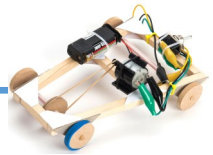
The Acorn Partnership
Marston Montgomery Primary School
Long Lane C of E Primary School

Mechanisms — Year 6 — Summer

Electrical Systems



Prior Learning

- I have explored movement through different mechanisms including cams, axels, pneumatics, sliders and levers.
- I have learnt some cutting and joining techniques with a range of materials including card, plastic and wood.
- I have learned some ways to stiffen and reinforce structures.
- I understand the components needed to make a working series circuit.

Sticky Knowledge

- Understand and use electrical systems in their products.
- Apply their understanding of computing to program, monitor and control their products.
- Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.
- Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.
- Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.
- Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.
- Continually evaluate and modify the working features of the product to match the initial design specification.
- Test the system to demonstrate its effectiveness for the intended user and purpose.
- Investigate famous inventors who developed ground-breaking electrical systems and components.

Vocabulary	Definition
Buggy	A small vehicle model, often powered, used for testing how a design moves.
Design criteria	A clear list of what a product must have or do to be success-ful.
Design specification	A detailed description of exactly what a product must include, how it should work, and any limits (e.g. size, materials, cost).
Function	The purpose or job something is meant to do.
Functional	Working well and doing its job properly.
Gear	A wheel with teeth that helps machines move and change speed or direction.
Input	Data or instructions given to a system (e.g. pressing a button or typing).
Output	What a system produces after receiving input (e.g. light, sound, or movement).
Process	The steps a system takes to change input into output.
Prototype	An early version of a product made to test ideas and improve the design.
Pulley	A wheel with a rope or string that helps lift or move objects more easily.
Rotation	Turning around a centre point, like a wheel spinning.

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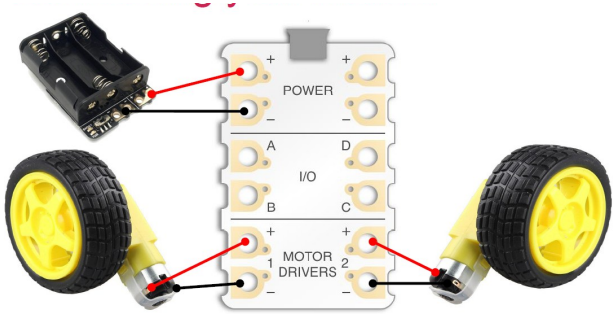
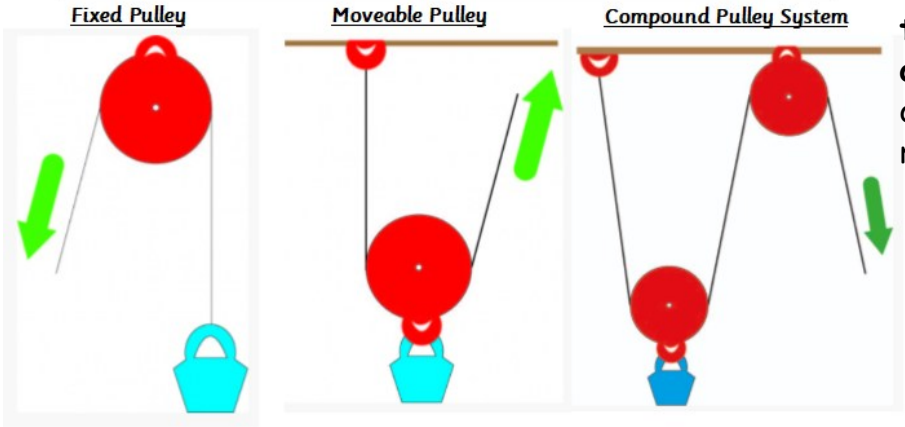
How will we program our buggy to create movement?

Connecting Motors

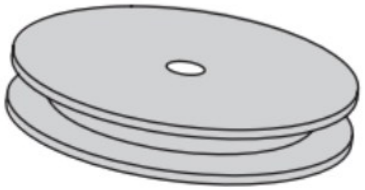


Programming a 'Crumble'

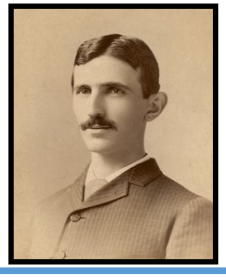
How do Pulley Systems Work?



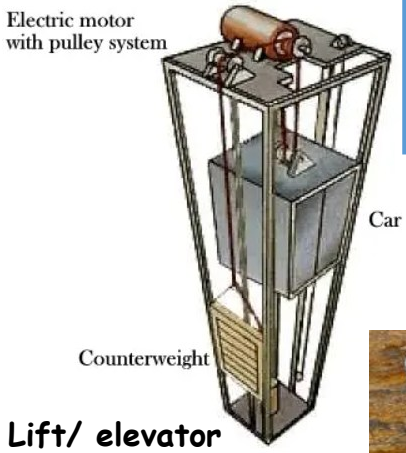
A pulley is **a simple machine that makes it easier to lift or move a heavy object**. It includes at least one wheel and a length of rope.



Nikola Tesla was a brilliant scientist and inventor. His work with electricity led to many advances in communication and technology. He is best known for **creating the Alternating Current electric system**, which is still used today as the world's primary electrical system.



Electrical Pulley Systems



Lift/ elevator

Crane