

# The Knowledge

Supporting the National Curriculum



Knowing More

Remembering More

Learning More

# Forces and Magnets

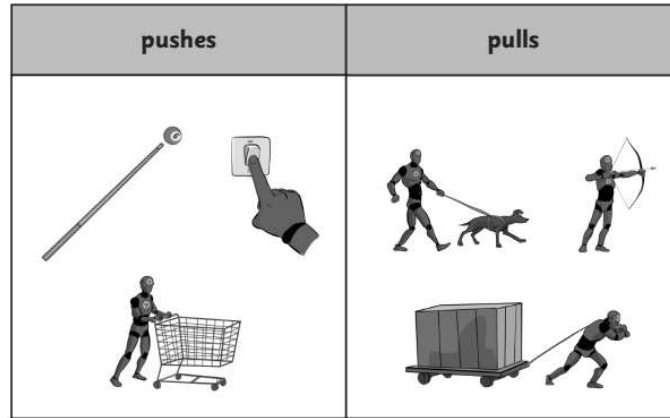


**ARDEIGH GREEN**  
JUNIOR SCHOOL

Year 3  
Science

# Forces

A force is a **push** or **pull** that acts upon an object. We can't see forces, but they are an important part of our everyday lives. We push and pull objects to do many different things. When we push or pull objects, we can **move** the object, **change** the object's **shape**, or make the object **change direction**.



When an object **moves** across a surface, **friction** acts as an **opposite** force. Friction is a force that **holds back the motion** of an object. Some surfaces create more friction than others, meaning that objects move across them more slowly. Objects move differently depending on the **surface** of the object itself.

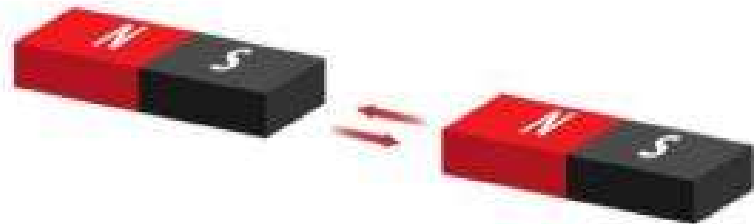
# Magnetic Forces

Magnets are usually made from **iron**. They can **attract** and **repel** other objects with their magnetic **forces**.

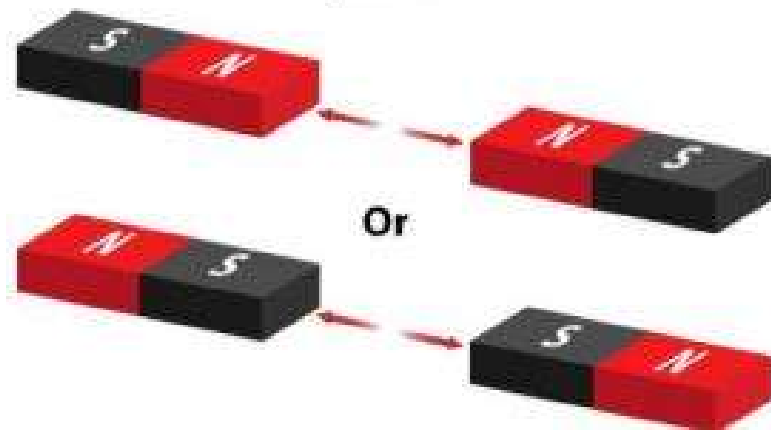
Magnetic forces act at a **distance** meaning that a magnet does not need to be in **contact** with another object for the magnetic forces to act.

Magnets can be lots of different shapes, sizes and colours, but they will always have a **north** and **south** magnetic pole.

## Attraction



## Repulsion



# Key Vocabulary

**force** - a **power** or **strength** that can cause an object to **move**

**friction** - the force that **pulls** backwards when objects **rub against** each other

**motion** - the process of **movement**

**magnet** - an object that can **pull** some **metal** items towards it

**attract** - to **pull towards**

**repel** - to force back or **push away**

**magnetic field** - the **force** that **surrounds** a **magnet** and **attracts** magnetic objects

**non-contact force** - a force that occurs **without objects touching** each other

**magnetism** - the **force** of a **magnet**

**compass** - an instrument which shows **direction**

**orienteeing** - a sport where you have to find your way across a route with the aid of a **map** and **compass**

**magnetic pole** - each **end** of the **magnet** where the force is the strongest

## Everyday Uses of Magnets



# Magnetic Materials

## MAGNETIC METALS



Iron



Nickel



Cobalt



Steel

## NON-MAGNETIC METALS



Aluminum



Gold



Silver



Copper

eclipsemagnetics.com

## Test Yourself

- What is a force?
- How do objects move on different surfaces?
- What are the different types of magnet?
- What are the names of the two magnetic poles?
- What happens when you push two like poles together?
- What happens when you push opposite poles together?
- Which materials are magnetic?
- Are all magnets the same strength?
- What are the everyday uses of magnets?
- Which direction will a compass needle always point to?
- Are all metals magnetic?