

تم تحميل هذا الملف من موقع المناهج الإماراتية



ملخص الدرسين الأول والثاني Magnetism and Electricity الكهرباء والمغناطيسية منهج انسابير

موقع المناهج ← المناهج الإماراتية ← الصف الثاني ← علوم ← الفصل الأول ← ملخصات وتقارير ← الملف

تاريخ إضافة الملف على موقع المناهج: 2024-10-28 09:57:14

ملفات اكتب للمعلم اكتب للطالب | اختبارات الكترونية | اختبارات | حلول | عروض بوربوينت | أوراق عمل
منهج انجليزي | ملخصات وتقارير | مذكرات وبنوك | الامتحان النهائي للمدرس

المزيد من مادة
علوم:

التواصل الاجتماعي بحسب الصف الثاني



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف الثاني والمادة علوم في الفصل الأول

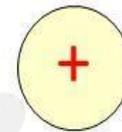
أسئلة الاختبار التكويني الثاني	1
حل مراجعة اختبار التقويم الثاني Magnetism and Electricity الكهرباء والمغناطيسية منهج انسابير	2
مراجعة اختبار التقويم الثاني Magnetism and Electricity الكهرباء والمغناطيسية منهج انسابير	3
عرض بوربوينت حل كتاب الطالب منهج انسابير	4
حل درس مجموعات الحيوانات من الوحدة الثالثة	5

Lesson1: Electricity and designing solutions

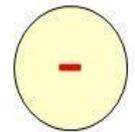
All matter is made up of particles.



Some particles have a positive or negative charge.



Positive Charge



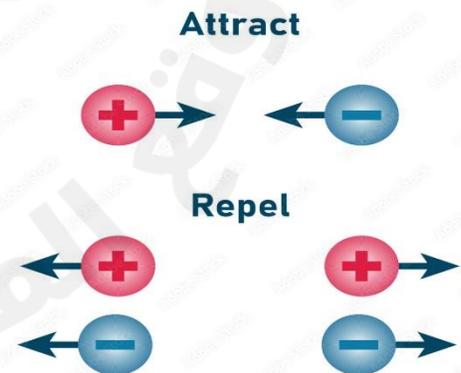
Negative Charge

Charge Particle

Electric energy is the energy of these charged particles.

The property that causes electricity is electric charge.

Things that repel each other push each other away.



Things that attract each other attract each other.

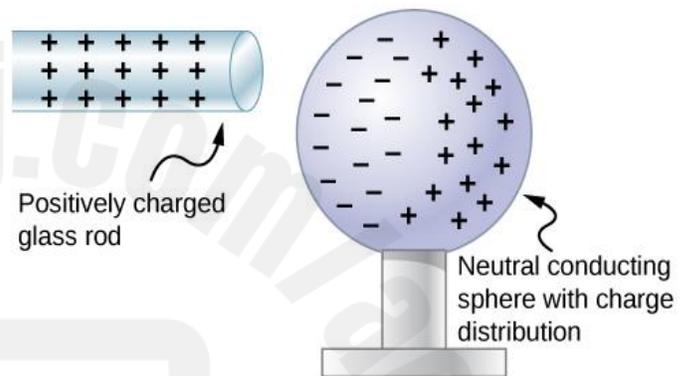
Discharge occurs when static electricity moves from one object to another.



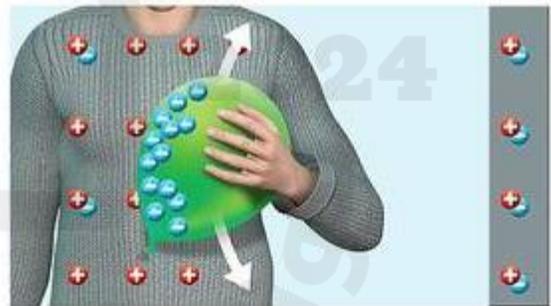
A positively charged object attracts a negatively charged object.

Things with a positive charge push each other away.

Things with a negative charge also push each other away.

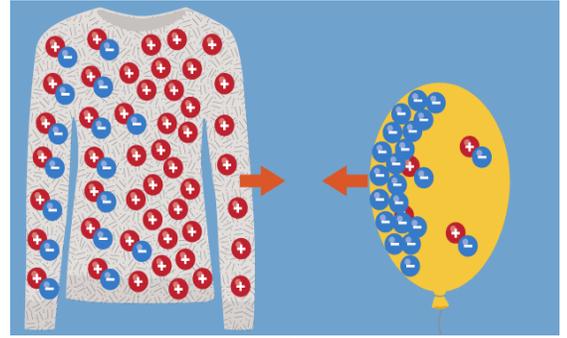


What happens when you rub a balloon against a wool jacket?
answer: Negative particles move from the jacket to the balloon.

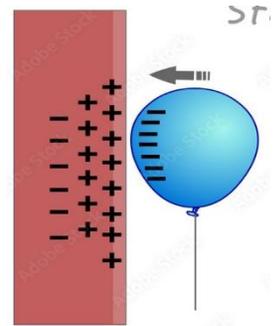


Static Electricity :

When two objects touch, the negative particles can move from one object to the other. The negative particles can build up on one of the objects. That object is negatively charged. This buildup of electric charge is called **static electricity**.



If you hold a charged balloon up against a wall, the negative charge attracts the positive (+) particles on the wall. This attraction causes the balloon to stick to the wall.



Why did you have to rub the balloon between each object?
to recharge it.

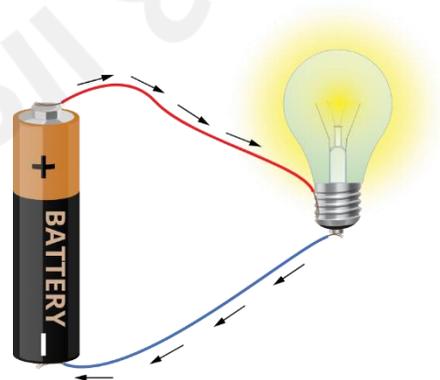
Electricity is needed to power lights and appliances.

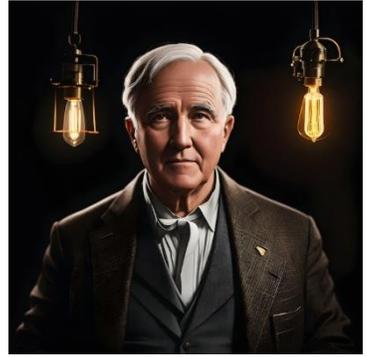
Electric Current

Charged particles can build up on an object.

They can also be made to flow. The flow of charged particles is called **electric current**.

We use the energy from electric current to produce light, sound, and movement.

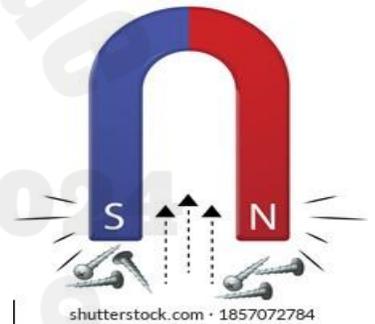




Thomas Edison The inventor Thomas Edison is the one who improved the design of the light bulb. To become cheaper, longer lasting and less power consuming.

A magnet is a material that can attract objects made of iron, cobalt, steel, and nickel. The ability of an object to push or pull another object that is magnetic is called **magnetism**.

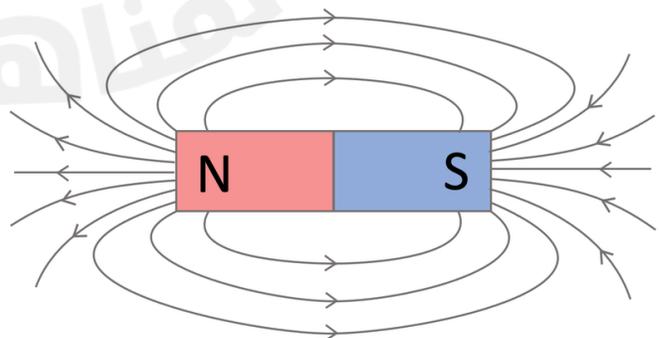
Magnetic Force



Every magnet has a north pole and a south pole. The pole is the end of the magnet where the magnetic force is strongest.

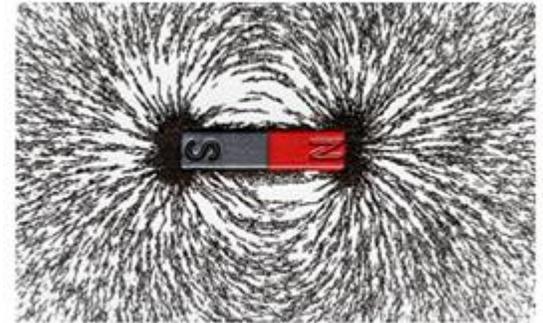
Magnetic Field

A magnetic field is the area around a magnet that has magnetic force.



A magnet can push or pull an object without touching it. But it must be close enough to the object to be in its **magnetic field**.

Pieces of iron are sprinkled around this magnet. The pieces of iron show the magnetic field.



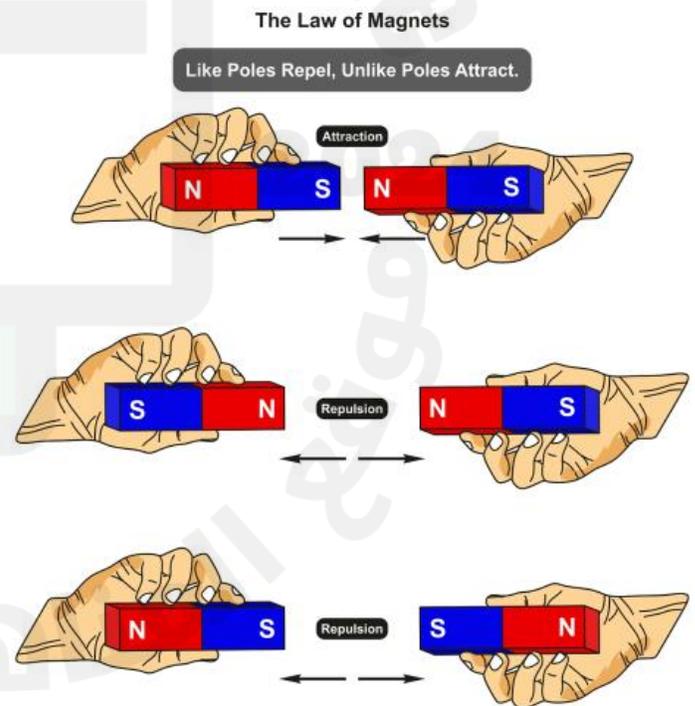
Why do magnets attract only certain objects?

Model Answer: A magnet attracts only objects made of certain materials.

Two magnets are attracted to each other when the south pole of one is facing the north pole of the other.

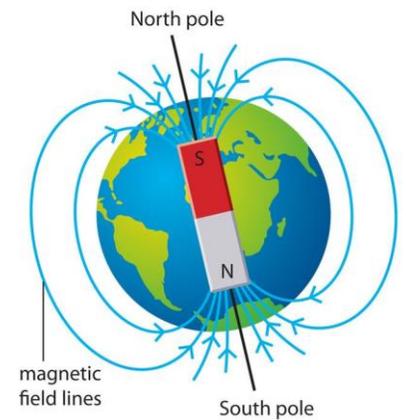
Two magnets repel each other when their south poles are facing each other.

Two magnets also repel each other when their north poles face each other.



Earth's Magnetic Field

The Earth is a giant magnet. Iron deep within the Earth creates a huge magnetic field around the planet. Just like a bar magnet, the Earth has two magnetic poles.



A magnetic compass is used to determine direction.

A compass is a tool that helps you determine north, south, west, east, and other directions. A compass



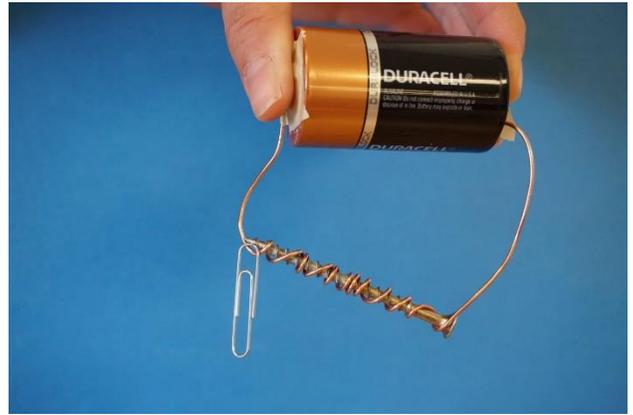
needle is a magnet that can move. The red arrow always points north. Why? Because the Earth's magnetic north pole attracts the compass needle. Before the invention of the Global Positioning System (GPS), people used compasses to find their way.

Why does a compass arrow always point north?

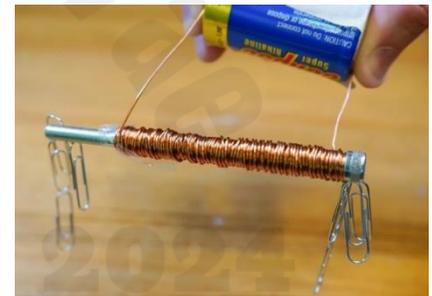
Model answer: The arrow is the South Pole, so it is always attracted to the Earth's North Pole.

Using Magnets

A magnetic field is formed around a wire if a current flows in the wire. If you wrap the wire in a coil, the field becomes stronger. When current flows in the wire, the coil becomes a magnet. The magnet becomes stronger if you put a metal rod inside the coil. An electromagnet is a coil of wire around a metal rod, such as an iron nail. A battery at each end of the wire makes current flow in the wire.



You can turn an electromagnet on and off using a switch. The switch makes electromagnets useful in many electrical devices, such as loudspeakers and doorbells.



1. What problems can be solved by the effects of the magnetic field in an electromagnet?

Typical answer: The current flowing through the wire of an electromagnet can be used to sort recyclable materials.

2. What are two ways to make an electromagnet stronger?

Typical answer: Wrap the wire around the nail several times to increase the strength of the battery.

