

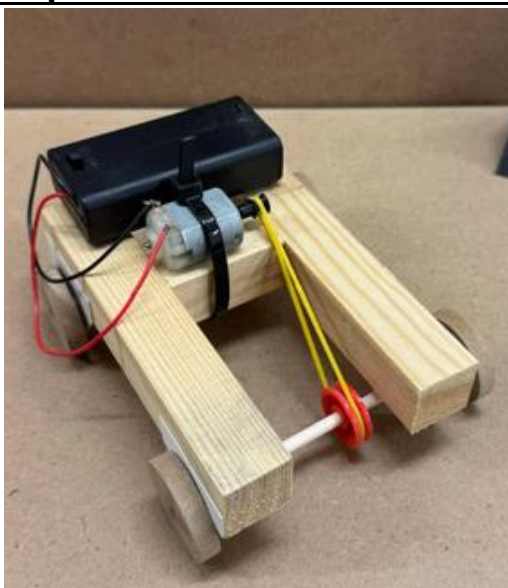


Lowerhouse Junior School

Design & Technology Overview Sheet



Year 6 – Pulleys – create a vehicle capable of moving over different terrain which incorporates more than one mechanical system.



Key Learning: Pupils who are secure will be able to:

Year 6 Pulleys & electrical system

- **Develop a technical vocabulary appropriate to the project.**
- **Use mechanical systems such as cams, pulleys and gears.**
- **Use electrical systems such as motors.**

Design

- List tools needed before starting the activity.
- Plan the sequence of work e.g. using an exploded diagrams to communicate ideas.
- Record ideas using annotated diagrams.
- Use models, kits and drawings to help formulate design ideas.
- Devise step by step plans which can be read / followed by someone else.
- Sketch and model alternative ideas.
- Decide which design idea to develop.

Make

- Make prototypes. (using lego)
- Develop one idea in depth.
- Use researched information to inform decisions.
- Produce detailed lists of ingredients / components / materials and tools.
- Use a computer to model ideas.
- Select from and use a wide range of tools.
- Cut accurately and safely to a marked line.
- Select from and use a wide range of materials.
- Use appropriate finishing techniques for the project.
- Refine their product – review and rework/improve.

Evaluate

- Research and evaluate existing products (including book and web based research).
- Consider user and purpose.
- Identify the strengths and weaknesses of their design ideas.

- Give a report using correct technical vocabulary.
- Consider and explain how the finished product could be improved related to design criteria.
- Discuss how well the finished product meets the design criteria of the user. Test on the user!
- Understand how key people have influenced design.

Learning Intentions

Lesson 1: To understand the contributions of key inventors who created the first car and early electric vehicles.

Lesson 2: To research and understand how wheels, axles, pulleys, and motors help vehicles move.

Lesson 3 –To design a motorised vehicle with a pulley system, using exploded diagrams or concept maps.

Lesson 4 – To build a strong chassis and begin attaching wheels, axles, and pulley system.

Lesson 5 –To integrate an electrical motor and complete the pulley system for my vehicle.

Lesson 6 –To test and evaluate vehicles on different terrain.

Overview:

Lesson 1: Understand people of key influence.

Lesson 2: Research and understand how wheels, axles, pulleys, and motors help vehicles move.

Lesson 3: Plan my final product.

Lesson 4: Make your cushion.

Lesson 5: Make your cushion.

Lesson 6: Evaluate your final cushion.

Cross Curricular Links

Links to geography unit and science

Resources

Wooden wheels (2 different sizes) , doweling , rubber band, battery, battery holder, wires, motor, glue gun

Key Vocabulary

innovation, invention, axle, chassis, motor, pulley, belt, gear, rotation, motion, friction, Motor, battery pack, switch, circuit, tension