



Design Brief

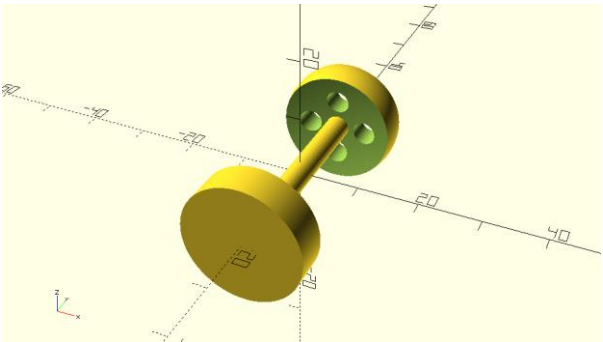
Design and make a moving fire engine which can travel to the fire.

Key Vocabulary

Hose-pipe	A hose is a long, flexible pipe made of rubber or plastic. Water is directed through a hose to e.g. put out fires, clean cars, or water the garden.
ladder	A piece of equipment consisting of a series of bars or steps between two upright lengths of wood, metal, or rope, used for climbing up or down something.
equipment	The items needed to serve a particular purpose/job.
wheel and axle	The wheel and axle is a simple machine consisting of a wheel attached to a smaller axle so that these two parts rotate together.
texture	The feel, appearance, or consistency of a surface or substance.

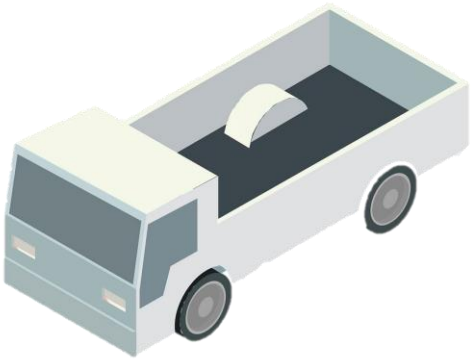
Key Skills

- Materials can be joined in different ways for example using glue, tape. Different joins are used for different effects and reasons.
- Some simple mechanical systems can be moved with levers, sliders, wheels and axles.
- How to make a moving mechanism using a wheel and axle, to transport the vehicle. The axle will turn to allow the vehicle to move.
- Use the correct methods to join the material together. Use materials such as dowels, wheels and string.
- Decorate the vehicle using different materials e.g. paint, paper, tissue paper, cellophane etc.



What I Should Already Know

- Materials can be joined in different ways using glue, split pin, tape etc.
- Levers and sliders can be used to create movement in a product.
- Ideas are needed to create a design.
- How to use and carry scissors safely.
- To cut around a template with increased accuracy.
- To fold and join different materials.



Year 2- Structures and Mechanisms

How can I plan and design an effective vehicle?

Design and Technology

Key Information

- A vehicle is a machine that transports people or cargo. Vehicles include bicycles, motor vehicles (motorcycles, cars, trucks, buses and many more).
- A fire engine is a vehicle that is designed to help in fighting fires by taking firefighters to the scene and giving them access to the fire, water or other equipment.
- A fire engine carries hoses, a pump, a water tank and breathing equipment. It will also have rescue equipment, such as ladders, ropes and cutting tools, and usually first aid kits as well. A fire engine brings firefighters to the scene from the fire station. It will also have sirens and flashing lights to warn traffic along the way.

Links to other Learning

- Maths - measures
- Science- forces
- Art and Design
- History - The Great Fire of London
- D & T - structures and mechanisms all year groups

Key Questions

- Appearance/aesthetics - how will it look and why? What are some of the key features of your vehicle?
- Cost - how much money will it cost?
- Customer - who is it for?
- Environment - can it be recycled?
- Size - how big or small is it?
- Safety - is it safe to use by everyone?
- Function/purpose - how does it work? How do your wheels move/work?
- Materials - what materials will you use?
- Manufacture - how did you plan your design before making it? How will you make it? Do you like what you have made? Why or why not?

