KNOWLEDGE ORGANISER

SCIENCE: THE POWER OF FORCES YEAR THREE

KEY KNOWLEDGE:

QUESTION 1: What is friction?

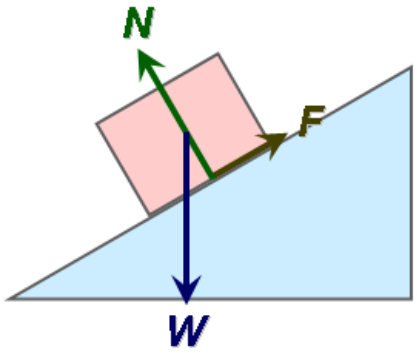
ANSWER

What is friction?

Friction is the resistance of motion when one object rubs against another. Anytime two objects rub against each other, they cause friction. Friction works against the motion and acts in the opposite direction.

Friction and Energy

When one object is sliding on another it starts to slow down due to friction. This means it loses energy. However, the energy doesn't disappear. It changes from moving energy (also call kinetic energy) to heat energy. This is why we rub our hands together when it's cold. By rubbing them together we generate friction and, therefore, heat.



The force F of friction pushes back on the block.

QUESTION 2: What materials are magnetic?

ANSWER

Magnetic materials are always made of metal, but not all metals are magnetic.

Iron is magnetic, so any metal with iron in it will be attracted to a magnet. Steel contains iron, so a steel paperclip will be attracted to a magnet too. Most other metals, for example aluminium, copper and gold, are NOT magnetic.

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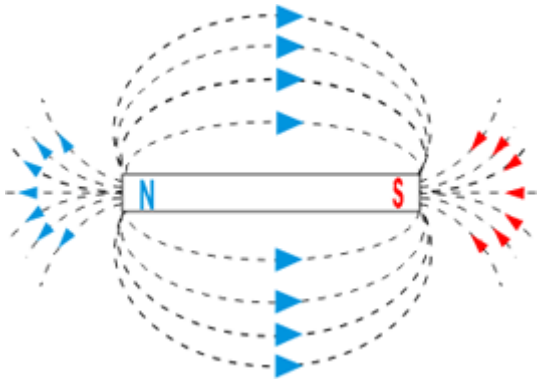
QUESTION 3: How do magnets affect each other?

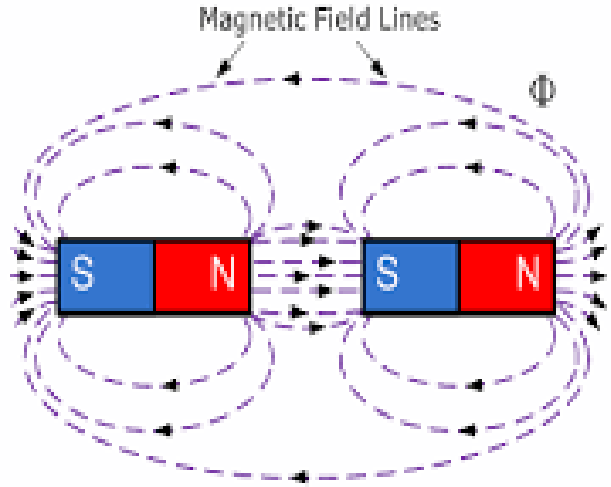
ANSWER

The magnetic force in a magnet flows from the North pole to the South pole. This creates a magnetic field around a magnet.

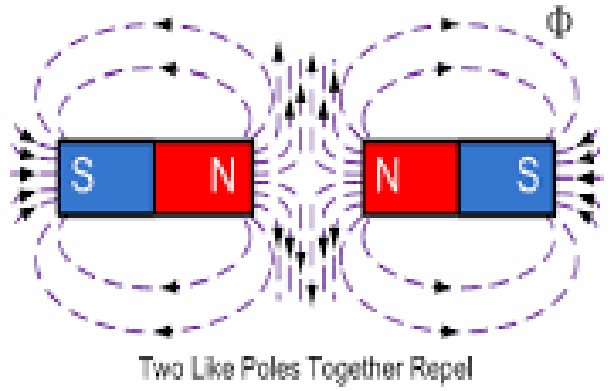


Have you ever held two magnets close to each other? They don't act like most objects. If you try to push the South poles together, they repel each other. Two North poles also repel each other.

Turn one magnet around, and the North (N) and the South (S) poles are attracted to each other. Just like protons and electrons - opposites attract.



Two Unlike Poles Together Attract



Two Like Poles Together Repel