Mechanisms

Success Criteria

- I can explain how different mechanisms work.
- I can investigate a simple mechanism.
- I can design my own mechanism for a given purpose.

Key Vocabulary

Mechanism

Lever

Gear

Cog

Pulley

Machine

Force

What Are Mechanisms?

A **mechanism** is a device that changes an **input force** or **motion** into a different output force or motion. Some mechanisms make work **easier** to do by allowing a **smaller force** to have a **greater effect**.

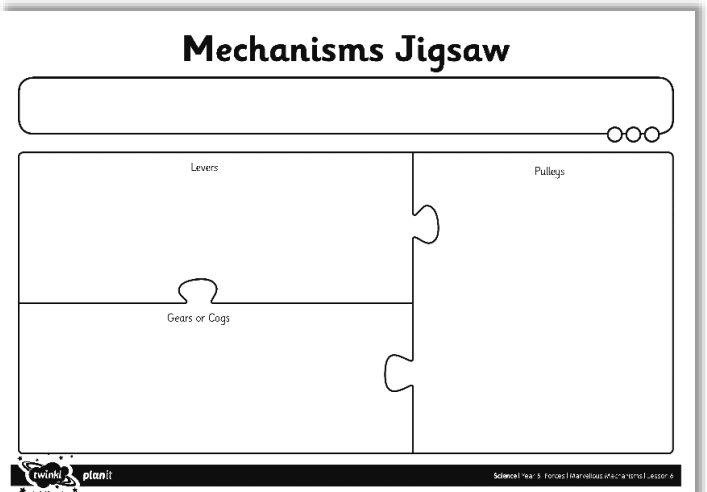
There are different types of mechanism.

Let’s find out more about some of the different types.

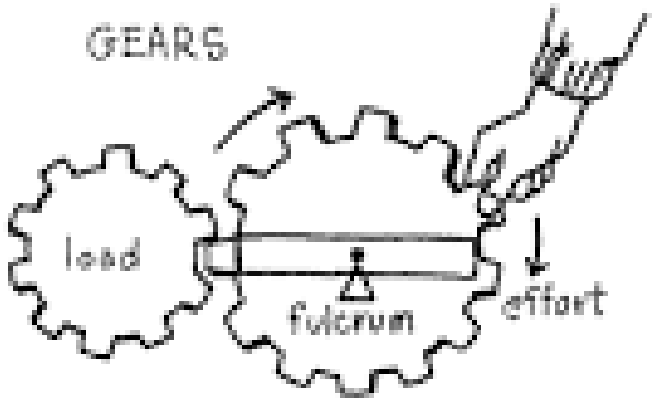
What Are Mechanisms?

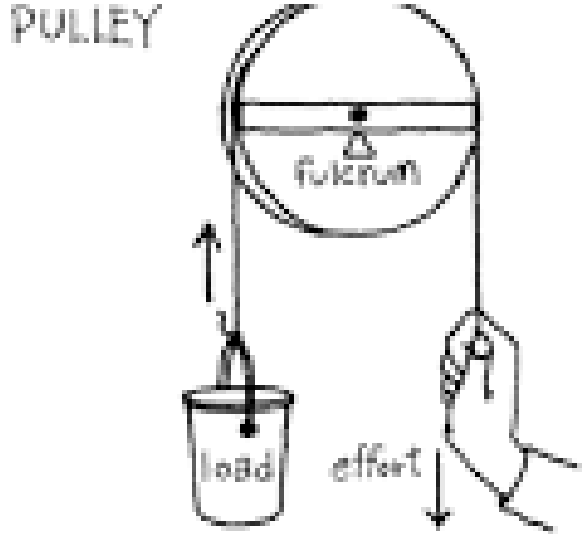
Use the Mechanism Fact sheets to help you piece together information about Pulleys, Gears and Levers.

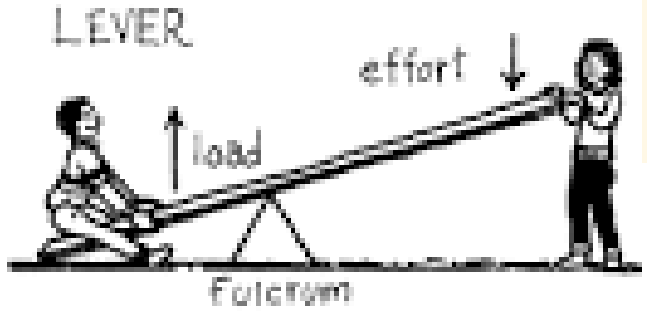
Share what you have found out and complete your Mechanisms Jigsaw (optional).



Levers, pulleys gears





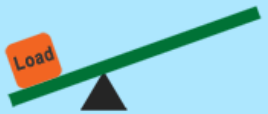


Simple Machines

Simple machines have few working parts.
They make our work easier and help us move things.
These are a few simple machines.

Pulley

Lever



Gears

What Are Mechanisms?

Mechanisms are all around us.

Can you identify whether these objects use **levers**, **pulleys** or **gears**?

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Cracking Contraptions

Some designers and cartoonists have fun drawing and **creating crazy machines** that use lots of **mechanisms** to achieve a simple task.

This is an invention drawn by Rube Goldberg, a famous cartoonist.

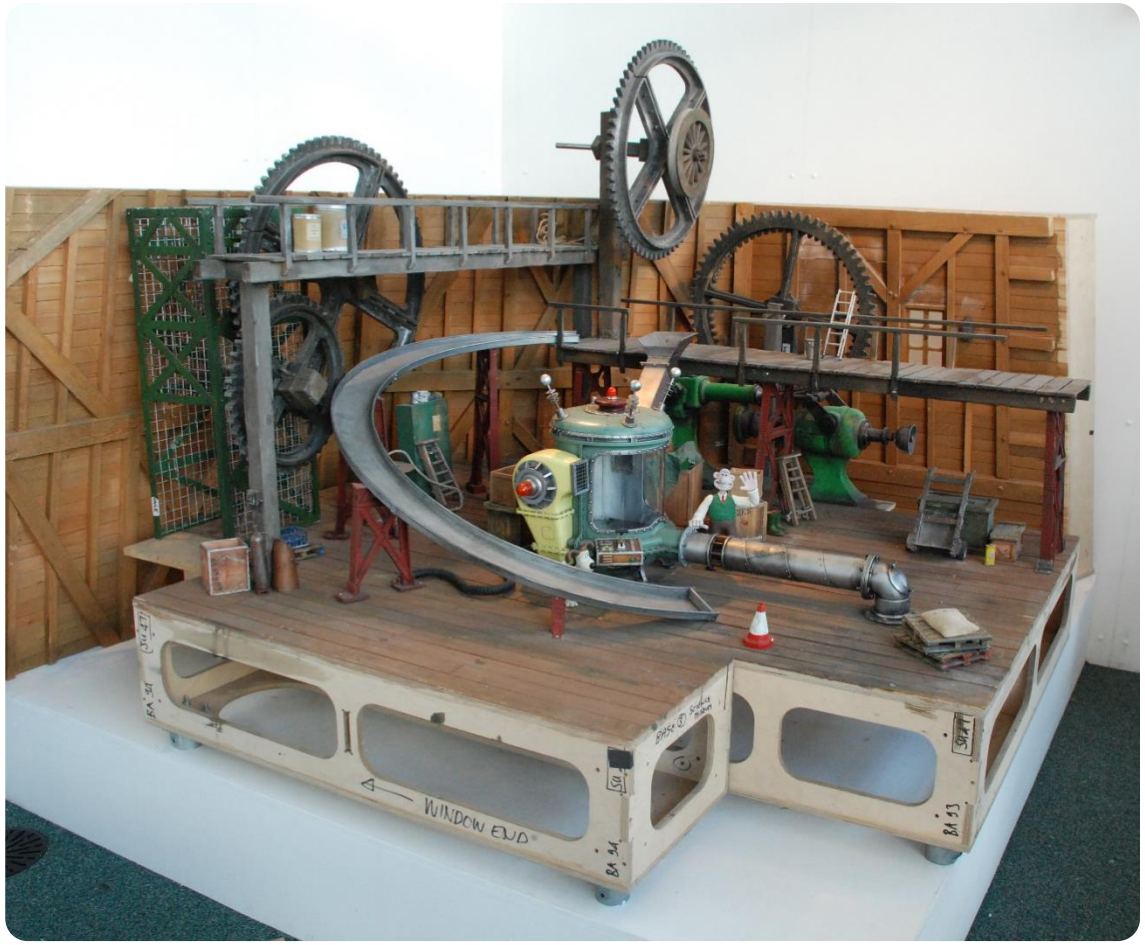
He has designed a ‘Self Operating Napkin’, so that when the man in the picture lifts his spoon, it sets off a series of mechanisms that eventually work together to lift the napkin to wipe his mouth!

Cracking Contraptions

‘Mouse Trap’ is a popular game in which players compete to set off a series of different mechanisms that work together to capture the mouse.

Cracking Contraptions

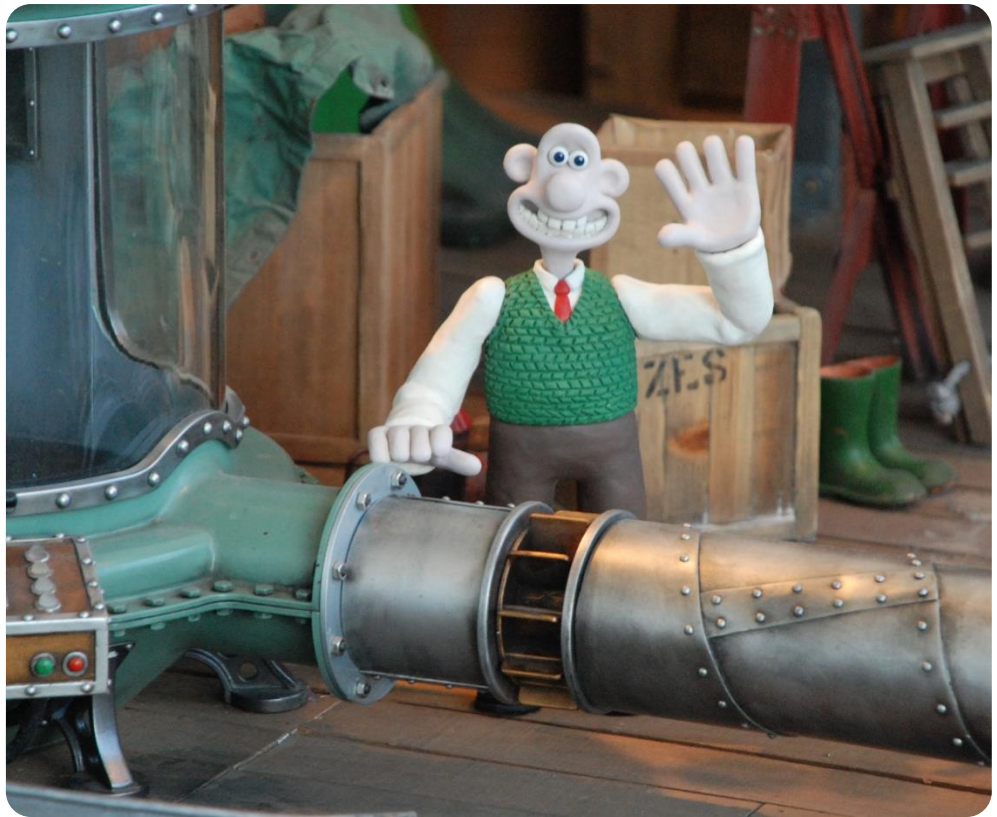
This contraption shows Wallace and Gromit, characters designed by Nick Aardman.



Cracking Contraptions

Watch this ‘Wallace and Gromit’ episode, in which they use one of their cracking contraptions called ‘The Tellyscope’.

https://www.youtube.com/watch?v=Xc5eqwzEgUo

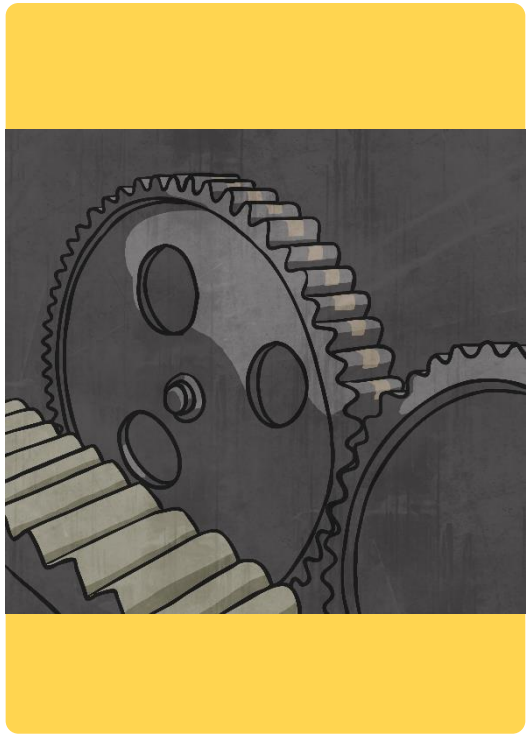


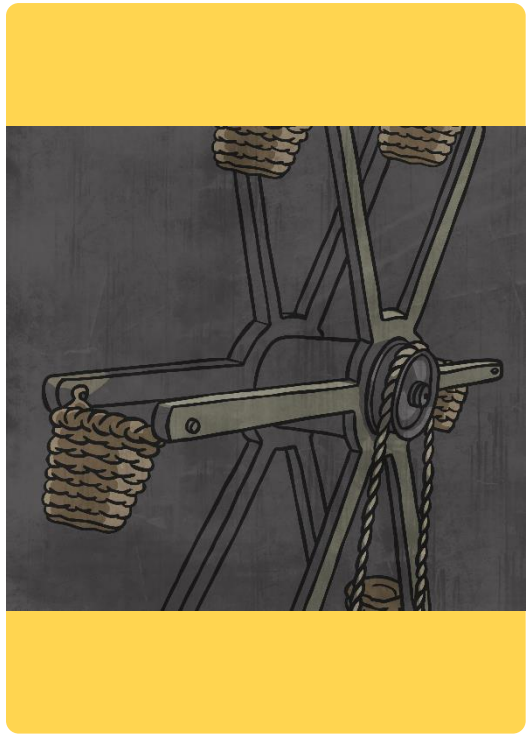
Which mechanisms can you identify?

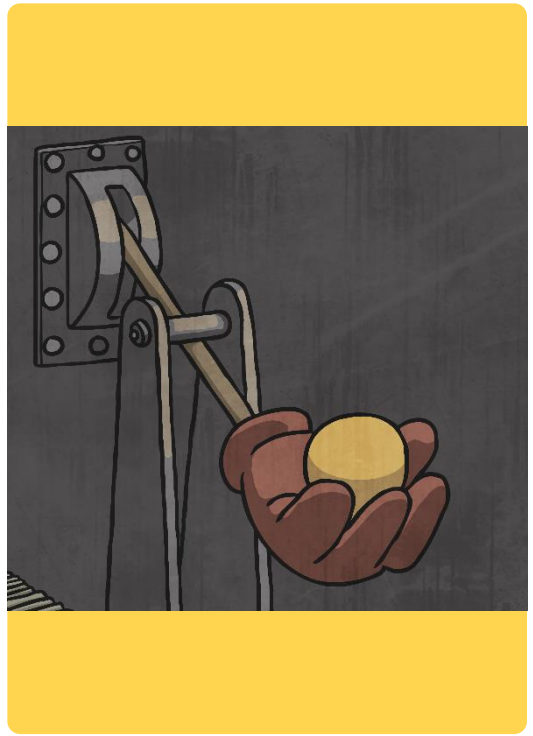
Cracking Contraptions

The Wallace and Gromit characters have designed a machine called ‘The Tellyscope’. They use it to change the channels on their television!

Can you identify some of the mechanisms they use in the Tellyscope?







Marvellous Machines

Now it's your turn to become an inventor!

Your task is to design a **machine** that will achieve a given aim.

Choose an aim (next page) and design a machine that achieves that aim. Or you could think of your own one for your machine!

Make sure your machine uses lots of **mechanisms** including **levers**, **pulleys** and **gears** to achieve its aim.

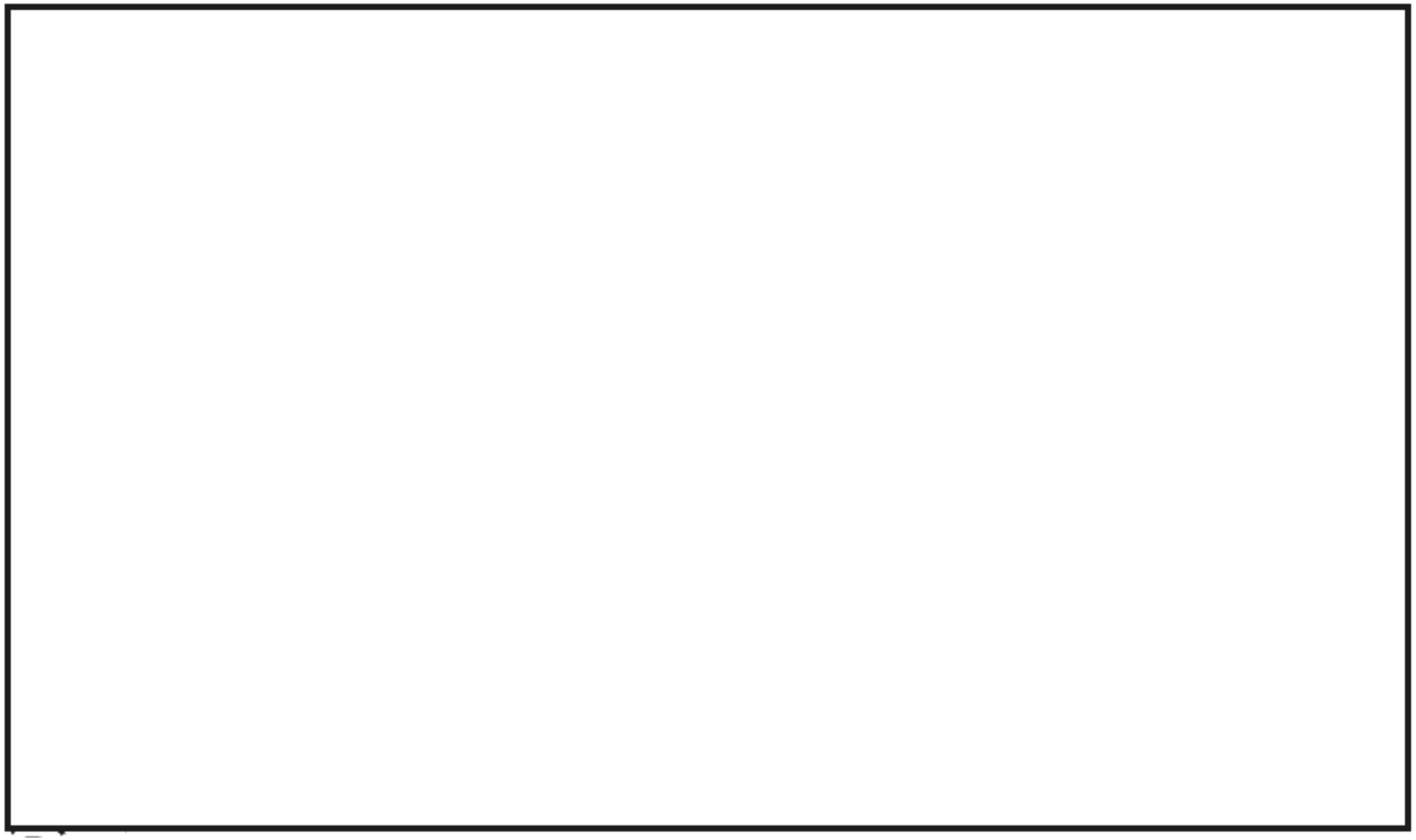
Draw your invention and explain how it works, using the pages coming up to help.

Possible Aims for your machine

Water a plant.
Make a drink.
Pack a bag.
Put toothpaste on a toothbrush.
Find a missing pen lid.
Collect mail from the letter box.
Make a bed.
Set a table.
Run a bath.
Hang a coat up.
Tie a pair of shoe laces.
Turn a light off.
Tidy a table.
Tie a tie.
Peel an apple.
Write a card.

Marvellous Machine

Design your marvellous machine in the box below.



Machine name:

What is your machine's aim?

Machine name:

What is your machine's aim?

How does your machine work? Firstly Then Next Finally

Use these words to help you explain and evaluate the machine:

pulley lever gear move pull push lift speed slow fast force spin turn around

Plenary

https://www.ket.org/education/interactives/Everyday-Learning/simple-machines/simpmachines.html