

## Knowledge Organiser

### Subject: Science      Unit: Forces and Magnets

#### Overview:

During this sequence of learning, pupils will compare how objects move on different surfaces and recognise that forces act between objects. Observe how magnets attract and repel each other and group materials on the basis of whether they are magnetic or not.

#### What should I already know?

- Metal is a material from which objects can be made.
- As objects move across a surface there is friction when they rub against each other and that sometimes this friction is larger or smaller.
- Applying forces to objects can change their shape.
- Know that the roughness of a material is an example of a property.

#### What will I know by the end of the unit?

- A force is a push or a pull that causes something to move or change direction.
- Push and pull forces happen around us every day e.g. tucking your chair in would be a push force and pulling it out would be a pull force.
- Objects move differently on rough and smooth surfaces - they don't move so easily on rough surfaces as there is a higher friction force acting on the object.
- There are forces that can act on an object without touching them and magnetism is an example of this type of force.
- Magnets can attract a magnetic object through some materials e.g. a piece of paper.
- Some magnets have a stronger force than others and can attract an object from further away.
- Magnets have two poles called north and south.
- There is a magnetic field around a magnet that is strongest at the poles (either end of the magnet).
- Some materials are magnetic, meaning they are attracted to the magnet while others are non-magnetic.
- Not all metal objects are magnetic and they have to contain certain metals to be attracted to a magnet.
- Opposite poles of a magnet attract each other e.g. north to south whereas the same poles repel each other.

#### Vocabulary:

force

A push or a pull that causes an object to move or change direction.

push force

A force that moves an object away from something e.g. kicking a football.

pull force

A force that moves something closer towards you e.g. pulling a door open.

friction

A force that is produced when two surfaces move over each other.

magnetic

An object or material that is attracted to a magnet.

non-magnetic

An object or material that is not attracted to a magnet.

pole

The ends of a magnet. Every magnet has a north and south pole - these are the strongest parts of a magnet.

resist

To keep away or not be affected by.

attract

To come together.

repel

To push away.

