Grasmere Academy - Project Medium Term Planning

Term : Autumn (Precision - Science)	**Project Question: Which is the most important invention?**	**Year group: ARP**

Summary of the project: (mini outcomes identified)

Children to explore inventions through time and decide which they think is the most important invention. The science focus will be sound and electricity and inventions using these.

Mini Outcome 1 - Can we make sound anywhere? Class to explore the sound topic and investigate whether sounds can be made anywhere.

Mini Outcome 2 - What do we use to make electricity? Class to explore conductors and insulators as well as renewable forms of electricity.

Mini Outcome 3 - How do we use electricity and sound to help us in the world? Explore lighthouses and their importance.

Mini Outcome 4 - Which is the most important invention? Class to decide which invention they think was the most important. Class debate and double page spread showing their opinion. Newspaper article about the invention.

Overall Outcome - Make games using their knowledge of electrical circuits. Children to share with another class.

Literacy Genres

Conquering the monster story - The Three Billy Goats Gruff and alternative versions.

List Poems with school/ autumn/ halloween theme

Instructional Writing - How to make their electrical games

Newspapers - Read about all the amazing inventions

Incidental - The Lighthouse by The Literacy Shed

Maths Units

Place Value, Addition and Subtraction, Measures and Time

TRIO TIME
- Digit Value
- Odd/ Even
- Sequences
- Tens Frames

What do we want children to know by the end of this project?

Science - Electricity

The children are

- able to identify common appliances that run on electricity.
- able to construct a simple series circuit, identifying and naming its basic parts including cells, wires, bulbs, switches and buzzers
- able to identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
- able to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- able to recognise some common conductors and insulators, and associate metals with being good conductors

SOUND

- able to identify how sounds are made, associating some of them with something vibrating
- able to recognise that vibrations from sounds travel through a medium to the ear
- able to find patterns between the pitch of a sound and features of the object that produced it
- able to find patterns between the volume of a sound and the strength of the vibrations that produced it
- able to recognise that sounds get fainter as the distance from the sound sources increases.

Famous Scientist - Thomas Edison, Alexander Graham Bell, Tim Berners-Lee, Steve Jobs, Michael Faraday, Joseph Swan

Art

Children to be able to

- use a pencil to draw and design and record shapes
- make observational drawings using pencils of objects and faces
- explore different shapes with a pencil
- explore different textures with a pencil

Artist - Andy Warhol, Leonardo Da Vinci, Picasso

DT

Children to be able

- to make their game using appropriate techniques
- to measure, mark out, cut and shape a range of materials
- to use tools eg scissors and a hole punch safely.
- to assemble, join and combine materials (card, wire, paper fasteners) and components together using a variety of temporary methods
- to use simple finishing techniques to improve the appearance of their product - design and decorate
- to evaluate their game by discussing how well it works in relation to the purpose
- to evaluate their products as they are developed, identifying strengths and possible changes they might make
- to evaluate their product by asking questions about what they have made and how they have gone about it

Music

Children to be able to

- sing simple songs, chants and rhymes from memory.
- sing collectively and at the same pitch responding to simple visual prompts and counting in.
- sing simple songs with a very small range moving onto wider including pentatonic songs.
- sing a wide range of call and response songs.

Computing

Children to be able to

- understand that information comes from a variety of sources;
- understand that technology allows you to quickly access information from a range of sources.
- understand how digital technology is used at home and school.

French

Children to be able to

- ask and answer name
- ask and answer simple feelings
- count to 11
- know colours
- know the days of the week and months of the year
- to know how the French celebrate Christmas

RE

Children to know

- what Christians believe about God
- why gifts are given at Christmas
- how and why light is important to Christians, Hindu's and Jews
- why Jesus is special

PE

Children to be able to

- improve agility
- improve balance
- improve coordination
- use a range of PE equipment
- to mount and dismount equipment
- create a sequence of movements
- demonstrate sequence to class

- control vocal pitch and match to the pitch they hear. - sing familiar songs in low and high voices. - follow pictures and symbols to guide singing. -identify changes in **pitch/tempo** and respond to them with movement. - understand how music can tell a story. - understand musical structure by responding with movement. -compare high and low sounds in the local environment. - identify a steady beat - identify some instruments. - identify a repeated pattern. - listen to and learn about different music genres - hiphop, reggae, blues, pop	• explore a range of electronic information as part of a topic. • understand that anyone, from anywhere, can access the internet. • understand that personal information should not be shared online. • understand what to do when worried about something and to recognise specific places to get help - CEOP. • use everyday examples, describe what sequences are. • construct a sequence based on a familiar story. • code using sequences. • build a step-by-step sequence. • understand the importance of order when sequencing instructions. • understand that some stephs within a sequence can be reordered and still achieve the same outcome. • construct a flexible sequence and compare it with a partner's work. • identify which parts of the sequence are step-by-step and which parts are flexible. • code using different sequences to achieve the same outcome. • understand what a loop is. • identify where a loop can make an instruction more efficient. • understand why a loop is powerful. • code with loops. • describe what debugging is. • demonstrate the use of debugging in an everyday situation. • debug code. • understand that an event is an action that causes something to happen. • recognise that events give us options in coding - they cause things to happen only when the event occurs. • express an event in words and symbols. • code using events and action. • understand that we can make actions occur only under certain conditions. • use IF statements in everyday life and in coding. • code using IF statements. • write an algorithm to solve a problem. • design a simple program.			• give positive and constructive feedback • listen to feedback and make improvements

Which words and phrases do we want children to recall and define by the end of this project

Science	Art	Music	D&T	Computing	RE
appliances , mains electricity, battery, wires, crocodile clips, components, positive, negative, series, parallel, buzzer, circuit, power source, bulb, open, closed, conductor, insulator Sound, vibrations, medium, source, ears, pitch, sounds, high, low, pitched,	draw, shade, shape, texture, design, observation, observational, object, face, record	sing, chant, rhyme, rhymes, pentatonic, vocal, pitch, tempo, resond, call and response, steady beat, instruments, repeated pattern, high, low, genre, hiphop, reggae, blues, pop, respond,	Technique, join, measure, mark, tools, materials, assemble, combine, components, techniques, appearance, evaluate, strengths, improvements, product	navigate, websites, stored, data, icons, menus, hyperlinks, organise, digital, network algorithm, bug, coding, command, conditional statement, action, debugging, developer, event, loop, sequence	Christianity, believe, god, church, gifts, Christmas, hindu, Diwali, Jews, hanukkah, light, festival, Jesus, special

In order to ensure all children can achieve - what pre teaching/learning will need to occur? What prior knowledge will they need?

Science

Electricity Topic -
Children will know about similarities and differences in relation to places, objects, materials and living things. They are able to talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.
Ch know that sound and light sources sometimes need electricity to work

Sound Topic

Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Art

Children will know how to draw simple shapes and can make observational drawings. Children will be able to colour in and shade.

DT

Children will be able to use a range of different tools. They can assemble and combine materials. With support, children will be able to measure.

Music

Children will be able to read and sing simple songs, chants and rhymes. Children will be able to give an opinion.

Computing

Children will be able to use a range of iPad Apps. Children to be familiar with Pages, Clips, iMovie and Keynote. Children are able to use the internet to search for information.

French

Children are aware of nouns, adjectives, pronouns, conjunctions.

RE

Children know that light is important in religion.

PE

Children are able to use a range of PE equipment.

Which visits,visitors and special experiences will we organise to secure children's knowledge ?

Souter Lighthouse
Centre for Life in Newcastle

Seal and Marine Life Rescue service
Aquarium

Which books will help the children secure and think more deeply about the knowledge in this project?

Reading Spine

Autumn 1	Autumn 2
Little People, Big Dreams books Charging About - The story of electricity	Little People, Big Dreams books

Driving Texts

Fiction	Non Fiction	Poetry
Traditional Tales - Three Billy Goats Gruff Alternative versions	Little People, Big Dreams	List Poems We are going on a Pumpkin Hunt

How will we exhibit our learning? How will we present our learning from each subject?

FINAL OUTCOME
Children will use their knowledge of circuits to make simple games for another class to play. These games will then be displayed in Sanctuary and in the STEM fair. (Combination of Science/DT)

ART - Self Portraits
MUSIC - Song
Computing - E-safety Poster

Breakdown of weeks for Project sessions

Mini Outcome 1 - Can we make sound anywhere?

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Mini Outcome 2 - What do we use to make electricity? Class to explore conductors and insulators as well as renewable forms of electricity.

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Mini Outcome 3 - How do we use electricity and sound to help us in the world?

- explore lighthouses and their importance.
- explore the use of renewable energy

Mini Outcome 4 - Which is the most important invention? Class to decide which invention they think was the most important. Class debate and double page spread showing their opinion. Newspaper article about the invention.

- explore different scientists and inventors and their inventions
- decide which was the most important invention

Overall Outcome - Make games using their knowledge of electrical circuits. Children to share with another class.