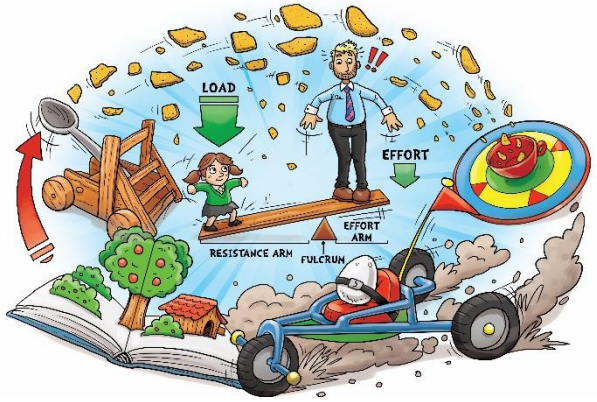
Theme Name: Marvellous Mechanisms

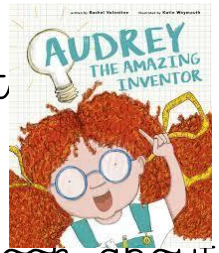
Summary:
We will find out all about levers, wheels and winding mechanisms. We will then put our knowledge of levers to work to design a 'flying Frosties' game - where we will use a lever to fling Frosties into the air, hopefully landing them on a target board. We will then design a mechanism to lift the teacher! We will learn about the history of catapults and how they have changed throughout time. We will learn to join materials using a running stitch to make keyrings to sell at our enterprise stall.



A variety of marvellous mechanisms

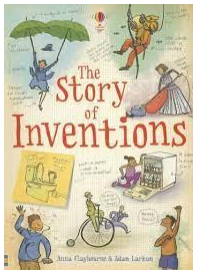
Is it possible to lift a teacher?

Texts we will be reading:
Audrey the Amazing Invent
by Rachel Valentine



We will read this fiction book about a little girl who wants to be an inventor but all her inventions go wrong. Will anything ever go to plan? Will some wise words from her Dad help?

The Story of Inventions
by Anna Claybourne
We will also read this non-fiction book about amazing inventions and learn what it takes to become a successful inventor.



Activities:
In English, we will be writing our own story based on the events from Audrey the Amazing Inventor. We will also write a persuasive text to advertise our enterprise stall.
In History, we will explore how catapults have changed over time.
In Science, we will learn about an animal's suitability to their habitat and the effects of deforestation.
In DT, we will explore how levers, wheels and winding mechanisms work and will create our own to lift a teacher. We will write an explanation of how our mechanisms work. We will also design and make a flying frosties game using levers. We will join materials using running stitch to make a keyring.
In Art we will be creating a piece of art work in the style of Jonathon Pradillon.

Key Vocabulary:

Habitat – the home of a living thing

Microhabitat – a small area where a living thing lives

Basic needs – necessary to survive

Suitable – right or appropriate

Adaptation – the process of changing

Organism – an individual animal, plant or single-celled life form

Deforestation – the clearing of forest land.

Key Vocabulary:

Mechanism – a system of parts working together in a machine

Levers – a bar resting on a fulcrum used to move a heavy load with one end when force is applied to the other

Force – a push, pull or twist

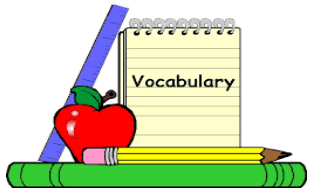
Fulcrum – the point against which a lever is placed

Winding mechanism – anything that has been wound or wrapped around something

Catapult – a mechanism used to hurl or launch something

Decade – 10 years

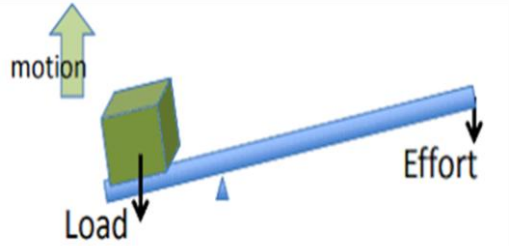
Century – 100 years

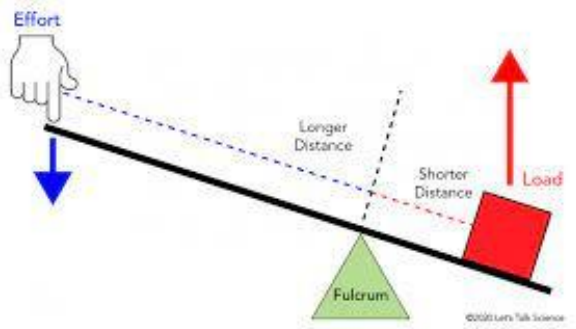


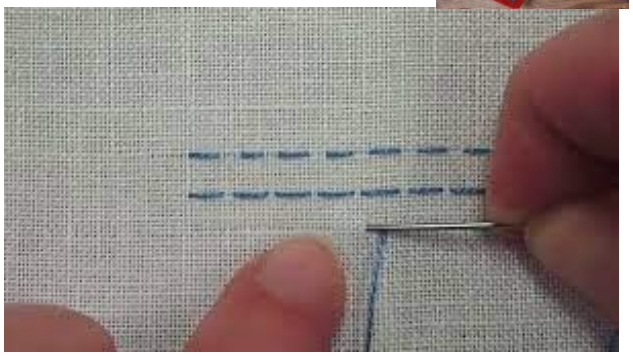
Year 2 Summer 1

In DT we will be learning to:

Explore how products have been created. Explore levers, wheels and winding mechanisms. Suggest improvements to existing designs. Explore objects and designs to suggest likes and dislikes. Create products using levers, wheels and winding mechanisms. Make products refining the design as work progresses. Shape textiles using templates and join textiles using running stitch. Use their knowledge learnt about levers and other mechanisms to lift the teacher.







At the end of the topic, I will know that:

A catapult is a device used to propel an object a long distance. It was used as a weapon in medieval times. Catapults use weights and levers to send rocks (or frosties) into the air. A key part to a lever is the **fulcrum**. This is a fixed point that allows the lever to rotate around it. The fulcrum can be in the centre (seesaw) or at one end (hinge on a door). They have a bucket for the weapon (rock or frosties). The bucket is held back with a restraint such as a rope before being released to release the load. A keyring is a practical ring to hold different keys. Running stitch is where the needle goes into the material and out through the opposite side and makes a neat dashed line on either side.
The needle and thread you use depends on the type of material you use.

In Art we will be learning to:
Respond to ideas and starting points.
Describe the work of notable artists, artisans and designers. Draw lines of different sizes and thickness.

At the end of the topic, I will know:
That Jonathon Pradillon is a modern artist who created the art work 'Mechanisms' in 2017. He was passionate about art since his early childhood and enjoyed mixing and playing with colours and shapes.
That I can create different thicknesses of circle outlines by changing the size of my pen nib or by creating layers of ink.
That I can create a circle using a compass or a 2d shape.
That I can overlap shapes to have an artistic effect.

Jonathon Pradillon 'Mechanisms', 2017

In History we will be learning to:

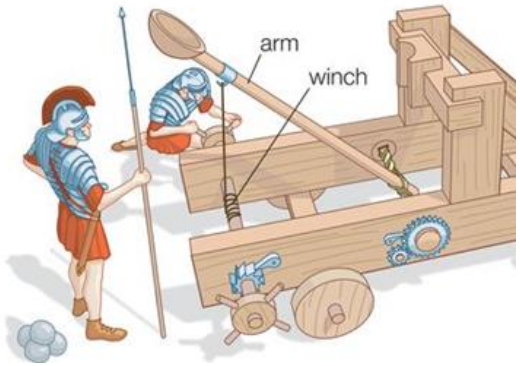
Recount changes over time. Understand how some items from the past may still be used today but may have been adapted for use.Communicate historically using vocabulary such as; past, present, older, newer, a long time ago, recently, years, decades and centuries. Recognise there are reasons why people in the past acted as they did.

At the end of this topic I will know:

·Catapults used to be made out of wood but are now made from stronger material such as metal.

·Catapults were first invented in Greece and are still used today.

·Catapults used to be used as weapons.

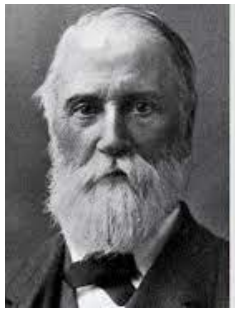


In Science we will be learning to:

Identify that most living things live in habitats to which they are suited. Describe how different habitats provide for the basic needs of a range of animals and plants and how they depend on each other.
Identify and name a variety of plants and animals in their habitats, including microhabitats.
Observe closely using simple equipment. Group and classify animals and habitats.

Influential Scientist:

Charles Darwin



At the end of this topic I will know:

That a habitat is the environment in which an animal or plant lives.
That a microhabitat is a smaller environment in which an animal or plant lives.
That animals live in habitats that are suited to their needs, which provide them with a food source, shelter and water.
Everything in a habitat relies on everything else that lives there.
Some habitats are being destroyed by mankind such as the Amazon rain forest and the negative impact this has on living things.
That deforestation is the action of clearing a wide area of trees.
That Charles Darwin was born in 1809 and died in 1882. That Charles Darwin is a Scientist who is known for his theory that all living things adapt to their surroundings, these adaptations can take centuries.

In English we will be learning to:

Identify key features of a persuasive text: an eye-catching title or opening, main points set out clearly, emotive language, rhetorical questions. Plan and write a persuasive text. Identify key features of a story including structure and language. Plan and write our own story influenced by 'Audrey the amazing inventor'. Identify and use story language: adverbs, progressive past tense , story starters, conjunctions and speech marks. Edit and improve work and to make simple additions.

By the end of term I will know:

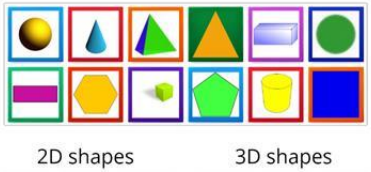
That a persuasive text is a piece of non-fiction writing which attracts the reader and persuades them to do something.
That an adverb describes a verb, for example: Walk carefully to the playground, the verb would be 'walk' and the adverb would be 'carefully'. That synonyms are words that have the same or similar meaning, for example: happy and cheerful. That an adjective is a describing word, for example: pretty, green or tall.
That conjunctions are words that can be used to join two clauses together, for example: and, or, but, so, because, if. That suffixes are a group of letters that can be added to the end of a word to change its meaning. For example; 'hopeless', 'helpful', 'amazement' and 'happiness'. The past progressive tense uses the verb to be + verb + ing .

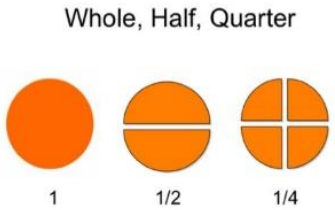
Within our reading we will continue to:

Retrieve information from the text by identifying key words from the question and using the skimming and scanning strategy to locate the answer. We will make inferences from the text by using prior knowledge and identifying clues within the text. We will make predictions about what might happen next based on what we have read so far. We will sequence events in the text. We will explore vocabulary. We will use echo and choral reading to develop fluency and expression, using our phonics to help decode and blend. Make use of punctuation to identify where to pause or how to change our voice.

In Maths we will be learning to:

Consolidate our learning:
Add and subtract any 2 two-digit numbers using the tens and one's method (e.g. 48 + 35; 72 – 17).
Count in twos, fives and tens from 0 and use this to solve problems.
Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary. For example: understanding that if 2X5=10 then5X2=10 and if 10÷2=5 then 10÷5=2.
Recognise and find 1/ 4 , 1/ 3 , 1/ 2 , 2/ 4 , 3/ 4 , of a number or shape, and know that all parts must be equal parts of the whole.
Name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.
Sort 2D and 3D shapes based on their properties.
Use reasoning about numbers and relationships to solve more complex problems and explain their thinking. For example: Jack and Sam have £14 altogether, Jack has £2 more than Sam, How much money does Sam have?





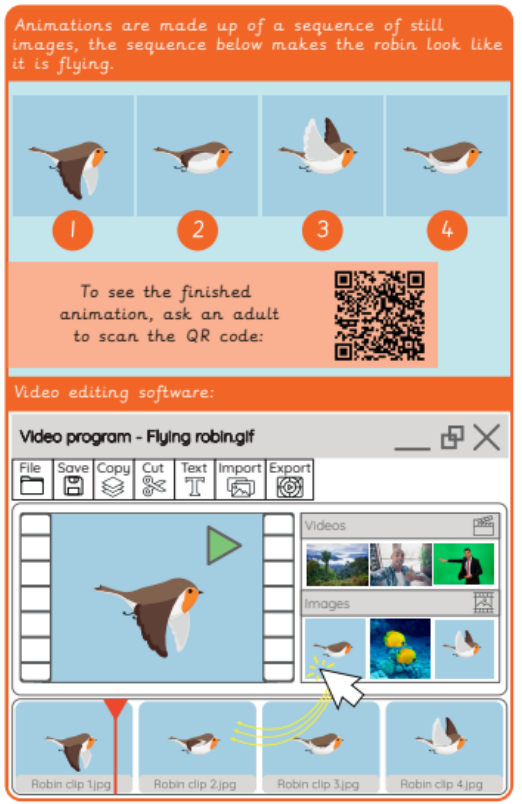
By the end of the term I will know that:

Fractions are an equal part of something whole. The top of the fraction is the numerator and the bottom is the denominator. Unit fractions are any fraction with 1 as its numerator (top number) and a whole number for the denominator (bottom number). Non-unit fractions are any fractions where the numerator (top number) is greater than 1. The denominator (bottom number) can be any whole number. 1/4 is a quarter, 1/2 is a half. 1/3 is a third and 3/4 is three quarters. Equivalent fractions are simplified fractions, you can simplify a fraction by dividing the numerator and denominator by the same number. 1/2 and 2/4 are equivalent fractions. That these are the names of some 2D shapes; Square. Circle. Triangle. Rectangle, Pentagon, Hexagon and Heptagon. 2D shapes are flat. That these are the names of some 3D shapes; Cube, Sphere, Pyramid, Cylinder, Cuboid and Cone. That 3D shapes are three dimensional. 2D shapes have the following properties; sides (the lines that go around the shape) and vertices (the point where two sides meet).3D shapes have the following properties; faces (the flat parts of the shape), edge (the part where the faces meet) and vertices (the point where edges meet). A line of symmetry is when a line can be drawn through a 2D shape and either side of the line is a reflection of the other.

Computing Key Vocabulary:

Animation	Pictures or photographs in a sequence to give the illusion of movement.
Animator	Someone who specialises in the creation of animations.
Contraption	An old-fashioned device.
Decompose	To break something down into smaller chunks.
Design	To make, draw or write plans for something.
Device	Equipment created for a certain purpose or job.
Download	Saving files from the internet, intranet or another device.
Film review	Writing your opinion about a film.
Filming	Using a video recorder to capture moving images.
Import image	To place a picture into a document or into other software.
Plan	An idea about how to do something in future.
Sketch	A rough drawing to help you plan.
Software	A series of instructions written for a computer to follow.
Stop motion	A sequence of photographs used to create an animation.
Storyboard	A sequence of sketches that show what you plan to make for an animation or video.
Upload	To send files from one device to another device.

In computing I will know:



Animators normally sketch a storyboard to plan their ideas and the sequence for an animation.

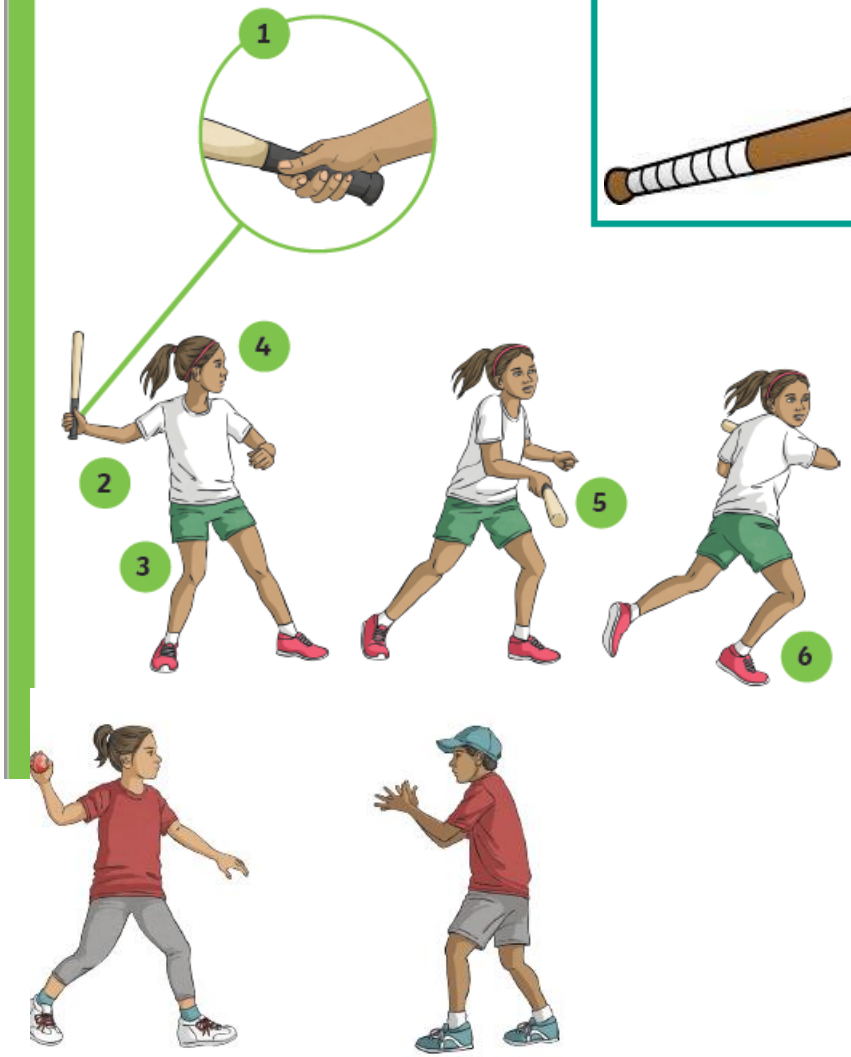
In PE we will be learning to:

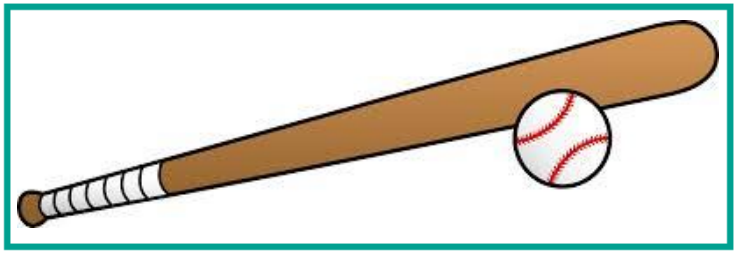
develop catching skills, throw a ball for distance, play a game (rounders) fairly and in a sporting manner, learn skills for playing striking and field games (rounders), position the body to strike a ball, strike a small ball.

By the end of the term I will know:

How to throw a ball overarm to make it go further, how to throw a ball underarm to hit a precise target. I can jump or sidestep to catch a ball and I must have my hands in a position ready to catch. How to strike a ball with a bat using the technique stated:

Skill | **Batting the Ball in Rounders** | Learning the correct batting technique will help you to hit the ball further.





Technique

1. Hold the bat with either one or two hands, using the 'handshake' grip.
2. Stand side-on to the bowler, holding the bat behind you.
3. Keep your weight over your back leg.
4. Watch the ball throughout.
5. As the ball gets closer, begin to swing your bat forward.
6. Transfer your weight to your front leg, leaning into the swing as you make contact with the ball.

In RE we will be learning to:

Know about the special events in my life, understand how I can are for others and what I can do to make the world a better place, understand the story of The Good Samaritan.

By the end of the term I will know:

That birthdays, anniversaries, weddings, christenings are special events in my life as well as the religious events that I celebrate such as Christmas, Easter, Ramadan, Hannukah.

That I can care for others by being kind, helpful and listening to the needs of others. I will listen to the Story of The Good Samaritan, I will remember the key events by performing it with members of my class and I will know the important message of the story is to help others when they are in need.

In PSHE we will be learning to:

Understand that I belong to different groups and communities. Recognise different kinds of feelings and to have simple strategies to manage these feelings. Recognise how other people are feeling and understand how to share my feelings with others.

By the end of the term I will know:

That I belong to my local community which is the area in which I live and go to school. That people in my community help to take care of each other, such as doctors, nurses, teachers, shopkeepers, policemen. That I can take care of my community by picking up litter, helping others, visiting a retirement home. That I experience different feelings and so do those around me. Feelings are also called emotions and some examples are: happy, excited, sad, bored, angry. That these feelings can have an effect on my behaviour and I can use strategies to help me manage these. When I am feeling angry I can take some time out, breathe, count to 10, talk to someone I trust. That it is important to talk about my feelings and not keep my worries to myself. Identify a trusted adult that I can talk to when I am worried or feeling overwhelmed.

National Curriculum Objectives to be covered with activities:

Design and Technology

- To design purposeful, functional, appealing products for themselves and other users based on design criteria
- Explore and evaluate a range of existing products
- Explore and use mechanisms; wheels, levers and winding mechanisms in their products

Art

- To use drawing, painting and sculpture to develop and share their ideas, experiences and imagination
- To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space
- About the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work.

History

- To understand changes within living memory. Where appropriate, these should be used to reveal aspects of change in national life.
- The lives of significant individuals in the past who have contributed to national and international achievements.

Science

- To identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- To identify and name a variety of plants and animals in their habitats, including microhabitats

National Curriculum Objectives to be covered with activities:

English

- To develop positive attitudes towards and stamina for writing by:
- writing narratives about personal experiences and those of others (real and fictional)
- writing about real events
- writing for different purposes
- Consider what they are going to write before beginning by:
- planning or saying out loud what they are going to write about
- writing down ideas and/or key words, including new vocabulary
- encapsulating what they want to say, sentence by sentence
- make simple additions, revisions and corrections to their own writing by:
- evaluating their writing with the teacher and other pupils
- re-reading to check that their writing makes sense and that verbs to indicate time are used correctly and consistently, including verbs in the continuous form
- proof-reading to check for errors in spelling, grammar and punctuation [for example, ends of sentences punctuated correctly].
- segmenting spoken words into phonemes and representing these by graphemes, spelling many correctly
- learning new ways of spelling phonemes for which one or more spellings are already known, and learn some words with each spelling, including a few common homophones
- learning to spell common exception words
- learning to spell more words with contracted forms
- learning the possessive apostrophe (singular) [for example, the girl's book]
- add suffixes to spell longer words, including -ment, -ness, -ful, -less, -ly

National Curriculum Objectives to be covered with activities:

Maths

- To recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity.
- To write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and ½.
- Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
- A two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
- Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.
- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.
- Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
- Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.
- Compare and order lengths, mass, volume/capacity and record the results using >, < and =.