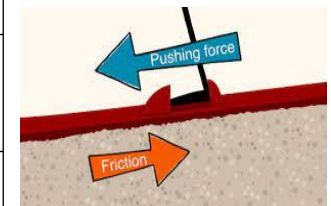


# Salesbury Super 6 Knowledge Organiser for Jupiter Class (Y4/5)

## Learning Focus: **Science & DT: Spring Into Action**



### Key Knowledge to Learn

- 1 **Gravity is the force that pulls objects towards the Earth's core.** If something is moving in a certain direction, then a force must have acted upon it. Gravity is one such force.
- 2 **Friction – the stopping force** – happens in a number of ways. Friction is the force that gives our shoes grip on the ground and prevents us from falling over. Friction happens when two surfaces of some kind move across each other and can generate heat. *Try rubbing your hands together to feel friction in action!*
- 3 **Water Resistance** occurs when an object moves through water or across the surface of water. Someone swimming across the surface of a swimming pool experiences water resistance, pushing against them and slowing them down. **Water resistance is NOT** what affects floating or sinking.
- 4 **Cams are important mechanical components that change one type of movement into another for a special purpose.** A CAM changes the input motion, which is usually rotary motion (a rotating motion), to an up/down linear motion of a follower. They are found in many machines and toys.
- 5 **A lever consists of an arm, a fulcrum and a load.** The arm is the fixed, unbending part of the lever. The lever moves around the fulcrum. Levers are useful, because they are force multipliers. A small amount of force is put in and the force is magnified to act on the load.
- 6 **Gears are toothed wheels.** Teeth from one gear wheel will fit into another. If the first wheel is turned, the second wheel will turn too, but in the opposite direction. Linked gear wheels that differ in size to each other will travel at different speeds.

### Vocabulary

<b>gravity</b>	The force that attracts a body towards the centre of the earth. Gravity causes things to drop to the ground. The sun's gravity keeps the planets orbiting around it.
<b>friction</b>	The resistance that one surface or object encounters when rubbing against another. Friction causes objects to slow down and the energy becomes heat.
<b>water resistance</b>	A force that is caused by water with the force acting in the opposite direction to an object moving through the water. The faster an object moves, the greater the water resistance.
<b>cams</b>	A CAM is a shaped component used to turn one form of movement into another. It has two parts, the FOLLOWER and the CAM PROFILE. There are a number of different shapes and designs of cams and together they create motion.
<b>levers</b>	A lever is a rigid bar resting on a pivot that is used to move a heavy or firmly fixed load.
<b>gears</b>	A gear is a wheel with teeth that works with other gears to transmit power from one part of a machine to another. Bigger gears have more teeth so smaller gears have to go faster to keep up.

### You can find out more by accessing these links:

An introduction to **gravity**: [What is gravity? - BBC Bitesize](#)  
 A simple introduction to the concept of **friction**: [Friction - BBC Bitesize](#)  
 Learn about **water resistance** in part of this video: [Science KS2: What are air and water resistance? - BBC Teach](#)

A cracking website to explore about different types of **cams**: [Cams - A Definition \(technologystudent.com\)](#)  
 A super general video about all of the **mechanisms** for this topic: [Science KS2: Mechanisms - BBC Teach](#)  
 Here's a video about **levers**: <https://youtu.be/YIYEiOPgG1g>  
 Look at these **gears**: [Simple Machines – Gears - YouTube](#)