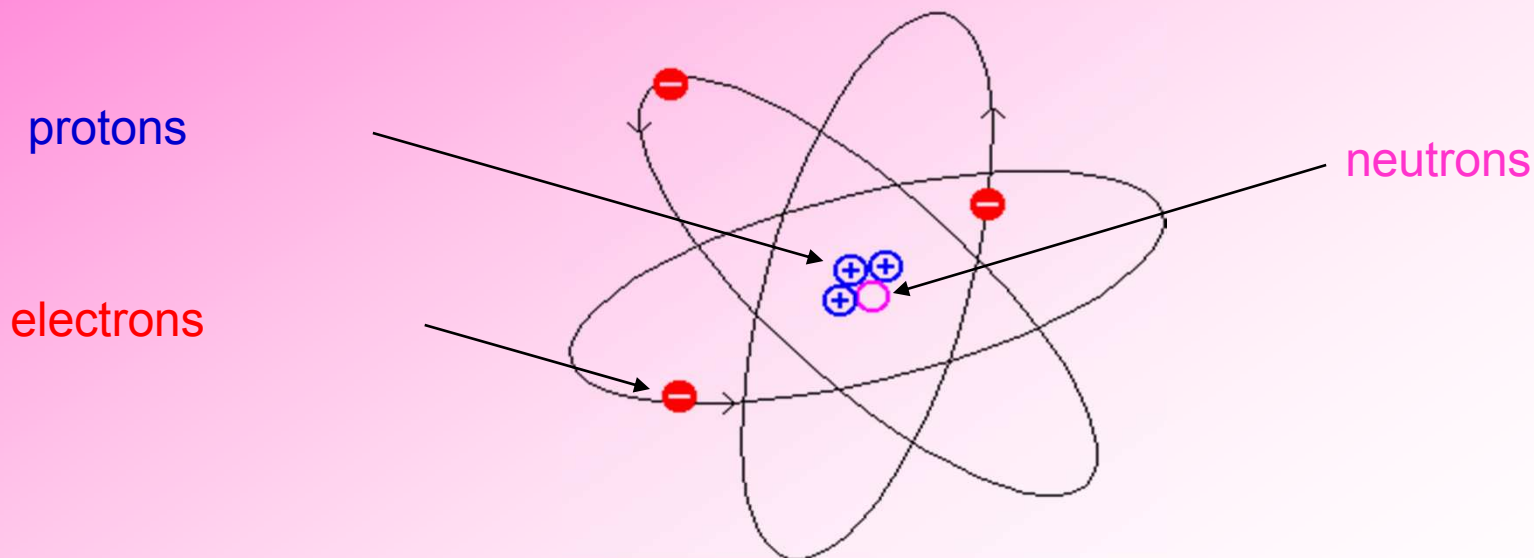


**ELECTRICITY**

# ATOMIC STRUCTURE

- All matter is made of atoms
- Atoms are made of **protons**, **neutrons** and **electrons**



# ATOMIC CHARGE

- Protons have a positive charge
- Electrons have a negative charge
- Neutrons have no charge

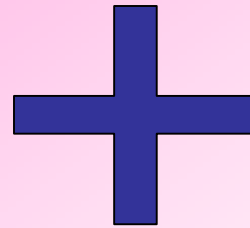
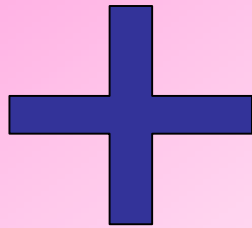
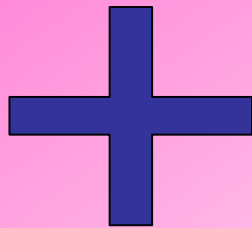
# ATOMIC CHARGE

- In atoms the number of protons is equal to the number of electrons
- Most atoms have a total charge of zero

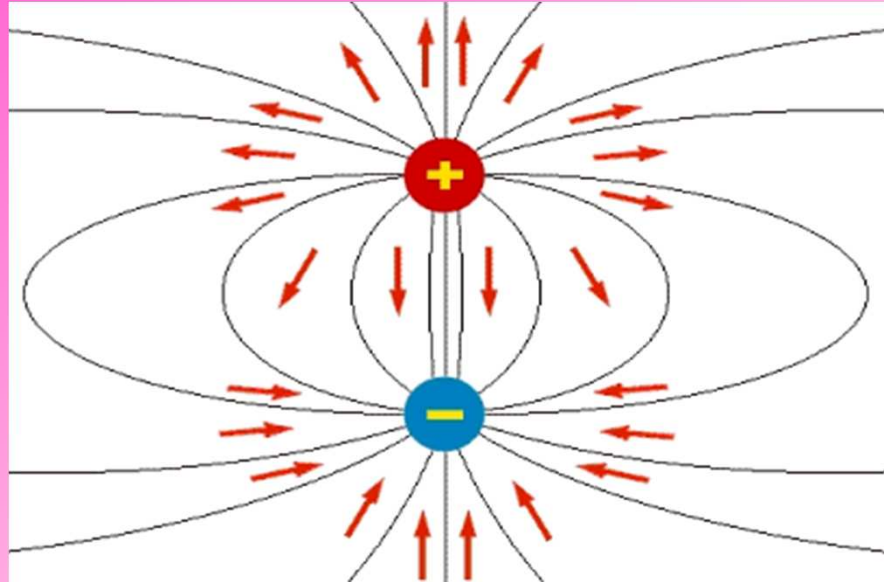
# ATOMIC FORCES

- **Attraction** occurs between particles with **opposite charges**
- **Repulsion** occurs between particles with the **same charge**

# CHARGE INTERACTION

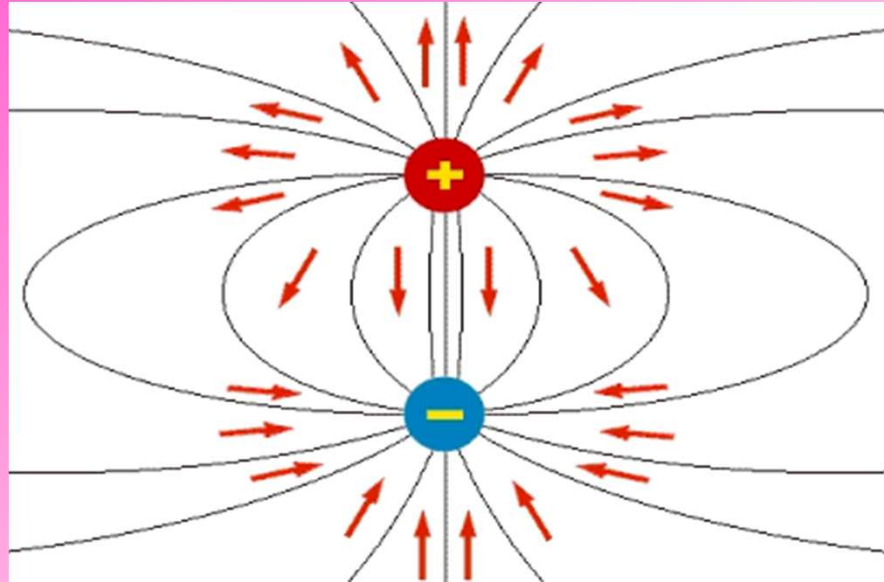


# ELECTRIC FIELD



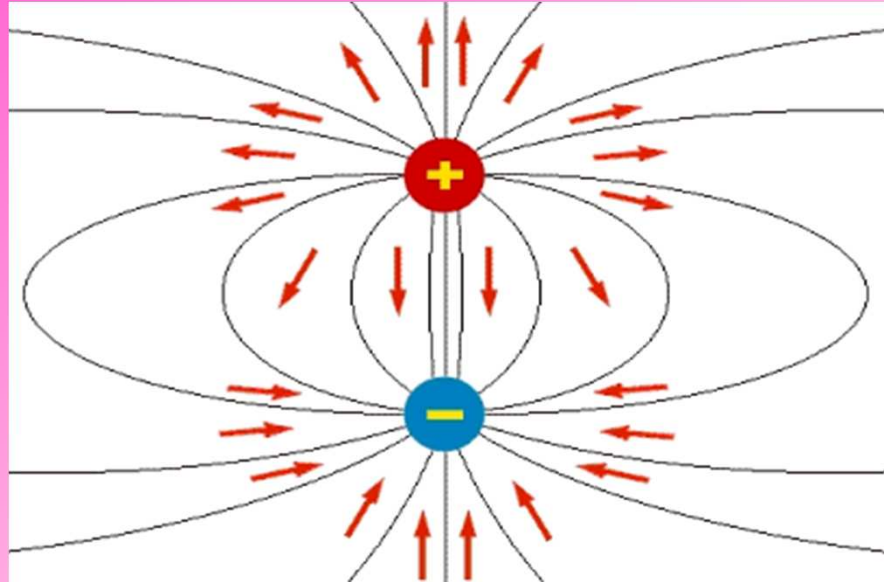
SURROUNDS EVERY CHARGED  
PARTICLE

# ELECTRIC FIELD



STRONGEST NEAR THE CHARGED  
PARTICLE; WEAKER FARTHER AWAY  
FROM THE CHARGE

# ELECTRIC FIELD



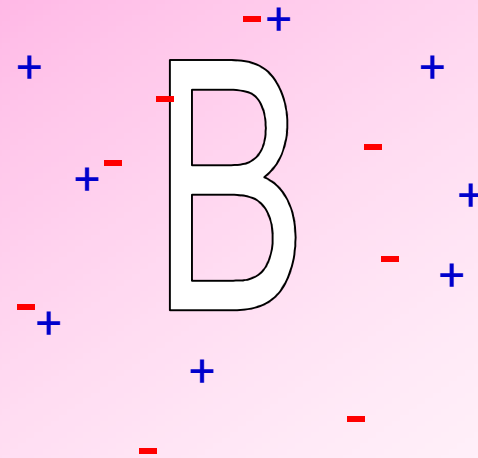
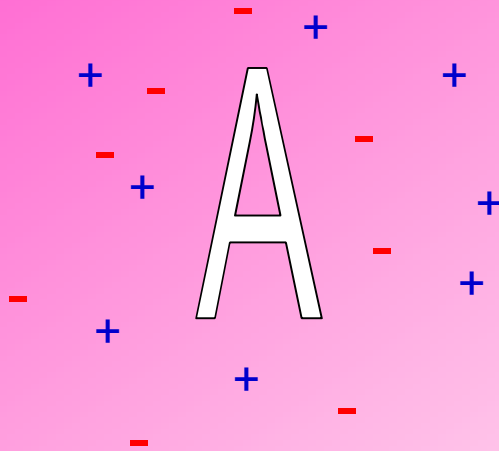
THE FIELDS AROUND CHARGED  
PARTICLES INTERACT WITH EACH  
OTHER

# IONS AND CHARGES

- Electrons can move from one atom to another

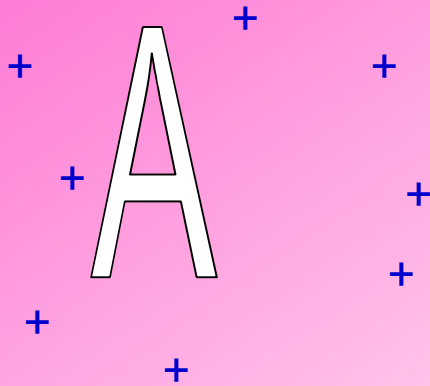
# IONS AND CHARGES

- Electrons can move from one atom to another

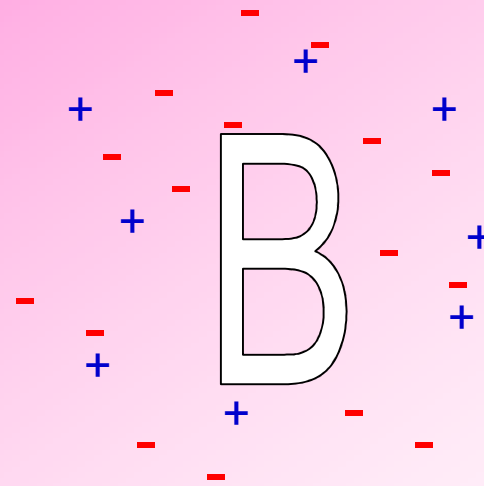


# IONS AND CHARGES

- Electrons can move from one atom to another



Positive charge



negative charge

# IONS AND CHARGES

Atoms that gain or lose electrons form ions

- Any atom that has a different number of electrons than it has protons is called an ion

# CHARGING OBJECTS

- GIVING AN OBJECT AN ELECTRIC CHARGE BY MOVING ELECTRONS

# CHARGING OBJECTS

## FRICTION

Rubbing one object on another object

causes electrons to be passed from the first  
object to the second

# CHARGING OBJECTS

conduction

one object comes in contact with another object

causes electrons to be passed from the first  
object to the second

# CHARGING OBJECTS

induction

one object comes close to another object

causes electrons to be rearranged on the  
second object

# STATIC ELECTRICITY

The buildup of electric charges on an object

Can produce electrical discharge