



Design and Technology

Year 5

Term 2

Topic: Moving Toys

Focus Form: **Construction**/Food and Nutrition/Textiles

**Health and Safety Awareness:**

**National Curriculum Objectives:**

**Design:** use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose

generate, develop, model and communicate their ideas through discussion, annotated sketches,

**Make:** select from and use a wider range of tools and equipment to perform practical tasks

select from and use a wider range of materials and components, including construction materials, according to their functional properties

**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

**Technical Knowledge:** apply their understanding of how to strengthen, stiffen and reinforce more complex structures

understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

**Techniques:**

- Cutting
- Sawing
- Joining
- Cams
- Gears
- Pulleys
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**Context:**

- Home
- School
- leisure

**Prior Learning:**

Year 2 construction unit. This includes mechanisms.

**Vocabulary:**

Cams  
Pulley  
Gears  
Joins  
Follower  
Dowel

**Knowledge:**

Continue to build on their knowledge of mechanisms and how they can enable toys to move.

**Skills:**

Develop a simple design specification to guide their thinking  
Use annotated sketches, cross sectional drawings  
Explain their choice of materials and components according to functional properties and aesthetic qualities  
Accurately measure, mark out, cut and shape materials and components  
Accurately assemble, join and combine materials and components  
How mechanical systems such as cams or pulleys or gears create movement  
How to reinforce and strengthen a 3D framework

<p><b>Existing products/designers:</b></p> <p><a href="https://collections.vam.ac.uk/search/?limit=15&amp;narrow=1&amp;q=museum+of+childhood&amp;commit=Search&amp;collection%5B%5D=THES48593&amp;offset=0&amp;slug=0">https://collections.vam.ac.uk/search/?limit=15&amp;narrow=1&amp;q=museum+of+childhood&amp;commit=Search&amp;collection%5B%5D=THES48593&amp;offset=0&amp;slug=0</a></p> <p>Explore the V&amp;A Museum of Childhood collection to look at toys.</p>	<p><b>End Point:</b></p> <p>Create their own moving toy</p>
<p><b>Cross Curricular Links:</b></p> <p>Maths - measuring</p>	<p><b>Oracy:</b></p> <p>Talk about existing cams toys. Talk about the different types of cams</p>
<p><b>Wider Reading</b> <span style="float: right;"><b>Enrichment</b></span></p>	
<p>The Knowhere Emporium. The History of Toys- Deborah Jaffe</p>	<p>Play with a range of different toys to compare.</p>

Lesson	Focus	Key Question
1	Evaluate	What is a moving toy?
2	Skills based lesson	What is a cam mechanism?
3	Skills based lesson	How can we strengthen structures?
4	Design	How can I design a toy with a moving mechanism?
5	Make	How can I follow a design to make a moving toy?
6	Evaluate	How can I evaluate a finished moving toy?

