



Year 5 - Autumn - Design & Technology Knowledge Organiser

What I already know...

- How to research and design functional and purposeful products.
- How to cut accurately using tools such as scissors and saws
- How to make simple moving mechanisms using linkages and axels.
- That moving mechanisms use axles.
- That evaluations are important to help us to improve products and learn from mistakes.

What I will learn...

- Wealthy Victorians invented many different ways of entertaining themselves.
- The zoetrope was invented in 1834 by George Horner a British mathematician. It was originally called the 'Wheel of the Devil' and didn't become popular until the 1860s when an American developer William F.Lincoln named it the zoetrope which means 'wheel of life.'
- The invention of the zoetrope paved the way for cinema.
- A **zoetrope** is one of several pre-film animation devices that produce the illusion of motion by displaying a sequence of drawings or photographs showing progressive phases of that motion. A strip of sequenced pictures is put inside a cylinder and as it spins the viewer looks through slits in the cylinder and watches the pictures blur together to create an animation.
- Children will gain a deeper understanding of the research, design, make and evaluate process used in design technology.
- Children will advance their technical knowledge in D&T, by researching and using a range of mechanisms listed in the vocabulary list.
- That cross curricular links can be made between D&T, science, computing and maths!

Key Vocabulary

Animation:	The technique displaying successive drawings or models to create an illusion of movement when the film is shown as a sequence.
Axle:	A long straight piece of material which connects to a rotating component.
Axle Holder:	The part of the mechanism which holds the axle steady
Bulb:	A light bulb
Cam:	A rotating or sliding piece in a mechanism.
Circuit:	A collection of components which make an electrical system.
Linkage:	Lengths of materials joined together so that part of the mechanism can move.
Motor:	A device that turns electrical energy into motion
Pivot:	The central point on which a mechanism turns or swings.



Making a difference at The Merton

Children will have learnt in history about the great industrial changes and the inventions that were created in the Victorian period and, from this, will be inspired to make and produce their own product. Children will learn how Victorians entertained themselves in a world with no screen time as they discover about the predecessor of modern cinema the Zoetrope - a toy that produced moving animations. Children will also have the opportunity research, design, make and evaluate their Zoetropes as well as including other inventions this around this time period to their work (such as bulbs and motors). This will give opportunity to advance their technical skills in using electrical circuits in their design and technology work.

Making a difference at home

Can you create your own moving pictures in a flick book?

Have a go by using the corners of an old note pad or by sticking or stapling a few pieces of paper together. Start by drawing a sad emoji and slowly change its frowning mouth into smile over a few pages. Flick the pages quickly to watch it move.

