-life situation, on a computer.

Count tool

Counts how many of a variable there are in a spreadsheet.

Formula

A group of letters, numbers, or other symbols which represents a scientific or mathematical rule. The plural of formula is formulae.

Totalling tool

Adds up the value of every cell above it, next to it or diagonal to it according to which total tool is selected.

Data

A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making

Formula Bar

An area of the spreadsheet into which formulae can be entered using the '=' sign to open the formula.

Rows

Boxes running horizontally in a spreadsheet.

Dice tool

Simulates the roll of a die to a random number between 1 and 6 when you click on it.

Key Questions

How would you add a formula so that the cell shows the product of two other cells?

Click on the cell where you want the product to be displayed then click the formula wizard button. Click on the cell that contains the first number. Choose the x operation then click on the second number. Click OK.

What would you use in 2Calculate to have a cell that automatically calculates the number of days since a certain date?

You could use formulae and the totalling tools. To make the spreadsheet easier to understand, you could use named variables.

Explain what a spreadsheet model of a real-life situation is and what it can be used for?

It represents the data of a situation for example: Budgeting for a party; working out how big a field needs to be for a certain number of animals; working out how to spend your pocket money over time. Using the existing data to predict what time your shadow will be a certain length etc.



Key Learning

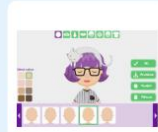
- To learn how to search for information in a database.
- To contribute to a class database.
- To create a database around a chosen topic.

Key Resources

purple mash



2Investigate



Avatar builder

Key Vocabulary

Arrange

Sorting information in order against a search request.

Avatar

An icon or figure representing a person in a video game, internet forum, etc.

Chart

A diagram that represents data. Charts include graphs and other diagrams such as pie charts or flowcharts.

Key Questions

What is a database?

A collection of data organised in such a way that it can be searched, and information found easily. Database usually refers to data stored on computers.

Why is the collaborative feature important?

Making a database collaborative allows lots of people to enter information into the database at the same time. This is a lot quicker than one person entering the data by themselves.

In what ways can I sort information in a database?

A database can hold lots of information so it is essential that information can be effectively investigated. In 2Investigate, data can be searched and sorted in a variety of ways. It can also be presented pictorially.

Key Images



Open, close or share a file



Design a new database



Add a record to the database



Find information in the database



Sort, group and arrange information



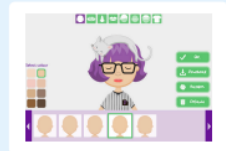
Statistics and reports



Represent the information as a chart



Table view of records



Avatar creator

Collaborative

Produced by, or involving, two or more parties working together.

Data

A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making.

Database

A set of data that can be held in a computer in a format that can be searched and sorted for information.

Field

A heading in a database record against which information is entered.

Record

A collection of data about one item entered into a database.

Group

Putting similar pieces of information together in a database so it is easy to read, understand and interpret.

Database Report

A way of producing a written paragraph that incorporates the data from the fields and records of the database.

Search

A way of finding information.

Statistics

The study and manipulation of data, including ways to gather, review, analyse, and draw conclusions from data.

Sort

Organising data by a rule such as alphabetical or numerical.



La ropa

phonics

ga • gafas

go • gorra
• abrigo

gu • guantes

stress placement

Words that end in a vowel, 'n' or 's' are normally stressed on the second to last syllable like guan-tes, a-bri-go and blu-sa.

accents

Accents indicate the vowel is stressed. As seen in the verb lle-váis.

vocabulary

21 items of clothing and their determiners.



A new verb

llevar to wear **llevo** I wear

The words for the possessive adjective 'my' in Spanish.

mi **mis**

grammar

To understand the role of plurality in the choice of possessives.

mi falda **mis faldas**
Singular possessive adjective *plural possessive adjective*

To understand adjectival agreement.

Mi suéter rojo. **Mi falda roja.**

Spelling of the colour (adjective) 'red' changes in Spanish depending on the gender of the noun.

1st person conjugation of high-frequency verbs.

llevo I wear

What I will learn:

- Objective 1: I will learn 11 nouns and their determiners for items of clothing.
- Objective 2: I will learn 10 more nouns and their determiners for items of clothing.
- Objective 3: I will learn how to say what I am wearing in Spanish using the verb 'llevo...' (I wear) plus the item of clothing.
- Objective 4: I will learn more about adjectival agreement in Spanish by describing items of clothing by colour.
- Objective 5: I will use all my new knowledge in Spanish to describe what I am packing in my suitcase for a holiday.

What do you wear?

llevo... → **I wear...**

 un abrigo	 un suéter	 un vestido	 un traje de baño	 unos guantes	 unas botas
 una camiseta	 una chaqueta	 una camisa	 unos pantalones cortos	 unos calcetines	 unas medias
 una gorra	 una falda	 una corbata	 una bufanda	 unos zapatos	 unas gafas
				 unos pantalones	 unas sandalias



Topic	Music - South and West Africa	Theme	Creation	Year Group	5
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Vocabulary

Chord Two or more notes that are played at the same time and work in harmony.

Chord progression A group of chords played in a particular order.

Major chords A chord made up of three notes. Major chords are often described as happy chords.

Minor chords A chord made up of three notes. Minor chords are often described as sad chords.

Break When some instruments stop playing and others change the rhythm.

Call and response A musical technique that is similar to a conversation. One phrase of music acts as the 'call' and is 'answered' by a different phrase.

A capella Singing without any musical accompaniment.

Soloist A musician or singer who performs on their own, known as performing a solo.

Duo Two musicians or singers who perform together, known as performing a duet.

Ostinato

A repeated pattern or phrase.

Polyrhythms

Many rhythms played at once.

Syncopation

Playing on the off-beat.

Rest

The silences in music.

Metronome

A device that can be set to create a steady sound (beat) to help musicians play rhythms accurately.



Tips for improving your performance - FACE

Fluency - Being able to play without hesitancy.

Accuracy - Getting the melody and the words correct.

Control - Controlling the sound and music being created or sung.

Expression - Giving a personal response to the music.

Instruments

Percussion instruments

Instruments which are played by shaking, tapping or scraping with your hand or a beater.



Key knowledge

- To know that songs sung in other languages can contain sounds that are unfamiliar to us, like the clicks of the Xhosa language.
- To know that 'The Click Song' is a traditional song sung in the Xhosa language and is believed to bring good luck at weddings.
- To understand that major chords create a bright, happy sound.
- To know that poly-rhythms means many rhythms played at once.



Key vocabulary

art medium
 atmosphere
 background
 carbon paper
 collage
 composition
 continuous line
 drawing
 evaluate
 justify
 mixed media
 monoprint
 multi media
 paint wash
 portrait
 printmaking
 represent
 research
 self-portrait
 texture
 transfer



Mixed media artwork uses a combination of different materials.



Self-portraits can communicate things about the artist depending on:

- The composition
- The materials used
- What is included in the background
- The artist's clothes
- Their facial expression

Match the materials you choose to the effect you want to create

Dreamy Relaxed and happy Bold

Formal elements:

- **Colour:** Artists use colour to create an atmosphere or to represent feelings in artwork, for example by using warm or cool colours.
- **Pattern:** Artists create pattern to add expressive detail to art works, for example Chila Kumari Singh Burman using small everyday objects to add detail to sculptures.
- **Tone:** Tone can help show the foreground and background in artwork.

Add contrast with a background

Collage Wash of paint

Collage	Cutting, arranging and sticking materials like paper, fabric etc to a background
Identity	Your qualities or beliefs that make you unique
Mixed media	Art made from a combination of different materials
Monoprint	A print that can only be made exactly the same way once
Multi-media	Artwork that includes audio or video elements
Photomontage	Collage made from photographs
Self-portrait	A portrait of the artist, by the artist

Creating a monoprint



Topic

Design Technology: Structures - bridges

Theme

Creation

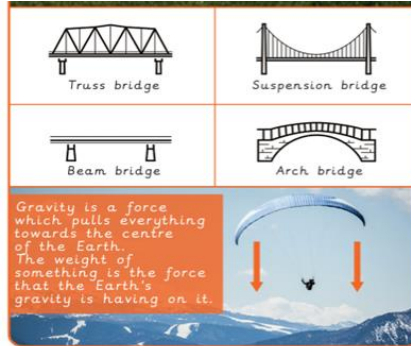
Year Group

5

Key facts

Kapow Primary

Forces can change the shape of objects, they can also make objects begin to move, speed up or slow down.



Key skills:

- Designing a stable structure that is able to support weight.
- Creating a frame structure with focus on triangulation.
- Making a range of different shaped beam bridges.
- Using triangles to create truss bridges that span a given distance and support a load.
- Building a wooden bridge structure.
- Independently measuring and marking wood accurately.
- Selecting appropriate tools and equipment for particular tasks.
- Using the correct techniques to saw safely.
- Identifying where a structure needs reinforcement and using card corners for support.
- Explaining why selecting appropriate materials is an important part of the design process.
- Understanding basic wood functional properties.
- Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary.
- Suggesting points for improvements for own bridges and those designed by others.

Key knowledge:

- To understand some different ways to reinforce structures.
- To understand how triangles can be used to reinforce bridges.
- To know that properties are words that describe the form and function of materials.
- To understand why material selection is important based on their properties.
- To understand the material (functional and aesthetic) properties of wood.

Structures - Bridges

Accurate	Neat, correct shape, size and pattern with no mistakes.
Arch bridge	A bridge which is built with a curved arch.
Beam bridge	A bridge which is built with horizontal beams and vertical pillars.
Bench hook	A tool which hooks onto the edge of the workbench. It's used to hold woodwork still when sawing.
Compression	A squashing force caused when parts of a structure are pushed together.
Coping saw	A saw with a narrow D-shaped metal blade, used for cutting curves in wood.
File	A tool used to smooth down rough edges on wood or metal materials.
Mark out	To measure and mark where a piece of material needs to be cut or shaped.
Reinforce	To make a structure or material stronger, especially by adding another material or element to it.
Sand paper	Strong paper with sand on one side to smooth or polish woodwork.
Set square or Try square	A right-angle triangular plate, wood or metal tool used for drawing lines at 90°, 45°, 60°, or 30°.
Shape	The form of an object.
Structure	Something which stands, usually on its own.
Suspension bridge	A bridge which is supported by vertical cables and suspended by cables which run between pillars that are connected onto either end of the bridge.
Tenon saw	A saw with a flat blade, used for cutting wood in straight lines or angles.
Tension	A stretching force caused by two parts of a structure being pulled apart.
Truss bridge	A bridge which is built from a series of triangular beams.



← wooden truss bridge.