Design Technology - Medium term plan

Year group : Year 5	**Topic : Moving toys** https://www.youtube.com/watch?v=UYtSpnO2juI	**Focus : Cam Mechanisms**

Design

- 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

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

Technical Knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures

Prior learning experiences From y4	Endpoints for y5
• **Design** – create a design using design criteria • **Make** – make packaging that is fit for purpose • **Evaluate –** use the design criteria to evaluate the product, identify areas for improvement and how to improve, both aesthetically and technically • **Evaluate –** identify key features of packaging for a range of products **Technical knowledge** – make structures suitable for the product, use ICT to aid design	• **Design** – create a design for a moving toy using design criteria • **Make** – make a moving toy using cam mechanisms • **Evaluate –** use the design criteria to evaluate the product, identify areas for improvement and how to improve, peer asses yours and others work • **Evaluate –** identify key features a range of moving mechanisms • **Technical knowledge** – a cam mechanism is made from 3 components, a cam, a slider, a follower
Sticky vocabulary Cam, slider, follower,	Links to other areas

Design	Make	Evaluate	Technical knowledge

Can start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces. Can begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Know how to use information sources, including ICT when developing design ideas.	Can select and use appropriate materials e.g. fabric, cardboard, straws, lollipop sticks and tools, e.g. scissors, rulers to measure accurately, according to their functional properties and aesthetic qualities Can select and use a wider range of techniques, e.g. cutting, shaping, joining and finishing Can begin to measure and mark out materials more accurately.	Can start to evaluate a product against the original design specification and by carrying out tests. Can evaluate their work both during and at the end of the process and consider the views of others to improve their work.	Can apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Investigating toys with moving cam mechanisms. Investigating different types of cam mechanisms, Investigating ways of strengthening structures for a moving toy. Designing and following a design to create a moving toy, with a cam mechanism. Evaluating their own moving toy.