

KS2 – Designing and Making Vehicles

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20 April 2018
Draft

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Overview

In this document

This unit of work follows on from children may have learned about wheels and axles in Key Stage 1

The project involves children in exploring the practical requirements of vehicles, identifying why particular vehicles are designed and constructed in the way that they are.

This leads into children identifying a vehicle which may have to fulfil a particular task that they have identified.

Vehicles

- Children should identify the distinguishing features of their vehicles and design the vehicle to match the requirements.
- A range of contexts can be used for this activity.
- We must remember that the vehicle (product) should have a user and a purpose

For example:

- Design make an evaluate a space buggy to assist an astronaut in moving moon rock samples across the moon to a spaceship

Vehicles

- A focal point of the activity is to extend children's knowledge and capability to use mechanisms.
- Children can be taught a straightforward method to build a very basic chassis, wheel and axle assembly. The method described is able to be adapted and applied to any scenario.
- By working through the basic construction as a focussed practical task, children will extend and consolidate their understanding of the fundamental principles associated with wheel and axle mechanisms.



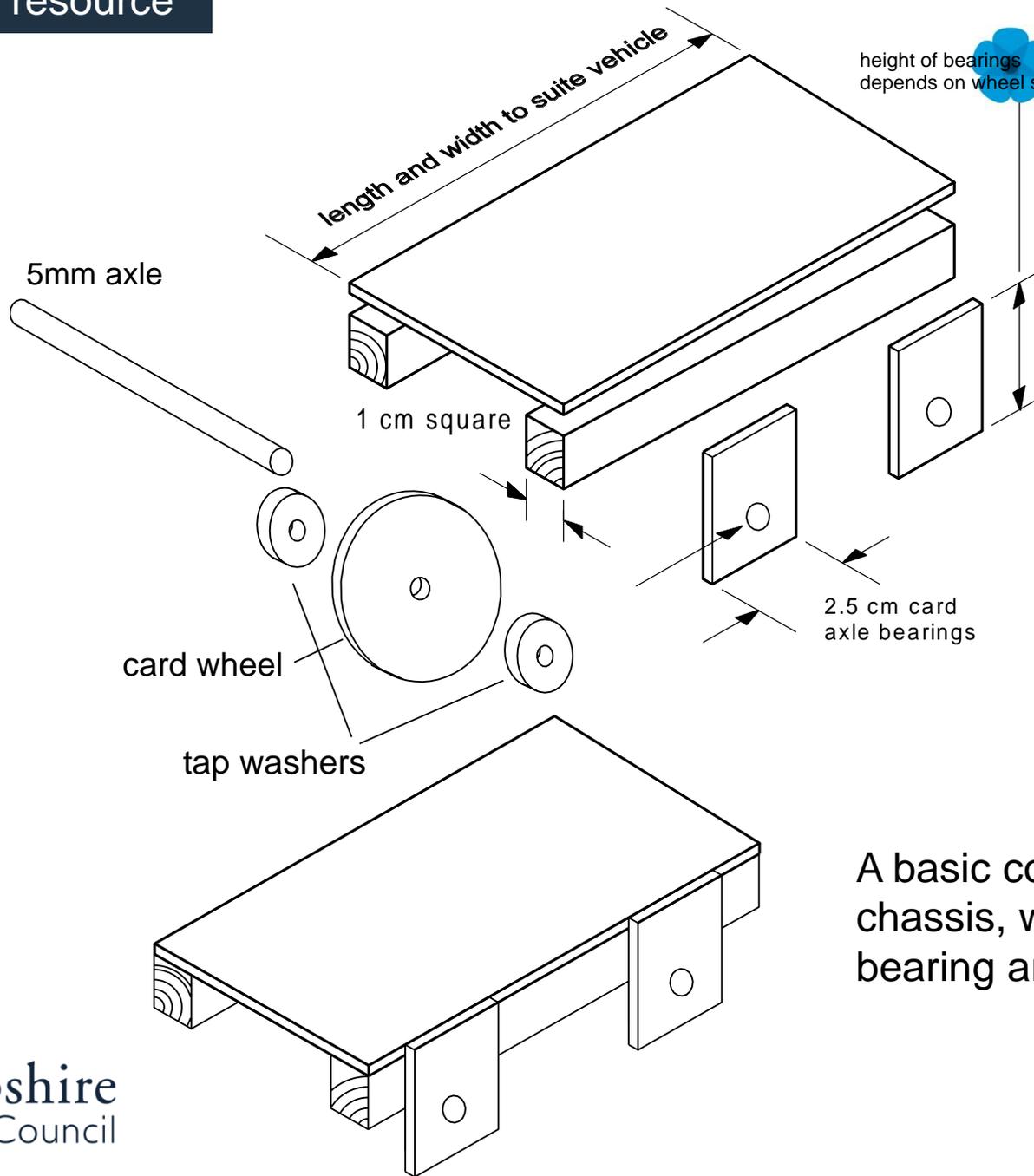
By exploring a range of vehicles, children will be able to match the shape and features of particular vehicles with the jobs it is designed to do.



Particular attention should be given to details such as the wheel and axle arrangements, which children will have to make provision for in their designing and making.



Books and other sources of diagrams and pictures can be used to show examples of vehicles which may be linked by a historical theme. The shape of the vehicles and the uses that they are put to should be discussed.



A basic construction for a chassis, wheel, axle and bearing arrangement.



The width and length of the chassis is identified, based on the particular type of vehicle to be designed and made.

Strong card such as 'greyboard' is measured and cut to size. The card is used as a template to measure 1cm strips to stiffen the edges of the card.



Clothes pegs are used to clamp the card to the wood whilst the PVA glue dries.

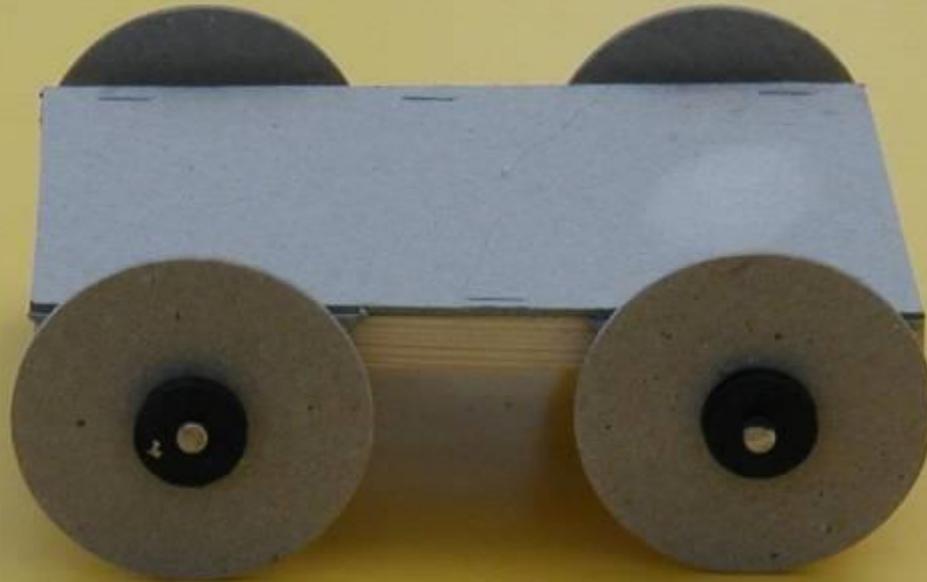


Axle holders (bearings) are positioned and glued in place.

Home-made bearings can be made or commercially bought ones can be used.

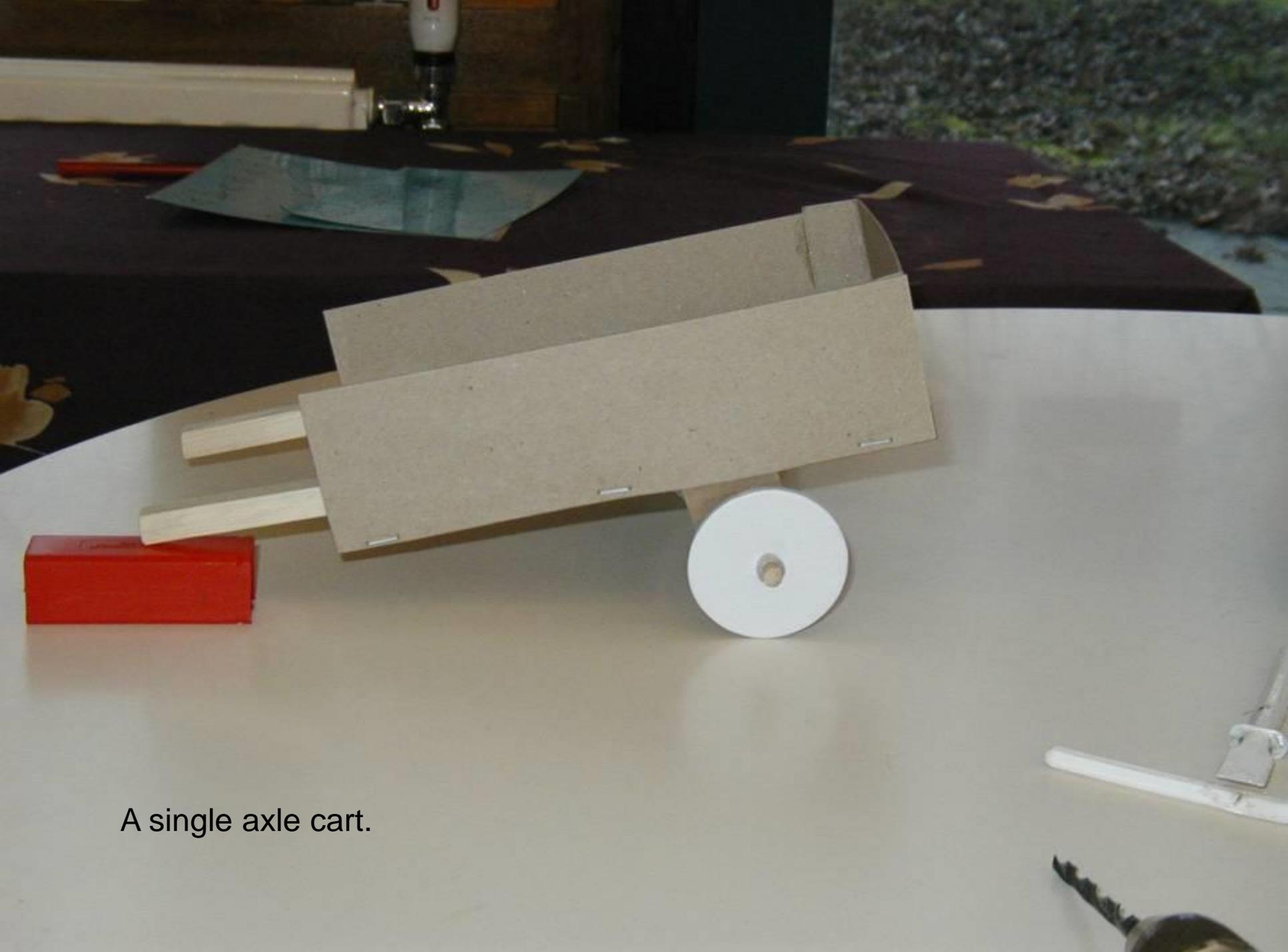


A basic chassis is assembled and ready for the wheels and axles to be added.

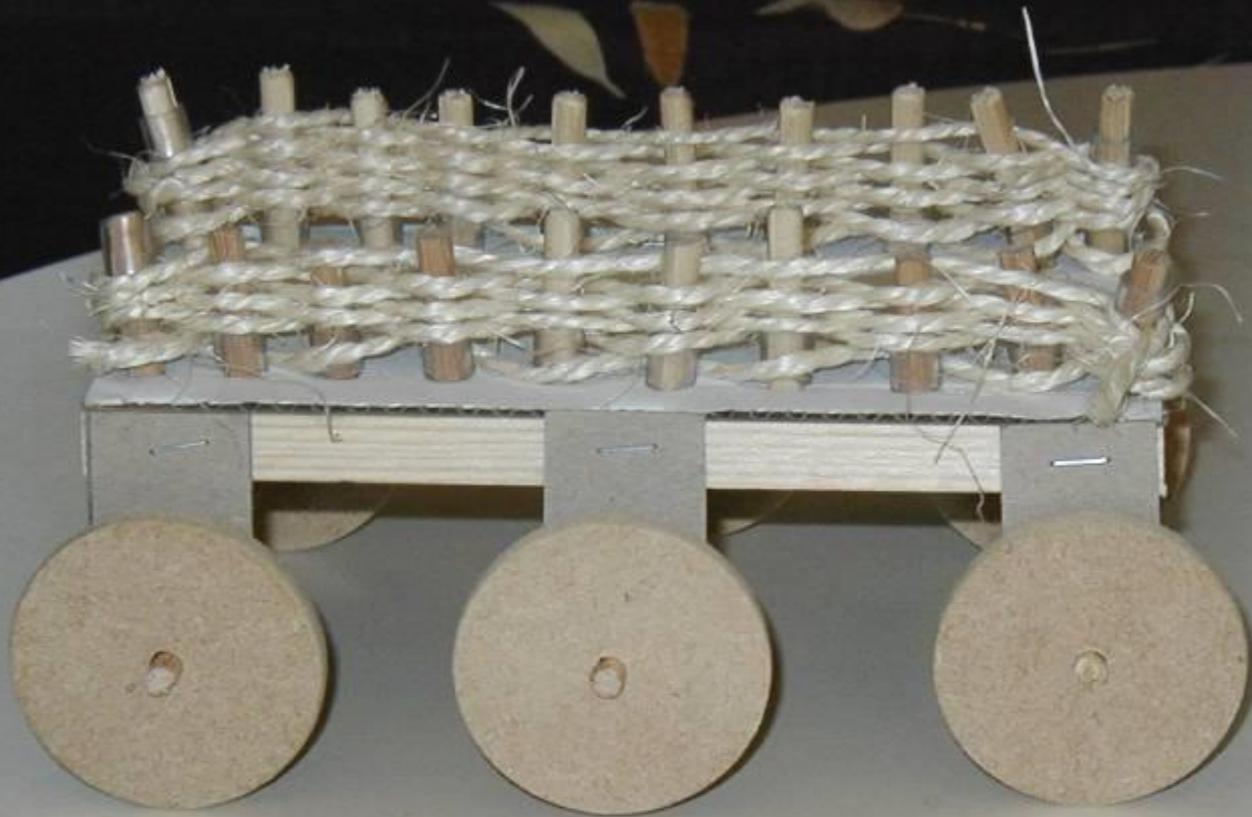


A range of card wheels are available from suppliers.

Children can now begin to adapt the basic chassis, and design and make their particular vehicle.



A single axle cart.



Multi axled wagon with wicker sides!



A trailer, to carry a specific cargo, designed and made to be towed by a truck

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