Design and Technology Year 2 Spring 1

Wheels and Axles – Moon Buggy

Prior Learning:

Reception Mechanisms: pop up/lift-the-flap book

- Look at a variety of books with pop-ups and flaps.
- Join different materials with glue/tape.
- Cut templates out.
- Fold and cut paper and card for a desired effect.

Y1 *Mechanisms: Sliders and levers a robot scene*

Final Outcome: **To make a moving moon buggy for Tim Peake to use on the moon.**

Key Vocabulary	Objectives *taken from Progression Document*	Key Knowledge
wheel **axle** **axle holder** **chassis** **body cab** **dowel** **investigate** **purpose** **rotate**	**Design** • Use pictures and words confidently to convey what they want to design/make • Propose more than two ideas for their product. • Use kits/reclaimed materials to develop more than two ideas • Model ideas with kits and reclaimed materials • Select appropriate technique explaining: First… Next… After that…Then… Last…Finally… • Explore ideas by rearranging materials, explaining why they have made their choices • Select pictures independently to help develop ideas	Children will know that a wheel is a circular object that revolves on an axle and is fixed below a vehicle or other object to enable it to move easily over the ground. They will know that an axle is a rod that enables a wheel to rotate. An axle holder is the component through which an axle fits and rotates.

	• Use drawings to record ideas with confidence as they are developed. • Add detailed notes to drawings to help explanations. • Describe their models and drawings of ideas and intentions. **Make** • Discuss their work as it progresses. • Select materials from a wider range that will meet the design criteria. • Select and name the tools needed to work the materials (saw, bench hook, templates, scissors, and spreader). • Explain what they are making. • Explain which materials they are using and why. • Name the tools they are using. • Describe what they need to do next and why. ***Mechanisms: Wheels and axles*** • Join appropriately for different materials and situations e.g. glue, glue gun, tape. • Try out different axle fixings and their strengths and weaknesses. • Make vehicles which contain free running wheels. • Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels. • Cut dowel using hacksaw and bench hook. • Attach wheels to a chassis using an axle. • Mark out materials to be cut using a template. • Fold, tear and cut paper and card. • Cut along lines, straight and curved. **Evaluate** • Explore existing products. Investigate how they have been made and why.	A chassis is the frame or base on which a vehicle is built.

	• Decide how existing products do/do not achieve their purpose and why. • Talk about their design as they develop and identify good and bad points, explaining how they could improve it. • Note changes made during the making process as annotation to plans/drawings. • Say what they like and do not like about items they have made and say why. • Discuss how closely their finished product meets their design criteria and how well it meets the needs of the user.	