



Design Technology

Mechanisms

Wheels and Axles

Y2

In this unit, we will design, make and evaluate a box car. We will investigate and evaluate a range of toy cars with different axles, engage in focused practical tasks using construction kits with wheels and axles which will inform our designing and making. We will test and evaluate our box cars, thinking about how they could be improved.

Mechanisms Knowledge:

I will:

- Explore and use wheels, axles and axle holders.
- Distinguish between fixed and freely moving axles
- Know and use technical vocabulary relevant to the project

Skills

I will be able to:

Design:

- 2.1 Use drawings to record ideas as they are developed.
- 2.3 Use kits/reclaimed materials to develop more than one idea
- 2.4 Describe my models and drawings of ideas

Make:

- 2.6 Select materials from a limited range that will meet the design criteria.
- 2.8 Select and name the tools needed for making.
- 2.9 Use suitable finishing techniques

Evaluate:

- 2.11 Explore existing products and investigate how they have been made.
- 2.13 Talk about my design and what I am making.
- 2.15 Suggest how my finished product could be improved.

Vocabulary

Technical vocabulary

vehicle, wheel, axle, axle holder, chassis, body, cab, fixed, free-moving, mechanism,

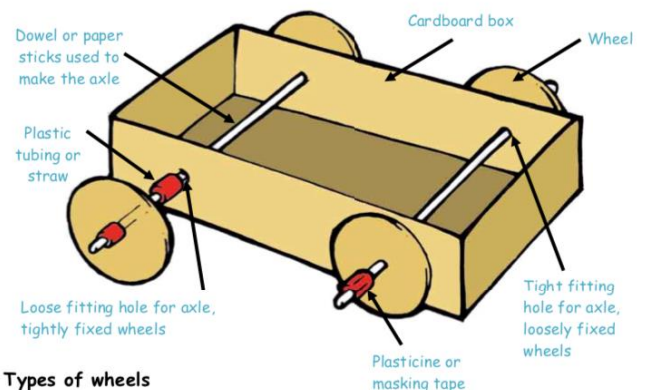
Process vocabulary

Assembling, cutting, joining, shaping, finishing, design, make, evaluate, purpose, user, criteria, functional

Names of tools, equipment and materials used

Techniques:

Example of two different ways to fix wheels



Types of wheels



Ways to hold free moving axles

Use pairs of clothes pegs glued with PVA to the underside of a box. Check the peg holes are large enough to allow axles to move freely. Make sure they are aligned carefully so the vehicle moves in a straight line when the wheel and axle mechanism is added.



Use card triangles with holes for the axle. Check the holes are large enough to allow the axle to move freely. Make sure opposite triangles are aligned carefully so the vehicle moves in a straight line when the wheel and axle mechanism is added.



Use large paper/plastic straws fixed with masking tape to the underside of a box. Check straws are positioned carefully so the vehicle will move in a straight line when the wheel and axle mechanisms are added. Make sure the straw hole is large enough to allow the axle to move freely. The wheels must be fixed tightly to the axle.



Inspiring Individuals



Karl Benz