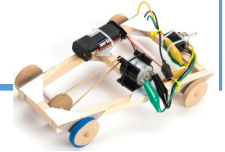


# Mechanisms – Year 5 – Summer

## 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.

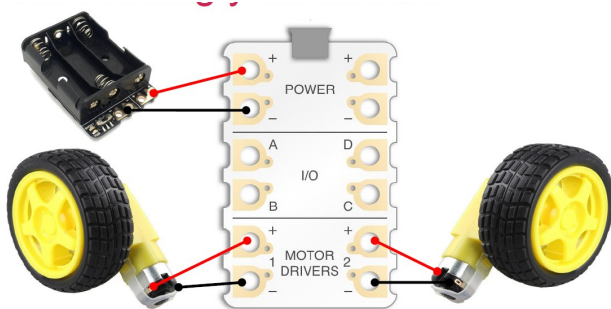
Vocabulary	Definition
<b>Buggy</b>	A small vehicle model, often powered, used for testing how a design moves.
<b>Design criteria</b>	A clear list of what a product must have or do to be successful.
<b>Function</b>	The purpose or job something is meant to do.
<b>Functional</b>	Working well and doing its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

# Mechanisms – Year 5 – Summer

## Electrical Systems

How will we program our buggy to create movement?

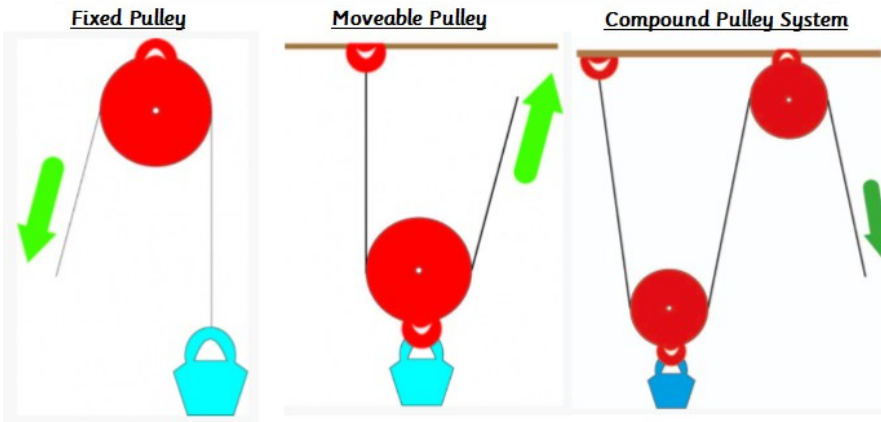
### Connecting Motors



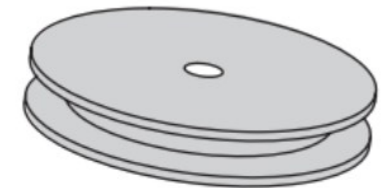
### Programming a 'Crumble'



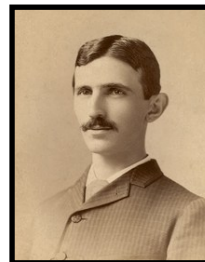
### How do Pulley Systems Work?



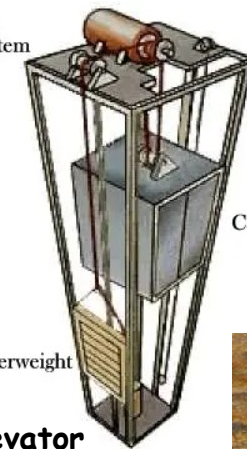
A pulley is a simple machine that makes it easier to lift or move a heavy object. It includes at least one wheel and a length of rope.



**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.



Electric motor with pulley system



### Electrical Pulley Systems

Crane

