Heene Church of England (Aided) Primary School
'Learning together, loving others, guided by God'

Subject: Design and Technology **Topic:** Moving Vehicles (wheels and axles) **Year Group:** 2

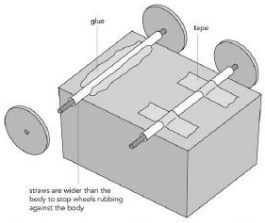
Prior Learning: In Reception I assembled vehicles with moving wheels using construction kits. I explored moving vehicles through play.

In Year 1 I made a Christmas card with a moving picture. I investigated levers and sliders. I gained some experience of designing, making and evaluating products for a specified user and purpose. I developed some cutting, joining and finishing skills with card.

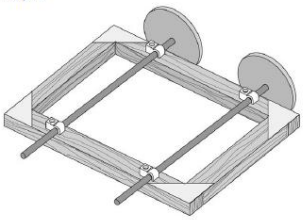
Vocabulary:

Wheel- Circular objects that roll on the ground, helping vehicles and other objects to move easily.
Axle - A rod that enables a wheel to rotate.
Fixed axle – The axle is fixed to the chassis and the wheels are free to turn on the axle.
Free axle- The wheels are fixed to the axle and the axle turns in a bigger tube called the bearing.
Bearing- The hollow tube that the axle goes through. The bearing must be bigger than the axle so the axle can turn easily.
Chassis – The frame or the base on which a vehicle is built. It should be strong and rigid enough to hold the vehicle.
Dowel – A wooden rod used for making the axles.
Mechanism – A part of a machine that has a particular function

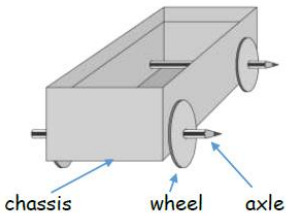
Free axle—The picture shows you two ways to fix the bearings onto the body.



Fixed axle—The next picture shows you the other way to let the wheels turn. This time the axle remains fixed and the wheels turn on the axle. The axle is fastened to a wooden body with cable clips.



Understanding Wheels and Axles YouTube Video



Design Brief: To make a moving vehicle to be used by a younger child.

Functional Considerations: The vehicle must move using wheels and axles.

Aesthetic Considerations: The vehicle must look appealing to its intended recipient.

Design:
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

Make:
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

Evaluate:
explore and evaluate a range of existing products
evaluate their ideas and products against design criteria

Technical knowledge: build structures, exploring how they can be made stronger, stiffer and more stable
explore and use mechanisms [for example, levers, sliders, **wheels and axles],** in their products

What I will know by the end of the unit: Explore vehicles with moving parts. Explore wheels, axles and bearings and how they can make a vehicle move. Make a vehicle move using wheels and either a fixed axle or free axle. Further develop cutting, shaping and joining skills using scissors, glue and masking tape.