Design and Technology

Year 2 – Mechanisms – Storybook

Prior Learning

In Year 1, children will:

Design

- Explaining how to adapt mechanisms, using bridges or guides to control the movement.
- Designing a moving story book for a given audience.

Make

- Following a design to create moving models that use levers and sliders.

Evaluate

- Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.
- Reviewing the success of a product by testing it with its intended audience.

Technical Knowledge

- To know that a mechanism is the parts of an object that move together.
- To know that a slider mechanism moves an object from side to side.
- To know that a slider mechanism has a slider, slots , guides and an object.

Year 2

In Year 2, children will:

Design

- Creating a class design criteria for a moving monster.
- Designing a moving monster for a specific audience in accordance with a design criteria.

Make

- Making linkages using card for levers and split pins for pivots.
- Experimenting with linkages adjusting the widths, lengths and thicknesses of card used.
- Cutting and assembling components neatly.

Evaluate

- Evaluating own designs against design criteria.
- Using peer feedback to modify a final design.

Technical Knowledge

- To know that mechanisms are a collection of moving parts that work together as a machine to produce movement.

Future Learning

In Year 5, children will:

Design

- Designing a pop-up book which uses a mixture of structures and mechanisms.
- Naming each mechanism, input and output accurately.
- Storyboarding ideas for a book.

Make

- Following a design brief to make a pop up book, neatly and with focus on accuracy.
- Making mechanisms and/or structures using sliders, pivots and folds to produce movement.
- Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result.

Evaluate

- Evaluating the work of others and receiving feedback on own work.
- Suggesting points for improvement.

Technical Knowledge

- To know that mechanisms control movement.

- To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.	- To know that there is always an input and output in a mechanism. - To know that an input is the energy that is used to start something working. - To know that an output is the movement that happens as a result of the input. - To know that a lever is something that turns on a pivot. - To know that a linkage mechanism is made up of a series of levers.	- To understand that mechanisms can be used to change one kind of motion into another. - To understand how to use sliders, pivots and folds to create paper-based mechanisms.
	Vocab	
	Axle, design criteria, input, linkage, mechanical, output, pivot, wheel	

Pupils who are secure will be able to:

- Identify the correct terms for levers, linkages and pivots.
- Analyse popular toys with the correct terminology.
- Create functional linkages that produce the desired input and output motions.
- Design monsters suitable for children, which satisfy most of the design criteria.
- Evaluate their two designs against the design criteria, using this information and the feedback of their peers to choose their best design.
- Select and assemble materials to create their planned monster features.
- Assemble the monster to their linkages without affecting their functionality.

National Curriculum Subject Content

Design	Make	Evaluate	Technical Knowledge
- Design purposeful, functional, appealing products for themselves and other users based on design criteria. - Generate, develop, model and communicate their	- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].	- Explore and evaluate a range of existing products. - Evaluate their ideas and products against design criteria.	- Build structures, exploring how they can be made stronger, stiffer and more stable. - Explore and use mechanisms [for example,

ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.	- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.		levers, sliders, wheels and axles], in their products.