

Year 2 – Term 3

What can we learn from our mistakes?

DESIGN TECHNOLOGY



The Great Fire of London encouraged more organisation of fighting fires.

Design

Use historical knowledge as inspiration for a fire truck. Know who uses a fire truck and why.

Create simple design criteria for the fire truck, e.g. the axle must run freely in the holder, axles and wheels are aligned so the vehicle can travel in a straight line.

Share ideas by talking, writing and drawing.

Model ideas through drawing and mock-ups.

Make

Select appropriate tools, focusing on cutting and joining to allow movement. (Scissors, rulers, hacksaws, glue guns)

Select from a range of construction materials, (paper, card, plastic, wood) according to their characteristics.

Mark out, hold and join materials and components.

Use simple finishing techniques on the fire truck - printed images and/or text, paint, collage.

Evaluate

Explore and evaluate a range of products that use wheels and axles:

- How do the wheels move?
- How have they been fixed on?
- Why are the wheels this shape?
- Why does this product have this number of wheels?

Make judgements about the against design criteria

Technical knowledge

Know the difference between fixed and freely moving axles.

Know and use the correct vocabulary related to their product.

Long-term Memory Knowledge:

Know that people have been using wheels and axles for thousands of years.

Identify a consequence of the Great Fire of London as there being a more organised approach to fire fighting.

Know some of the ways fire engine design has changed.

Suggest what is essential for a fire engine to move successfully (e.g. free running axle).

Understand why a designer will draw and make models before making the final product.

Make choices about the most appropriate tools and materials to choose so that the finished product meets the design criteria.

Suggest how a fire truck should be decorated and why, e.g. bright colours to be seen.

Using an existing example, show how the wheels have been attached to allow movement, why they are the shape they are, why the vehicle has the number it does.

Explain the difference between fixed and freely moving axles.

Use the key vocabulary accurately.

Key Vocabulary

axle	a bar that goes through wheels, keeping them in place and allowing movement
chassis	the base of a wheeled vehicle
template	something that can be used as model for others to copy
assemble	make something by joining separate parts
joining	to put two objects together
vehicle	object used to transport people or things

Progression in Resources:

rulers to measure; wheels; wooden dowel for axles; glue guns; pegs and/or straws; hacksaws; vice; materials for decoration; cardboard boxes; card

Relevance

Now	Understand that making something is a process, not just the outcome; develop knowledge about how vehicles move.
Future	Have the confidence to adapt projects during the making process to achieve a more suitable outcome; have a greater understanding about how vehicles work.
Aspiration	Become a product designer; work in the motoring industry; enjoy hobbies such as soapbox racing.

National Curriculum Links:

Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].

Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

Explore and evaluate a range of existing products.

Evaluate their ideas and products against design criteria.

Explore and use mechanisms [for example wheels and axles], in their products.

Essential Prior Learning:

Use scissors to safely cut materials; be able to use a ruler to measure with some degree of accuracy.

Understand designing as the thinking about and recording of what you will make before you make it.

Know and describe basic properties of familiar materials, e.g. wood is stiff; paper can be folded; fabric is soft.

Have played with toy vehicles to have some understanding as to how they move and used construction kits to build moving vehicles.

Progression in Skill:

Theoretical Knowledge

Historians have found evidence of people using wheels and axles over 5000 years ago.