

Spring Term

Lostwithiel Primary School

Year 4/5

Catapult Lever Toys

DT Knowledge Organiser

Maple Class

Prior Learning:

- In year 2, children will have made moving pictures which involved an understanding of mechanisms, levers, sliders and wheels in their products. This was furthered with the production of cable cars in year 4 as children explored gears and pulleys. Children will have designed products using a basic design criteria and evaluated against this.

Key DT knowledge and skills:

Design

- The brilliance of the Roman army was the key to Rome's success in building its Empire.
- Training to become a legionnaire was difficult and involved learning how to use a sword, spear and fight mock battles with weapons which had covered tips for safety.
- Children will be given their design brief - to make a weapon for the Roman army that can launch objects from afar - and their design brief - to fire items from a distance, withstand a small load and transportable to go to different locations.
- Children will explore a range of existing weapons used by the Roman army and see which may suit the design brief - the catapult.
- Catapults use the scientific idea that when a force (push or a pull) is used an opposing force (push or a pull) is felt, e.g. springs, rubber bands, etc

Make

- Children will accurately measure and cut wood for their frame and firing arm and corners will be reinforced.
- Children will attach the support frame to the basic frame using a hot glue gun, ensuring the angles are correct.
- A dowel with a piece of straw will be attached to the support frame and the firing arm will be glued onto the straw to allow it to move freely.
- Elastic bands will be tied to pins underneath the firing arm to create the catapult mechanism.

Evaluate

- Children will test their catapults in forest school against the design criteria, seeing whose will fire the furthest

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	Reinforce	Strengthen or support with additional material
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		
DT Outcome		Cross Curricular Links	
<ul style="list-style-type: none"> • Children will make a working Roman catapult that fires a small stone 		<ul style="list-style-type: none"> • History - Children will study the Roman Empire and its impact on Britain 	

- **Science** - Pulleys, levers and gears

Linked documents: [Class Overview](#), [DT Whole School Progression document](#) and [Class Medium Term Planning](#).