

Year group:
Year 2



Term: Spring

Construction
and mechanisms

National Curriculum: Design purposeful, functional, appealing products for themselves and other users based on design criteria. 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 the use of mechanisms (for example, levers, sliders, wheels or axles) in their products.

Key Knowledge and skills

Design products that have a clear purpose and an intended user.

Make products, refining the design as work progresses.

To take inspiration from design throughout history.

Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.

To create products using wheels and axles mechanisms correctly.

Deconstruct and evaluate a range of fire truck models, diagrams and images to identify the key features.

Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).

Evaluate their ideas against a design criteria that has been created as a class.

Vocabulary

Paper fastener	A fastener which is inserted into holes in the stack of paper, and the parts of the legs are separated and bent over to secure the paper.
Plier punch	A set of pliers used to punch one hole in a material.
Mechanism	Mechanisms are parts that make something work.
Material	A physical substance that things can be made from.
Skeleton	The framework of the product.
Axles	Axles are rods that help wheels to rotate, the wheel can either rotate freely on the axle, or be attached and turn with the axle.
Dowel	A thin rod of wood that is used to make axles.
Chassis	The chassis is the frame or base on which the vehicle is built. A chassis should be strong and rigid enough to hold the vehicle.
Design	Plan or drawing to show the look and function of an object.

Evaluate

What are the key features of a fire engine?

How does a wheel mechanism work?

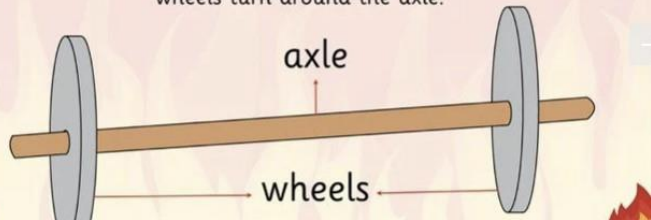
What materials could you use for the axles?

What materials can you use to strengthen the structure of your fire engine?

Materials



Vehicles all have **wheels** to make them move. The wheels are attached by **axles**. Axles can work in two ways: they are either attached firmly to the wheel so the axle rotates and the wheels turn with it, or the wheels are placed loosely on the axle so that the wheels turn around the axle.



Outcome

To design and make a model of a fire engine vehicle for children to present during their topic celebration.