Shadsworth Junior School

Curriculum

Year 6 Scheme of Work Design Technology

Term: Autumn 2 | **Topic: Electrical Systems – Steady Hand Game**

Key Skills and Knowledge:

Key Skills

Developing, planning and communicating ideas

- Designing a steady hand game, identifying and naming the components required.
- Drawing a design from three different perspectives.
- Generating ideas through sketching and discussion.
- Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'.
- Gathering images and information about existing children's toys.

Working with tools, equipment, materials and components

- Modelling ideas through prototypes.
- Constructing a stable base for a game.
- Accurately cutting, folding and assembling a net.
- Decorating the base of the game to a high-quality finish.
- Making and testing a circuit.
- Incorporating a circuit into a base.

Evaluating processes and products

- Testing their own and others' finished games, identifying what went well and making suggestions for improvement.
- Analysing a selection of existing children's toys.

Key Knowledge

- To know that 'form' means the shape and appearance of an object.
- To know the difference between 'form' and 'function'.
- To understand that 'fit for purpose' means that a product works how it should and is easy to use.
- To know that 'form over purpose' means that a product looks good but does not work very well.
- To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind.
- To understand the diagram perspectives 'top view', 'side view' and 'back'.

Reading and Writing Opportunities (Long and Short Activities)
Creative Ideas and Hooks

Hooks

- Allow children time to explore a range of children's toys and evaluate each one. Which was your favourite? Why?
- Conduct market search around different electrical games that are currently on the market.

Books

- Make Games with Circuits- Chris Harbo

Research Opportunities

What different electrical games are currently on the market? What is the package of these games like?

Writing Opportunities

Progress report based on final product.

Links to PSHCE, Equality and British Values Work

British Values

Democracy

The children must take the views and opinions into account but still have the right to make their own choices.

The Rule of Law

- To understand the importance of safety rules when using tools.

Individual Liberty

- To understand that they are able to listen to others but can use their own ideas and design choices.
- To understand that many great design ideas originate from other cultures.

Mutual Respect

- To listen to and consider the ideas and opinions of others even if they differ from your own.
- To offer supportive comments in evaluations that will improve learning outcomes in a way that is objective but sensitive to the listener.

Previous Learning

- Do I know how to make an electrical circuit including a buzzer and a switch?
- Do I know how to design and make a net for a 3D shape?
- Do I know how to use pliers and other specialist tools safely?
- Do I know how to measure accurately?
- Do I know how to draw electrical circuits in my designs?

Key Vocabulary:

Assemble, battery, battery pack, benefit, bulb, bulb holder, buzzer, circuit, circuit symbol, component, conductor, copper, design, design criteria, evaluation, fine motor skills, fit for purpose, form, function, gross motor skills, insulator, LED, user

Resources Available / Visits/Visitors

Toys, crayons, scissors, rulers, glue sticks, black fine liner, bulb holder, battery pack, crocodile clips, buzzers/ bulbs, switch, wire cutters, pliers, scissors, modelling dough, tinned copper wire.

Useful Websites:

https://www.kapowprimary.com/subjects/design-technology/upper-key-stage-2/year-6/electrical-systems-steady-hand-game/