Key Vocabulary:

Pulley

Lever

Conductor

Control

Mechanical systems

Design

Create

Evaluate

Computer

'Makey Makey'

Inventions

Technology

Future

Load

Force

Fulcrum

Year 3 – Spring Term - Makey Makey

Summary:

This term, the children will be making a Banana Keyboard using Makey Makey. They will make control and monitor models using software designed for this purpose. Before creating they will design a game controller and learn how to control a computer using everyday objects. Using different materials they will investigate which make good conductors.

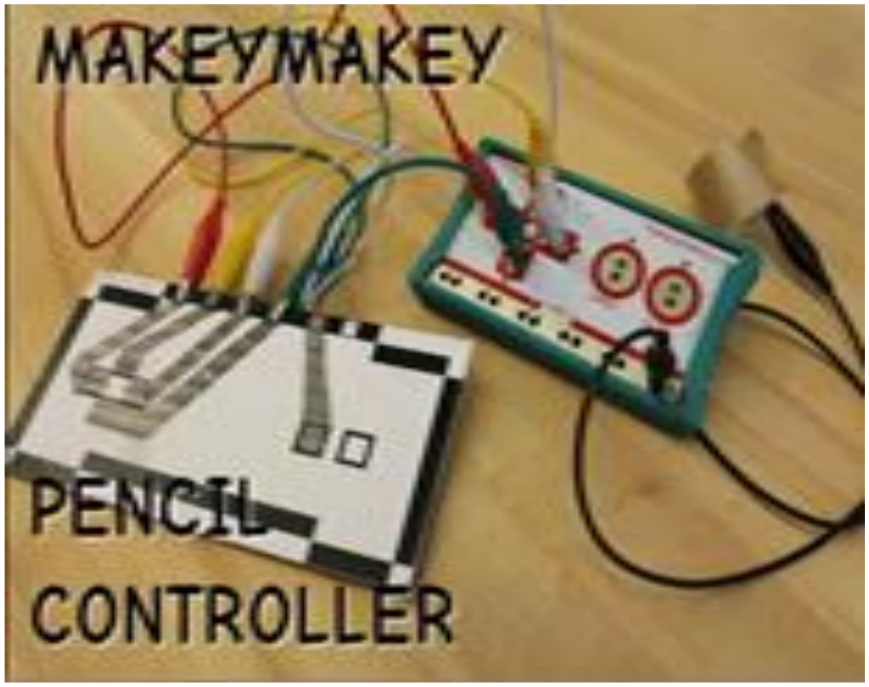
As well as this, they will design and create pinball machines, explain pulleys and levers.

At the end of the topic the children will know that:

- The Makey Makey is a piece of equipment that allows them to control computers.
- They can connect everyday objects to make computer keyboards.
- Only materials, which are conductors, will work but these can be only slightly conductive to work.
- Some materials that will work include bananas, play doh, marshmallows and water.

In Design and Technology we will be learning to:

- To understand how key events and individuals in design and technology have helped shape the world.
- To understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).
- Design and make a pinball machine.
- Apply our knowledge of forces to make the pinball machine work.
- Design with purpose by identifying opportunities to design.
- Make products by working efficiently (such as by carefully selecting materials).
- Use research and develop design criteria to inform the design of innovative, products that are aimed at particular individuals or groups
- To generate their ideas through discussion, annotated sketches.
- Refine work and techniques as work progresses, continually evaluating the product design.
- To control and monitor models using software designed for this purpose
- Design a game controller.
- To learn how to control a computer using everyday objects.
- To investigate which materials will work.

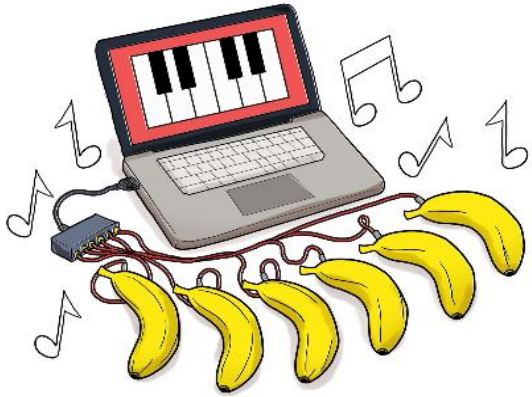


At the end of the DT topic I will know:

What is needed to create effective design, thinking carefully about how it will appeal to a range of audiences. I will know how to design with purpose, refine my work and techniques as work progresses and continually evaluating the product design. I will then think carefully about what worked well for me and what I would change if I made the product again.
I will know that pulleys and levers are used in mechanical devices and that a lever is a simple machine which helps us to project objects.
I will know that the object you are lifting is called the load, and the force you apply to the arm to make the object move is called the effort.
A pulley is a simple machine that makes it easier to lift or move a heavy object. It includes at least one wheel and a length of rope.
Makey Makey:

I will know how to use a piece of equipment called the Makey Makey, which will enable me to control computers using everyday objects such as bananas. I will know that conductors allow electricity to travel through them and I can use this along with the Makey Makey. I will know how to make a banana keyboard by connecting wires to the bananas and then to the Makey Makey. The Makey Makey is a piece of equipment that allows me to control computers.

I will be able to connect everyday objects to make computer keyboards.
I will explore only with materials, which are conductors, which will work but
these can be only slightly conductive to work. An electrical conductor is a material
that allows electricity to flow through it. Wires need to connect with a conductor to
make the product work. Electricity can flow through a banana and water. We will look at different materials
that will work include bananas, play doh, marshmallows and water.

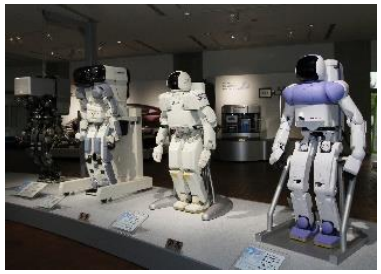


In History I will learn:

- Describe accounts of a historical event.
- Place events on a time-line using dates.
- Use evidence to find answers to questions about the past.

By the end of this term I will know:

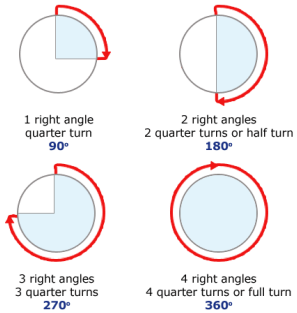
Robot is a **Czech** word 'robota' that means forced work or labour. A robot is a man-made machine that can perform work or other actions normally performed by humans, either automatically or by remote control. The first ever robot was created in the 5th century BC by Archytas of Tarentum in the form of mechanical doves. Leonardo da Vinci drew plans for a robotic machine, kind of an armoured humanoid in 1495. The first humanoid robot was Elektro built by Westinghouse in 1939.
Overtime, robots have changed so that they no longer look like people. The most successful of this kind was designed in the 20th century. George Devol made the first of these, the Unimate, in 1954, with one arm and one hand.

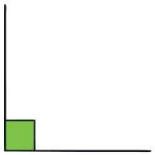


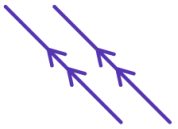
In Maths we will be learning to:

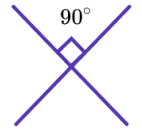
Properties of shapes

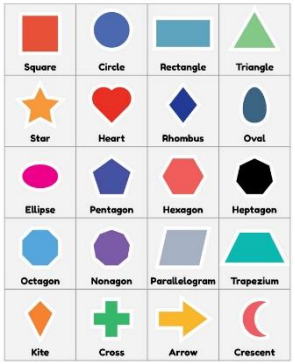
- To identify turns and angles
- To identify right angles in shapes
- To compare angles
- To draw accurately
- To identify horizontal and vertical
- To identify parallel and perpendicular
- To recognise and describe 2-D shapes
- To recognise and describe 3-D shapes
- To make 3-D shapes

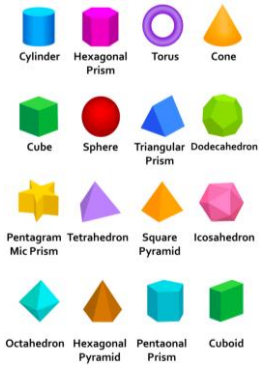






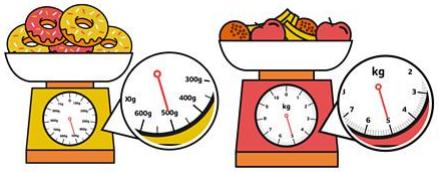


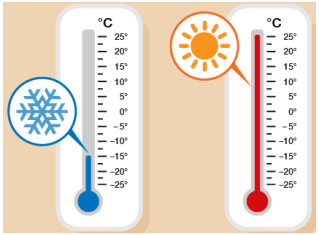


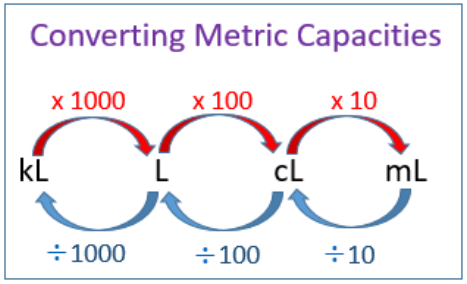


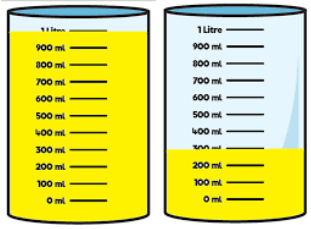
Mass and capacity

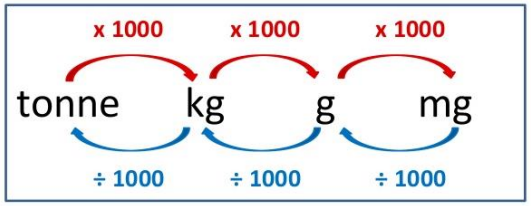
- To compare mass
- To measure mass
- To add and subtract mass
- To compare volume
- To measure capacity
- To compare capacity
- To add and subtract capacity
- To explore temperature









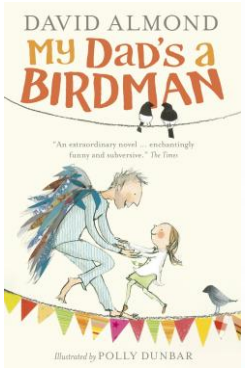


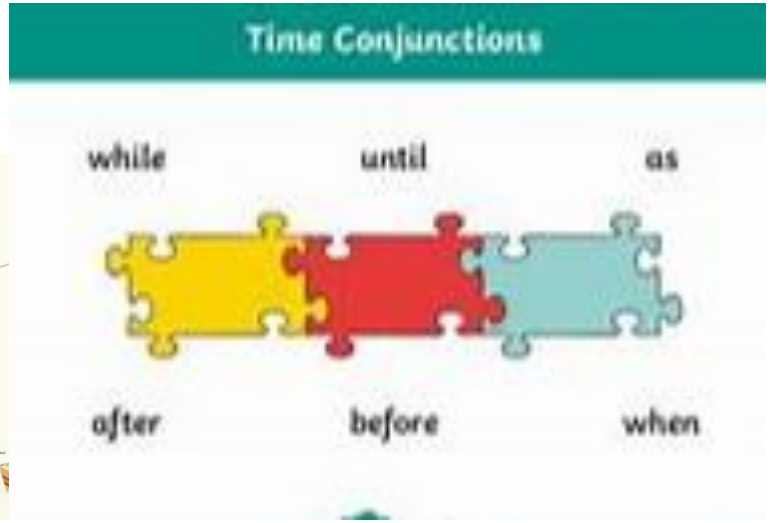
In English we will be learning:

This half term, we will be writing in a variety of styles including a warning story, a persuasive leaflet and a poem based on the texts 'Gussie goes bonkers' and the making of a pinball machine. During these lessons, children will get the opportunity to identify the features, use the features in their writing along with editing and redrafting their work. Children will also use their speaking and listening skills when carrying out role play activities and drama.

In our Grammar lessons the children will be learning about paragraphs, inverted commas, adverbs and time conjunctions.

Books we will read: My Dad's a Birdman





In Science we are learning to:

- To identify the forces acting on objects.
- To investigate the effects of friction on different surfaces
- To sort magnetic and non-magnetic materials
- To investigate the strength of magnets
- To observe how magnets attract some materials
- To explore magnetic poles

Forces and Magnets

Year 3

Key Vocabulary

forces	Pushes or pulls.
friction	A force that acts between two surfaces or objects that are moving, or trying to move, across each other.
surface	The top layer of something.

Key Knowledge

Different surfaces create different amounts of friction. The amount of friction created by an object moving over a surface depends on the roughness of the surface and the object, and the force between them.

The driving force pushes the bicycle, making it move.

Friction pushes on the bicycle, slowing it down.

Pushes

Pulls

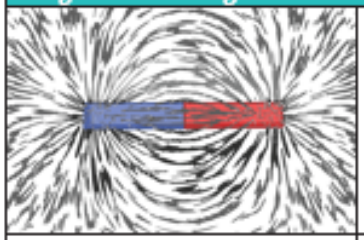
Forces will change the motion of an object.
They will either make it start to move, speed up, slow it down or even make it stop.

Forces and Magnets

Year 3

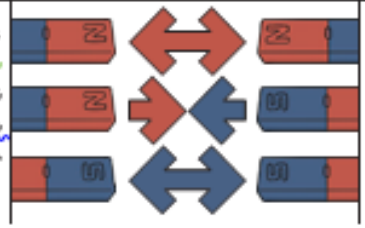
Key Vocabulary	
magnet	An object which produces a magnetic force that pulls certain objects towards it.
magnetic	Objects which are attracted to a magnet are magnetic. Objects containing iron, nickel or cobalt metals are magnetic.
magnetic field	The area around a magnet where there is a magnetic force which will pull magnetic objects towards the magnet.
poles	North and south poles are found at different ends of a magnet.
repel	Repulsion is a force that pushes objects away. For example, when a north pole is placed near the north pole of another magnet, the two poles repel (push away from each other).
attract	Attraction is a force that pulls objects together. For example, when a north pole is placed near the south pole of another magnet, the two poles attract (pull together).

Key Knowledge



Like poles repel.
Opposite poles attract.

A magnetic field is invisible. You can see the magnetic field here though. This is what happens when iron filings are placed on top of a piece of paper with a magnet underneath.



The needle in a compass is a magnet. A compass always points north-south on Earth.

Magnetic ✓

These objects contain iron, nickel or cobalt. Not all metals are magnetic.

Non-magnetic ✗

These objects do not contain iron, nickel or cobalt.

Computing

At the end of the unit I will know:

- To understand what a network is and understand our school network.
- To understand how information moves around a network and begin to recognise real world networks.
- To understand how the Internet works and explain a website's journey.
- To explore the role of routers.
- To understand the role of packets.

Journey inside a computer

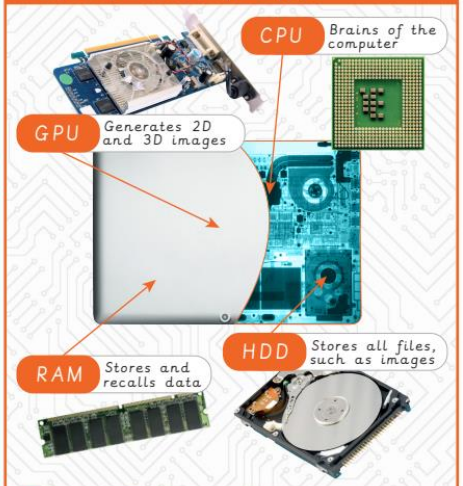
Algorithm	A sequence of instructions when followed, solve a problem.
Computer	Electronic machine that accepts and processes information to produce an output, and then stores the results.
Computer Program	A series of instructions, that are written for a computer to follow, using inputs and outputs to produce an outcome. Also known as software or applications (apps).
CPU	Central Processing Unit. The brain of a computer that deals with all the data it receives from input and output devices, as well as programs run within the computer.
Data	Information used for a specific purpose or investigation.
Desktop	A tower computer that needs a mouse, keyboard and monitor, that remains in one place.
GPU	Graphics Processing Unit. It is a piece of hardware that is used to help generate 2D and 3D images for programs such as games.
Hard disk drive HDD	An internal or external device that can store information such as files, documents, images and programs.
Instructions	A series of steps that need to be performed in order.
QR code	Quick Response code. Is presented in a similar way to a bar code and when scanned, takes you to a specific website or provide information.
RAM	Random Access Memory. A piece of hardware that allows data to be recalled or stored within a computer.
ROM	Read Only Memory. Information stored within ROM can only be read and not edited.
Tablet device	A handheld computer, that consists of a touchscreen, operating system and a rechargeable battery.
Trackpad	An input device commonly found built into laptops. It is used to move the cursor with the touch of your finger, and some allow for multiple finger gestures.

Scan each of these quick response codes, with a QR scanner app or device and see where they go!

Key facts

Kapow Primary

Computer parts inside of a laptop:



Other portable electronic devices:

PSHE

In PHSE we continue to use My Happy Mind: the focus this half term is 'relate' and 'engage'.

Relate

This module is focused on teaching children the importance of being able to relate or get along with others in order to have positive relationships.

Engage

This module focuses on bringing together everything the children have learnt throughout the myHappymind curriculum. It has a particular focus on using the knowledge and skills they have acquired to help them to engage in the world through Goal Setting. Integral to this is focusing on the Character Strength of perseverance, /resilience. At the end of this module there is an opportunity to recap on everything they have learnt through their journey, so the module contains a lot of self-reflection.

Vocabulary: Character Strengths, Relate, Get Along, People, Active Listening, Team H-A -P, Happy Breathing, 'Stop, Understand, Consider', Friendships, Relationships, Differences

In R.E. we are learning:

Philosophy Lens : What is philosophy? and how do people make moral decisions?

- To compare differences between religious beliefs, practices and rituals.
- To evaluate the impact of different beliefs on moral decision making.

Theology Lens : What do Muslims believe about God?

- To classify and compare the 99 Names of Allah.
- To examine and explain the concept of Tawhid.
- To investigate the history, content and importance of the Qur'an
- To identify and sequence the life events of The Prophet Muhammad.
- To design a piece of art inspired by Islamic belief and culture.

PE

In PE I will be learning:

Gymfit circuits

LO: To identify techniques to improve balance.

LO: To practise a range of gymnastic skills through a series of circuits.

LO: To perform a range of gymnastic skills with increased accuracy.

LO: To perform a sequence of gymnastic moves within a circuit.

LO: To perform a sequence of moves at each station within a circuit with increased accuracy

LO: To perform a sequence of moves at each station within a circuit with increased accuracy