

# In DT we are learning about... Mechanisms - Can you make a rotary water wheel to move water from one place to another?



## Key vocabulary



**Mechanical System** - A set of parts of components used together to create movement

**Rotary Motion** - Moving around a centre or on axis e.g. a wheel

**Shaft** - A rotating rod on a motor

**Bearing** - Holds the shaft in position and allows it to rotate

**Gears** - The toothed wheels (cogs) that lock together and turn one another

**Pulleys** - Wheels that do not lock together and are joined together by a drive belt

**Drive Belt** - The belt which connects and transfers movement between two pulleys

**Driver** - The gear or pulley that starts the movement in mechanical system

**Follower** - The gear or pulley that provides the output movement of the system

**Mesh** - The point where two gears join movement

**Motor Spindle** - The rod at the end of a motor onto which the gear or pulley is attached.

**Purpose** - How your product is going to be used

**Audience** - Who is going to be using your product

**Function** - How well the design helps and meets the needs and wants of the user

## Characteristics needed for this topic:

- Problem Solving
- Curiosity
- Perseverance



## Sticky knowledge and skills



- Water wheels work by using the flow of water to power the movement of the wheel.
- You can change the speed of rotation by using pulleys and gears
- Using a small pulley or gear to drive a larger one reduces rotation speed and gears down the product
- You need power to achieve an output.
- I can collect information about existing products and use market research to inform my design (year 6)
- I can explain how my product will appeal to a specific audience and how it meets its purpose, producing a design specification
- I can draw detailed 3D designs and use exploded diagrams or cross-sectional drawing (year 6)
- I can make a prototype before making a final version
- I can name, choose and use specific tools for a task competently and safely
- I can use a scoring technique confidently for folding
- I can use tech card and ensure that my frame is stable by using further strengthening techniques
- I can use mechanical and electrical systems to enhance products
- I can test and evaluate the appearance and function of my product with specified audience and design criteria/specification

## Links to previous learning

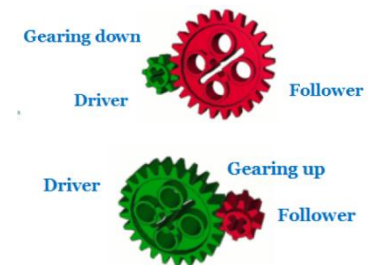
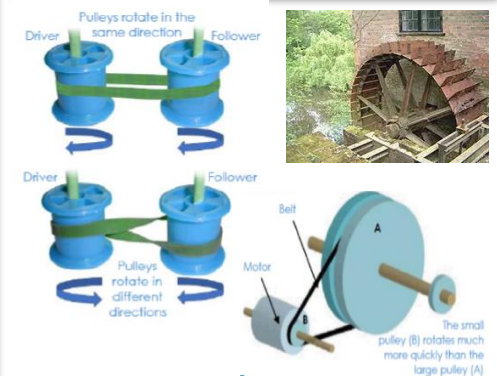


- Knowledge of chassis, wheels and axles and how they work
- Using paper/card strengthening techniques
- Creating a product with a slider, linkage or lever
- Knowledge of a pivot/ loose and fixed pivots
- Using basic tools, including a junior hacksaw

## Key Designers



Zigong - Water wheel designer  
Robert Casement - Laxey Wheel designer.  
John Tyler - Water turbine designer.



## Aspirations



- Mechanical Engineer
- Ride Controller/operator
- Theme Park designer
- Electrician
- Electronic Design