

Summer Term	Lostwithiel Primary School	<u>Year 4/5</u>
Moving Cam toys - linked to Anglo-saxon crafts and wooden toys	DT Knowledge Organiser	Maple Class

Prior Learning:

- Children will have previously designed and made products such as moving pictures and cable cars that involved them selecting from and using a wide range of materials and components, including construction materials, according to characteristics. They will have generated, developed, modeled and communicated ideas, through talking and drawing and evaluated ideas against design criteria.

Key DT knowledge and skills:

Design

- Children will explore freestanding structures in everyday life and look at similarities (E.g. Having a wider base).
- Understand that Cams are rotating shapes that push on / rub against mechanical elements to create other motions. One rotating shaft can power many cams, and each can create a different motion in its associated mechanical element.
- A framework is essential for a freestanding structure and a triangle framework is strongest.
- Balance is essential for a structure to be strong and frames can also be strengthened by adding support to the corners.
- Children will practically explore making structures using construction kits, everyday materials and natural materials found in forest school.
- Children will test commercially bought Cam toys to investigate how components fit together and how you create different motions.
- Children will be given their design brief - to create a moving Cam toy using one or more Cams motions.

Make

- Children will accurately measure and cut materials to match their design.
- Make the frame.
- Choose a motion - The way you align the cams and cam followers will affect the motion of your animated elements. Simple movements are: Round and Round Up and Down + Round and Round Back and Forth.
- Make the mechanism, test and make the handle.
- Children will use a wide range of materials and components that are functional but also show that they have considered the aesthetic qualities.



Evaluate

- Children will test and evaluate each other's designs, scoring points for the design criteria and suggest an improvement for each other.

Key DT Vocabulary -		General Terms and Cross Curricular Vocabulary	
Frame	A rigid structure that surrounds or supports something	Criteria	A standard by which something is judged

Structure	A building or other object constructed from several parts	Improve	To make or become better
Stiffen/ Strengthen	To make stronger	Iterative Design	A cyclic process which which a product is tested and improved
Join	A place or line where two or more things are connected or fastened together	Prototype	A first version of a product from which others are created
Triangulation	Formation of triangles to create a strong structure	Reinforce	Strengthen or support with additional material
DT Outcome		Cross Curricular Links	
<ul style="list-style-type: none"> Design and make a simple moving toy using Cams. Children decide which motions are best for the specific concepts they want to represent. 		<ul style="list-style-type: none"> Science - Effects of different materials on friction on speed English - Children write a set of instructions on how to create a Cam toy 	
Linked documents: Class Overview , DT Whole School Progression document and Class Medium Term Planning .			