



Here is some advice to someone who wants to be a successful speed skater at the Olympics.

To go fast you need to reduce friction. Your ice skates will need smooth, thin blades skating over an even surface of ice. The toes will need to be spiky so you can grip the ice when you push off. Getting low to the ground will help you to be aerodynamic. Your clothing will also be streamlined to avoid trapping any air. It's best to wear a shiny hat and goggles.



### Friction

Sometimes we want lots of friction to grip and sometimes we want hardly any so we can slide



## Year Four Science Forces



### Key Knowledge

What is a force?	A force is either: a push or a pull. Forces can make things speed up, slow down, change shape or change direction.
Gravity	Gravity is the force that pulls objects towards the centre of the Earth. Gravity stops things from floating away into space. When things go into the air (like a ball) gravity pulls them back down.
Friction	Friction is a force between two surfaces rubbing together. Friction gives us grip. Friction produces heat. Rougher surfaces slow things down a lot. Smoother surfaces don't slow things down as much.
Magnetism	Magnets attract or repel each other or other objects. North and South attract. But North and North or South and South will repel.

### Significant person: Mary Somerville

Born in Scotland in 1780, Mary Somerville was the first woman scientist to be elected to the Royal Academy. She was fascinated by magnets and carried out lots of experiments with them. She was also one of the first popular Science writers - selling many books.



### Key vocabulary

force	A push or a pull
gravity	A force that pulls objects towards the centre of the earth.
friction	A force between two surfaces rubbing together
aerodynamic	Aerodynamic means having a shape which reduces the friction from air moving past.
reduce	People reduce friction to make their skateboard roll further
increase	Studs on football boots increase the friction so we don't slip over

### Aerodynamic plane

