Preston Primary School Knowledge Organiser

Topic: Design Technology—How does a toy vehicle move?	Term: Autumn 1	Year: Unit 3	Duration: 4 Weeks

Aim:

Design, make and evaluate a functional and mobile vehicle, using mechanisms such as axles and wheels.

Design Criteria:

The goals your product must achieve to be successful:

- Make a vehicle that is mobile and functional.
- Make a vehicle that has an axle and wheel mechanism.
- Attach the axle to the chassis securely.
- Make a vehicle that can move 30cm.
- Make your product appealing, using at least two different finishing techniques.

What I already know:

In previous years, the children have learnt:

- *What a structure is.*
- *How to design and build a 3D structure that is sturdy and able to hold weight.*
- *How design and make a shell structure.*
- *How to design and cook healthy snacks and meals.*
- *How to create using different textiles.*
- *About the design, make, evaluate process and put it into practice, thinking about how to make improvements to their work.*

Week one	
	Do I know this?
I understand what Design Technology is.	
I know the skills needed to be a designer, maker, and evaluator.	
I know what design, make, and evaluate means.	
I can find the chassis and axle on a toy vehicle and begin to describe how they function.	
I can deconstruct and reconstruct the chassis and axle on a model vehicle.	

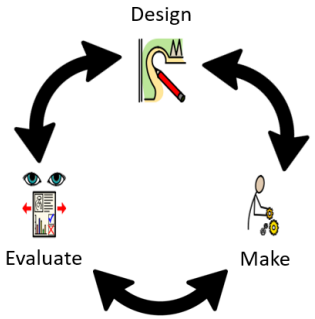
Week two	
	Do I know this?
I know what a launch mechanism is.	
I know how to use a balloon to create a launch mechanism and test that it works effectively.	
I know that appearance of a vehicle can affect its functionality and give examples of this, e.g. why is a race car shaped the way it is?	
I understand why vehicles are designed the way that they are.	

Week three	
	Do I know this?
I can decide on a type of toy vehicle to design and explain my choice, thinking carefully about the success criteria.	
I will design a vehicle that is functional and appealing.	
I will design and create a working model vehicle where the direction can be controlled.	
I can make my model using a variety of materials.	

Week four	
	Do I know this?
I can decorate my vehicle to ensure it meets its purpose and looks appealing.	
I can evaluate my vehicle to ensure it meets the design criteria and make changes if it does not.	
I can give constructive feedback to my peers on their vehicles.	

The Continuous Cycle of Design, Make and Evaluate in Design and Technology:

The children will be learning about the Design, Make and Evaluate continuous cycle of Design and Technology. This cycle demonstrates that when we are designing or making something, we must constantly evaluate and adapt our design to improve its success against the design criteria. Children will also evaluate their product after they have made it; they will evaluate what challenges they faced, what they would improve next time, and how they have met the design criteria. This encourages children to be reflective learners.



Our Key Vocabulary:

Word	Meaning
Design	Design is developing, planning and communicating your ideas about what you intend to make.
Make	To work with tools, equipment, materials, ingredients, and compo-
Evaluate	To reflect on ideas and products against the design criteria.
Design Criteria	The specific and concise requirements that a product must achieve
Mechanisms	The parts that make something work.
Axles	A rod or spindle that passes through the centre of a wheel or group of wheels.
Wheels	A circular object that revolves on an axle and is fixed below a vehi-
Vehicle	A vehicle is a way of transporting or carrying people or goods
Mobile	Able to move freely or easily.
Pivot	To turn on a central point.
Chassis	The frame or base on which a vehicle is built.
Appearance	The product looks nice. It is attractive or interesting to look at.
Functionality	The product fulfils its practical purpose. It works.