BACK TO THE FUTURE

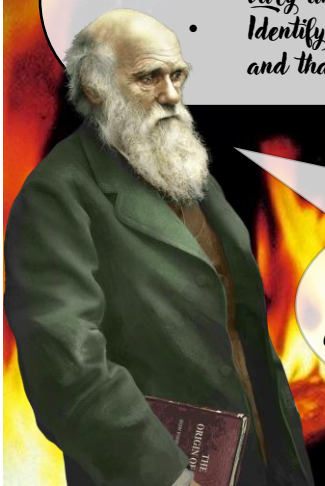
Science

What we should already know:

- Recognise that living things can be grouped in a variety of ways
- Explore and use classification keys to group, identify and name a variety of living things in their local and wider environment
- Recognise that environments can change and that this can sometimes pose dangers to living things
- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
- Describe the life process of reproduction in some plants and animals

As scientists we will:

- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
- Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution



Vocabulary:

antenna, inhabited, offspring, identical, adaptation, variation, environment, genes, DNA, evolution, inherit, Charles Darwin, artificial selection, natural selection, advantageous, extinction

Science

What we should already know:

- Identify common appliances that run on electricity
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
- 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
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- Recognise some common conductors and insulators, and associate metals with being good conductors

As scientists we will:

- Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a circuit
- Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and on/off position of switches
- Use recognised symbols when representing a simple circuit in a diagram

Vocabulary:

voltage, negative terminal, positive terminal, parallel circuit, resistance

Geography

What we should already know:

As geographers we should already be able to:

- Use an infant atlas to locate places.
- Draw a detailed map with symbols and a key.
- Use four figure grid references.

As geographers we will:

- Use maps, atlases, globes and digital/computer mapping.
- Use maps to explore how a location has changed over time.

Vocabulary

Scale, observe, political map, physical map, topographic map, urban, relief, eastings, northings.

Design Technology

What we should already know:

- How to design purposeful, functional, appealing products for themselves and other users based on design criteria
- How to generate, develop, model and communicate their ideas through talking, drawing, templates, mock ups and, where appropriate, information and communication technology.
- How to build structures, exploring how they can be made stronger, stiffer and more stable
- Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

As Design Technologists we will:

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer aided design
- Understand and use electrical systems in their products

Vocabulary:

Aesthetic, ergonomic, prototype, cross section, dismantle, linear, complex

History

What we should already know:

- Identify and whether a source is primary or secondary.
- Identify and understand facts and opinions within a written historical source.
- Understand that the past can be represented in different ways and different sources of information provide different viewpoints.

As historians we will:

- Evaluate the usefulness and accuracy of different sources of evidence.
- Suggest accurate and plausible reasons for how/why aspects of the past have been represented and interpreted in different ways.
- Select the most appropriate source of evidence for a particular task.

Vocabulary

Reliability, subjective, objective, bias, justification, the source omits to mention that... plausible, interpret, validity, concurrently.

Computing

What we should already know:

- Create and edit variables.
- Use a wider range of conditional statements to control the sprite.
- Design a simple game including sprites, backgrounds, scoring and/or timers.
- Detect and correct errors in algorithms as necessary.

As computer technologists:

- Design a game using conditional statements, loops, variables and broadcast messages.
- Evaluate the effectiveness of the game and debug as required.

Vocabulary

Broadcast messages, loops, effectiveness.

Application

We will use our scientific knowledge of electricity and circuits to design, create and test robotic Time Machines. We will conduct scientific investigations to test how different amounts of voltage affects their speed and movement.

WOW!

We will travel to London to watch a Back to the Future play at the famous Adelphi Theatre on the West End.

Be World-wise!

We will lean all about the different ancient civilisations of the past and how the human race has evolved!

Be Resilient!

We will persevere through tricky scientific investigations involving circuit making and light.

Be Creative!

We will design and create a robotic time-travel machine and use coding to enable it to move!