

## Topic Name: Shake Things Up



### Summary:

We will find out about how one of the biggest challenges in earthquake zones, such as California in the USA, is to create buildings that can withstand the shake of an earthquake. We will research shear forces and ways engineers design earthquake-proof buildings. Our Shake Things Up Challenge will be to build a shake platform to test our prototypes and modify them until they keep the occupants of our buildings safe.

We will also be holding our Year 6 Enterprise Event – Shake Things Up. This will include designing and making lots of fun products to market and sell.

### Key Vocabulary:

**Aftershock** - A smaller earthquake that happens after, and because of, a larger earthquake.

**Epicentre** - The central point of origin of the earthquake.

**Fault line** - A crack in the earth's surface where the risk of earthquakes can be higher.

**Foreshock** - A smaller earthquake that becomes before a main earthquake.

**Mainshock** - The main and biggest earthquake.

**Magnitude** - The number given to show the size of the earthquake.

**Mercalli scale** - The scale used to measure effects of earthquakes. It ranges from 'not felt', meaning no quake was felt by anyone, to 'extreme' where well-built buildings are destroyed.

**Microquake** - The smallest measurable earthquake.

**Richter scale** - Developed by Charles Richter in 1935, it is a scale of levels from 0-10 used to measure the strength of an earthquake. Each level is ten times more than the level before it so level 4 is ten times greater than level 3.

**Ring of Fire** - The circle of volcanoes and earthquake sites in the Pacific Ocean.

**Seismic** - An adjective that describes things to do with earthquakes, for example 'there has been some seismic activity in this area'.

**Seismograph** - The instrument used to measure earthquakes.

**Seismologist** - Someone who studies earthquakes.

**Tectonic plates** - Sections of the earth's crust which are like huge jigsaw pieces.

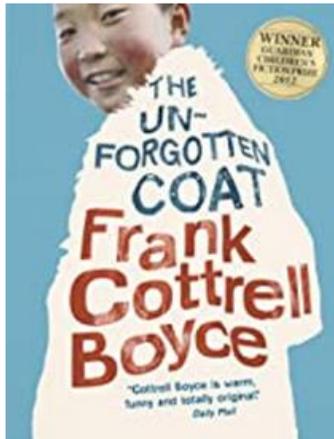
**Tremor** - Seismic activity that measures less than 4.0 on the Richter scale.

**Tsunami** - A giant wave caused by an earthquake under the ocean or an eruption of an underwater volcano.

**Valdivia earthquake** - It occurred in 1960 and is the largest recorded earthquake, measuring 9.5 on the Richter scale.

Class text that we will continue reading:

The Unforgotten Coat by Frank Cottrell Boyce



As writers we will:

- Write explanations about our designs
- Write persuasively to seek funding for our designs
- Present information about earthquakes and forces
- Write stories based on the 1906 earthquake disaster in San Francisco
- Write poems to convey the horrors of earthquakes

As mathematicians we will:

- Describe the properties of 3D shapes

As artists we will:

- Create drawings and paintings of earthquake destruction



In History and Geography, we will learn about the 1906 earthquake in California.



In Design and Technology we will learn:  
about structures and how to strengthen and stabilise our structures.

We will discover how arches are very strong shapes and we will see how architecture throughout the ages has used the arch to create stable structures and openings. We will take the Sugar Cube Arch challenge, where we will have to build our own arches out of sugar cubes.

We will explore how to stiffen and strengthen materials by rolling, folding and combining them. We will take part in the Paper Chair Challenge where we will need to make a chair that will hold our own weight out of paper!

Our next challenges will be to make a Tin Foil Tower that is strong and stable and uses only paper and tin foil, a spaghetti structure that turns a brittle material into a strong structure, and a house of cards which will turn flexible and light playing cards into a strong, stable house.

Finally, we will take part in the Great Bridge Challenge, where we will need to use all of our knowledge of structures to build a suspension bridge that is at least half a metre in length. The winner of the challenge will be the team with the best designed and strongest bridge.

### Maths

We will be consolidating our learning and practically using our Maths skills in DT and as part of our Enterprise.

The National Curriculum objectives that we will be focusing on will include:

I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

I can solve problems involving addition, subtraction, multiplication and division.

I can multiply 1-digit numbers with up to 2 decimal places by whole numbers.

I can use written division methods in cases where the answer has up to 2 decimal places.

I can use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation of up to 3 decimal places.

I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate.

I can describe simple 3D shapes.

I recognise and build simple 3D shapes, including making nets.

I can interpret and construct pie charts and line graphs and use these to solve problems





Science:

In Science we will be consolidating our learning and working scientifically to:

Measure accurately and precisely using a range of equipment.

Record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

Use the outcome of test results to make predictions and set up a further comparative fair test.

Report findings from enquiries in a range of ways.

Explain a conclusion from an enquiry.

Explain causal relationships in an enquiry.

Relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.

We will be learning to:

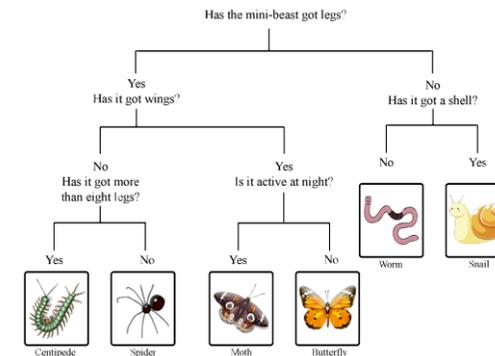
Classify living things into broad groups according to observable characteristics and based on similarities & differences.

Describe how living things have been classified.

Give reasons for classifying plants and animals in a specific way.

At the end of the half-term I will know:

How to classify plant and animals using a classification key.



## Art

### In Art we will be learning to:

Use the qualities of watercolour and acrylic paints to create visually interesting pieces.

Combine colours, tones and tints to enhance the mood of a piece.

Use brush techniques and the qualities of paint to create texture.

Develop a personal style of painting, drawing upon ideas from other artists.

Mix textures (rough and smooth, plain and patterned).

Combine visual and tactile qualities.

Use a variety of techniques to add interesting effects (e.g. reflections, shadows, direction of sunlight).

Give details (including own sketches) about the style of some notable artists, artisans and designers.

Show how the work of those studied was influential in both society and to other artists.

Create original pieces that show a range of influences and styles.

### At the end of the topic I will know:

**Warm colors like red, yellow and orange** evoke emotions, such as love, happiness, and anger. Cool colours, like blue, green and purple are linked to calmness, sadness and indifference.

The main brush techniques are:

Dry Brush.

Round Brush Techniques.

Angle Brush Techniques.

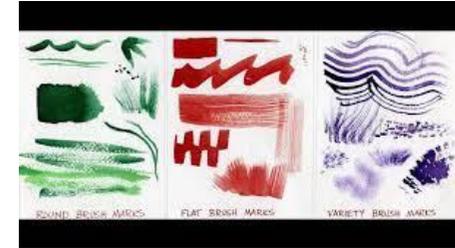
Flat Brush Techniques.

Cross-hatching.

Double And Triple Loading.

Blending.

Stippling



That Miki De Goodaboom is a French artist, who is now based in Spain. She uses different mediums in her art but does not like painting with oil. She enjoys painting scenes which involve movement.

## **DT**

In DT we will be learning to:

Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).

Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.

Demonstrate a range of baking and cooking techniques.

Create and refine recipes, including ingredients, methods, cooking times and temperatures.

Write code to control and monitor models or products.

Cut materials with precision and refine the finish with appropriate tools.

Create objects that employ a seam allowance.

Join textiles with a combination of stitching techniques.

Create circuits using electronics kits that employ a number of components (such as LEDs, resistors and transistors).

Develop a range of practical skills to create products (such as cutting, drilling and screwing).

Convert rotary motion to linear using cams.

Write code to control and monitor models or products.

**At the end of the topic I will know:**

There are a range of cooking techniques these include:

Broiling.

Grilling.

Roasting.

Baking.



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Sauteing.

Poaching.

Simmering.

Boiling.

How to make a cushion using running stitch and cross stitch.

Points of saws, drills, screwdrivers, chisels, or any other tool should be aimed down, away from your face and body, away from your friend's face and body, toward the floor. Saws should be carried parallel to the leg.

A cam mechanism is made up of two main components - a **cam** and a **follower**.

**Cam** - a rotating disk shaped to convert rotary into linear motion.

**Follower** - the component which follows the movement of the cam.

The **mechanism** causes **components** to move either in a **linear** motion (a straight line) or a **rotary** motion (goes round) .

## PSHE

In PSHE we will be continuing to learn to take responsibility for our health by learning:

To understand the potential impact of technology on physical and mental health.

To reflect on skills they have developed to identify and respond to difficult situations.

To understand ways that we help prevent ourselves and others becoming ill.

To understand how habits can be good or bad for our health.

To understand what happens when we are ill and begin to understand when to seek support.

### At the end of the topic I will know:

That too much screen time is bad for my health.

I will know that resilience is learning to bounce back.

I will know that vaccinations protect us from disease.

I know that bad habits, like smoking, negatively affect my health, whereas eating a balanced diet helps me to stay healthy.

How and when to seek support including which adults to speak to in school if I am worried about my health.



## RSE

In RSE we will learn:

To understand the changes that happen during puberty.

To understand the vocabulary related to puberty.

To understand the biology of conception

To understand the development of the baby during pregnancy.

### **At the end of the half term I will know:**

**That** Puberty is the process of physical changes through which a child's body matures into an adult body capable of sexual reproduction.

Some of the vocabulary we will be using will be:

Cervix

Ovary

Fallopian tube

Uterus

Vagina

Vulva

Penis

Testicle

Scrotum

Sperm duct

Sperm

Egg



Erection

Fertilise

Conception

Sexual intercourse

The children will know what happens during sexual intercourse.

The children will understand how the embryo develops.

## RE

In RE we will be studying Humanism.

We will be learning:

What we mean by Humanism.

What a Humanist is and examples of famous Humanists.

What makes us human and the positive and negative aspects of human beings.

What influences human behaviours.

What a symbol is.

How the symbols and logos affect the purpose of different organisations.

**At the end of the topic I will know:**

Humanism puts human beings and human interests at the centre of things. Humanists believe that fulfilment is arrived at through human effort and inventiveness rather than religion. Humanists believe that people should think freely for themselves and should act in the light of reason and experience, and in co-operation with others, for the promotion of human happiness.

Key Humanist beliefs and ideas, including the Golden Rule, living a good and happy life, equality, atheism and agnosticism and having a scientific approach to life.

Humanism is a continuous philosophical tradition that can be traced back to the thinking of some of the philosophers of ancient Greece and beyond. From a humanist perspective, two of the most important of these were Protagoras and Epicurus.

Famous present-day humanists include the ubiquitous Stephen Fry, the television scientist Brian Cox and authors Terry Pratchett and Philip Pullmann.



## Computing

In computing we will be learning to:

Explain how to record sounds and add in sound effects over the top.

Produce a simple radio play with some special effects and simple edits which demonstrate an understanding of how to use the software.

Create a document that includes correct date information and facts about the computers and how they made a difference.

Demonstrate a clear understanding of their device and how it affected modern computers, including well-researched information with an understanding of the reliability of their sources.

Describe all of the features that we'd expect a computer to have including RAM, ROM, hard drive and processor, but of a higher specification than currently available.

At the end of the topic I will know:

A sound effect (or audio effect) is an artificially created or enhanced sound, or sound process used to **emphasize artistic or other content of films, television shows, live performance, animation, video games, music, or other media.**

That sound effects can be made by using several different methods. In radio plays, the performers are masters of making sound effects from the simplest items such as a wooden board for thunder and lightning or coconuts for horse hooves.

Radio drama uses sound to convey ideas to the audience. ...

Actors can play more than one part from moment to moment as only voice needs to be altered.

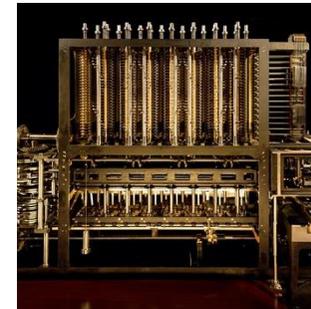
Actors use voice alone to convey character

There is no need for blocking or stage business in a radio drama.

Radio plays can be set almost anywhere.

Computer networks, including the internet can provide multiple services, such as the World Wide Web, and communication and collaboration

The first mechanical computer, The **Babbage Difference Engine**, was designed by Charles Babbage in 1822.



opportunities for

## PE

In PE (athletics) we will be learning to:

Develop the consistency of their actions in a number of events.

Increase the number of techniques they use.

Sustain pace over longer distances, e.g. sprint for seven seconds, run for one or two minutes.

Throw with greater control, accuracy and efficiency.

Perform a range of jumps showing power, control and consistency at both take off and landing.

Say why some athletic activities can improve strength, power or stamina and explain how these can help their performance in other types of activity.

Outdoor and adventurous activity during year 6 residential trip

Children will be taught how to use their bodies to:

- Sprint 75m within 20-16 develop to 15-12secs
- Jump for height 30-34cm
- Jump for distance 150-179cm
- Leap hurdles 60m within 25-18 secs develop to 17- 14secs
- Overarm throw 30-34m develop to 35+m
- Chest push 6-8m develop to 8+
- Run for longer distance 600m 5:00-3:31 develop to 3:30-2:31
- Participate in Sports day

At the end of the topic I will know:

That their skills can be developed through strength, control and technique in a variety of manners (jumping, throwing, running), including demonstrating a positive attitude on how to improve themselves and others.



