

Gears and Pulleys

Prior Learning:

Pupils have previously explored simple mechanisms such as sliders and levers and have developed their understanding of structures through creating and evaluating 3D designs.

Key Vocabulary

Pulley	A pulley is a simple machine consisting of a grooved wheel with a rope, belt, or chain running along its circumference
Gear	The word gear primarily refers to equipment for an activity or a mechanical part with interlocking teeth
Axle	An axle is a central shaft, spindle, or rod that connects a pair of wheels.
Rotation	Rotation is the circular movement of an object around a centre point or axis.

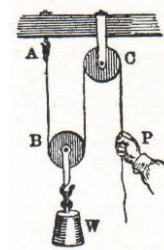
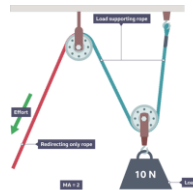
Key Inventor

The Romans improved and used pulley systems to lift heavy building materials.



Key Learning

What made Roman structures strong, stable, and fit for purpose?
 How do gears, pulleys, and other simple machines create movement?
 How do different materials and joining techniques affect the strength and stability of a structure?
 How can we design a Roman structure that includes a working mechanical system?
 How can we accurately measure, construct, and assemble our Roman structure and moving mechanism?
 How can we test, evaluate, and improve our structure to make it stronger and more effective?



Visual Vocabulary



A saw is a hand or power tool used to cut hard substances. It typically features a thin metal blade or abrasive disk with sharp teeth.



"cord" is a flexible, string-like length of twisted fibres or wire.



A cog mechanism is a system of toothed wheels (cogwheels) that interlock to transfer motion and power from one part of a machine to another.

The Big Question

How can we use gears and pulleys to design and build a strong Roman structure with moving parts?

Cross Curricular Links

Aspiration
 History - The Roman Empire