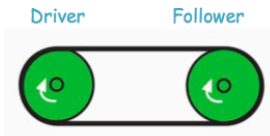




Year 5
DT - Mechanical systems: Pulleys or gears

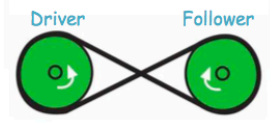
Key vocabulary	
Pulley	A grooved wheel over which a drive belt can run
Gear	A wheel with teeth around its circumference
Drive belt	The belt which connects and transfers movement between two pulleys
Gearing up or down	Changing the rotational speed of a product by the use of pulleys or gears. When a small pulley or gear is used to drive a larger one the rotational speed is reduced and the product has been geared down.
Mechanical system	A set of related parts or components used to create movement
Driver	The gear or pulley that provides the input movement to the system
Follower	The gear or pulley that provides the output movement to the system
Mesh	The point where two gears join together and transfer movement
Motor spindle	The rod on the end of the motor onto which a gear or pulley is attached

Developing understanding of gears and pulleys



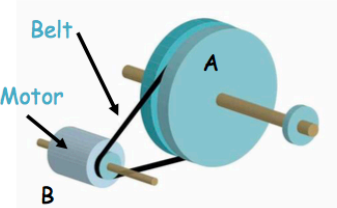
Driver Follower

The pulleys rotate in the same direction



Driver Follower

The pulleys rotate in different directions

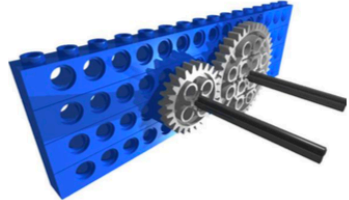


Belt
Motor
A
B

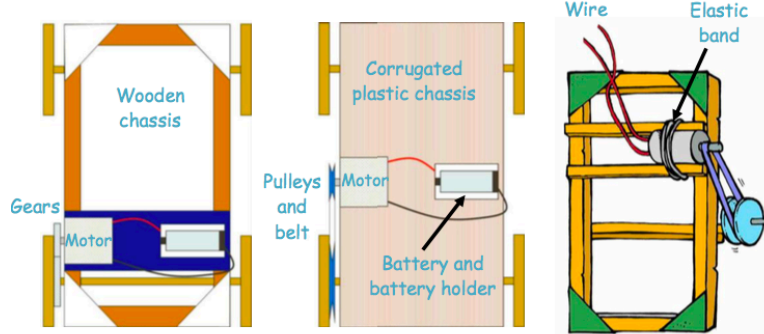
The small pulley (B) rotates much more quickly than the large pulley (A)

Using construction kits, ask children to explore gear ratio using combinations of two gears e.g.

No. teeth	Ratio
8, 16	2:1
8, 40	5:1
8, 24	3:1
40, 40	1:1



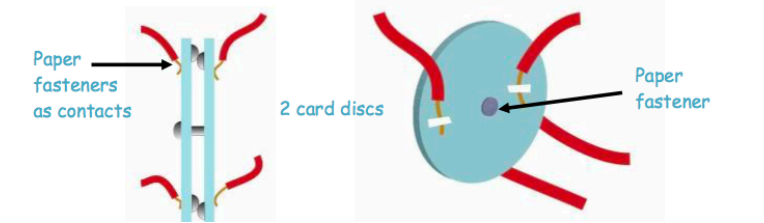
Building gears or pulleys into children's products



Wooden chassis Corrugated plastic chassis Wire Elastic band

Gears Motor Pulleys and belt Motor Battery and battery holder

An example of a handmade reversing switch



Paper fasteners as contacts 2 card discs Paper fastener