



Design Technology- Mechanisms: wheels and axles

This topic focuses upon the design and construction of a practical object that includes wheels and axles. Children are to design, make and evaluate a wheel barrow for carrying vegetables.

Key Skills

Designing

- Generate initial ideas and simple design criteria through talking and using own experiences.
- Develop and communicate ideas through drawings and mock-ups.

Making

- Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.
- Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.

Evaluating

- Explore and evaluate a range of products with wheels and axles.
- Evaluate their ideas throughout and their products against original criteria.

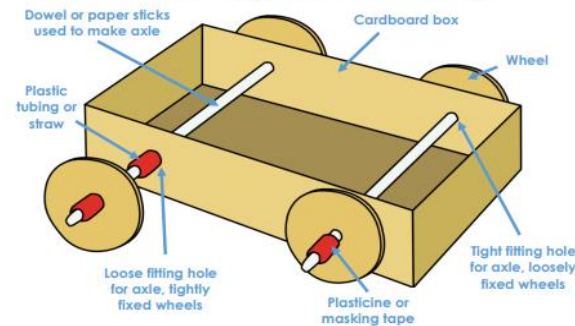
Technical knowledge and understanding

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

Types of wheels



Two different ways to fix wheels



Key reading

<https://fixthisbuildthat.com/diy-rustic-wheelbarrow-plans/>

<https://makezine.com/article/craft/paper-crafts/5-minute-cardboard-wheelbarrow/>

Prior knowledge:

- Assembled vehicles with moving wheels using construction kits.
- Explored moving vehicles through play.
- Gained some experience of designing, making and evaluating products for a specified user and purpose.
- Developed some cutting, joining and finishing skills with card.

Sticky knowledge:

Know that an axle is a rod on which one or more wheels can rotate, either freely or be fixed to and turn with the axle.

Know that an axle holder is the component through which an axle fits and rotates.

Know that a chassis is the frame or base on which a vehicle is built.

Know that friction is resistance which is encountered when two things rub together.

Know that a dowel is a wooden rod used for making an axle to hold a wheel.

Key words:

Vehicle- a thing used for moving people or goods.

Wheel- a circular frame that turns.

Axle- the rod that helps a wheel turn.

Assemble- to build or put together.

Design- a plan, drawing or sketch used to make something.

