

Name: _____

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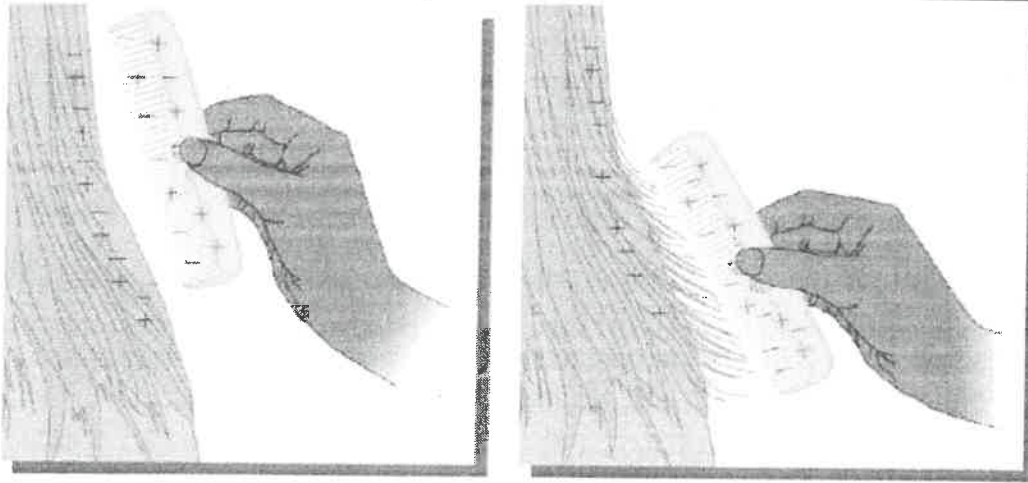
Science 9 Physics Unit

7.1 Static charge: pg 248- 251

_____ is an electrical charge that is held in one place.

When do we experience static charge?

- _____ - Often encountered in daily life when materials rub against one another and transfer charge.
 - o One material _____ electrons while the other _____ electrons



Positive and Negative charges:

All matter is made up of particles called _____

- The centre of the atom (the nucleus) contains protons _____ and neutrons _____
- _____
- Surrounding the nucleus are electrons _____

_____ a solid material, electrons can be added or removed from that material

- _____ = positively charged object
- _____ = negatively charged object

Insulators and conductors



Fig 7.4A Charges on insulator



Fig 7.4B Charges on conductor

Electrical _____: Solid materials that _____ electrons (charges) to move easily

Examples: _____

- ONLY insulators are good at retaining static charge

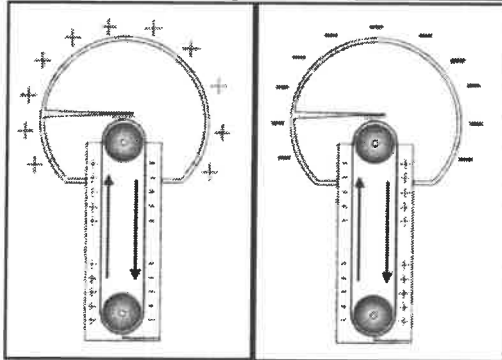
Electrical _____ - Solid materials that **allow** electrons to travel freely

Example: _____

Charge is measured in **Coulomb (C)**

- One coulomb = 6.25×10^{18} electrons (or 6 250 000 000 000 000)

So... how can we generate _____ ?



_____ use friction to produce a large amount of static charge (see page 253)

- As a belt rapidly moves over rollers, the contact between the rollers and belt results in a _____
- The moving belt produces static charge on the metal dome – the charge resulting on the dome depends on the material used in the VDG belt and rollers

Applications and Dangers



Static charge uses in our daily life – _____ can clean air, _____ automobiles, objects can be held with the help of _____, plastic wrap, and photocopiers
 Static charge can also be dangerous – _____ of charge can cause a serious shock, explosions or fires.

- When pumping gasoline, objects should be _____ (connected to the earth so that static charge is discharged into the earth) to avoid explosion

What is a dangerous, natural source of Electricity?

- _____ – buildings can be protected with the help of a _____.

Lightning in some indigenous cultures is believed to be created by the **Thunderbird**. For the Sumas First Nation's people, it is believed that a Shaman confronted the Thunderbird and was transformed to stone which was split by lightning. The Cultural significance of the stone is so great that it has protected the land that it sits on from development.