



D&T - Year 5/6 - Spring - Cycle A

Materials/Construction/Electronics

What do I already know?

Materials and construction

- how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.
- apply my understanding of how to strengthen, stiffen and reinforce more complex structures (joining, folding, layering/corrugated, shape and own ideas).
- how to consider how materials have both functional properties and aesthetic qualities, and choose the most appropriate material for the project.

Electronics

- how to add a simple electrical circuit in their product, add a switch, bulb.
- how to alter my product after checking if it works.

I will know how to design and make a moving carousel ride inspired by Thomas Bradshaw and John Spinello by:

Materials and construction

- ensuring that my product is strong and fit for the purpose (shape, bracing and own ideas).
- developing my skills in nailing, drilling and sawing to create a product.

Electronics.

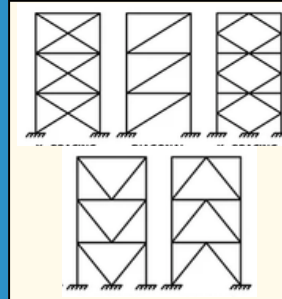
- use different types of circuits in my product.
- confidently using a number of components in a circuit including a switch, bulb, buzzer and motor.
- ensuring that materials chosen have both functional properties and aesthetic qualities.
- justifying why I have chosen a specific material.
- apply their understanding of computing to program, monitor and control a product.

Aesthetic



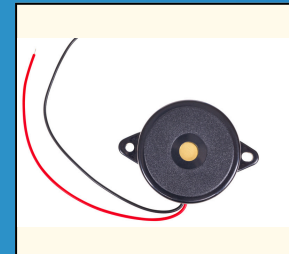
how the product looks, its pleasing qualities.

Bracing



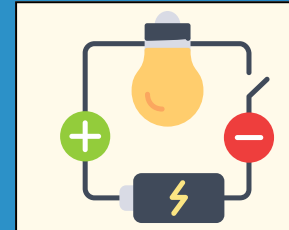
the use of various materials, techniques, and structures to provide additional support and stability to a building or structure.

Buzzer



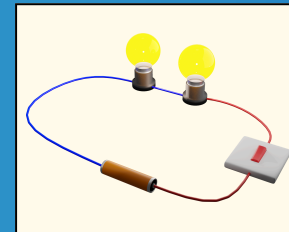
a device in a circuit that converts an electrical signal into sound.

Circuit



a complete circular path that electricity flows through.

Components



a basic part that uses electricity to perform a specific function.

Functional



the way something works or how useful it is.

Purpose



an intended result or use.

Suitability



right for the situation or purpose.



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John Spinello

John Spinello (born 1938) is an American game designer best known for inventing the classic board game Operation. While studying industrial design at the University of Illinois in 1964, he created an early version of the game as a class project. He later sold the idea to a toy company for \$500, not knowing it would become one of the most popular board games in history.



Thomas Bradshaw

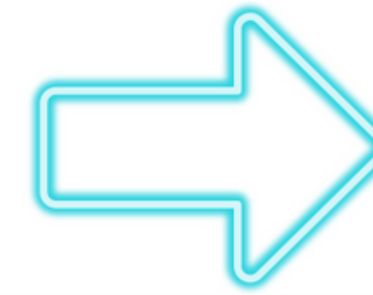
Thomas Bradshaw was an inventor from England who created the first steam-powered carousel at a fair in Aylsham in 1861. Before that, carousels were moved by people or animals, but Bradshaw's invention made them spin faster and more smoothly using steam engines. His idea inspired other inventors, like Frederick Savage, who improved and made carousels even more popular. Thanks to Bradshaw, carousels became a fun and magical ride that we still enjoy today!



Our brief:

Design and make a moving carousel ride (Linked to our Computing Curriculum – Scratch and Crumble) and include an electrical element to the design (lights, buzzer, switches etc).

Test it: Take to KS1 for their wet playtime. Can the children make the carousel move, light up and buzz?



- Research your artist/s
- Explore new skills
- Design
- Create
- Evaluate