Lesson 1: Static Electricity - pages 174 - 185

ELECTRICITY AND MAGNETISM – CHAPTER 4

Two Kinds of Charges

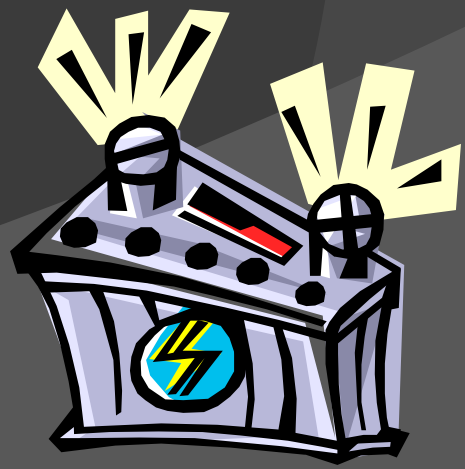
- Read pages 174 - 179
- Matter is made of particles that have _____ _____. Particles of matter also have a property called _____.
- A particle's charge can be:
- _____
- _____
- _____
- Matter in an object normally has a(n)_____ _____ number of positive and negative charges. This is called being _____ .

Two Kinds of Charges

- Read pages 174 - 179
- Matter is made of particles that have **mass and volume.**
- Particles of matter also have a property called **electric charge.**
- A particle's charge can be:
- **Positive (+)**
- **Negative (-)**
- **No charge at all**
- Matter in an object normally has a(n) **equal** _____ number of positive and negative charges. This is called being **neutral.**

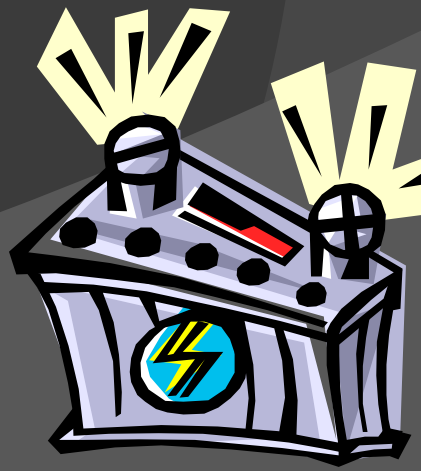
Two Kinds of Charges

- Particles of matter can be moved from one object to another. One way this can be done is by _____ ____ the objects together. This causes negative particles to move from one object to another. This results in the number of positive charges in matter to be _____ _____from the number of negative charges. This is called a _____.
- A charge is a measure of the _____ _____ _____ _____ _____ _____.
- This charge that stays on the object and does not move is called _____.
- **What are the two types of charges in matter**?
- _____
- _____



Two Kinds of Charges

- Particles of matter can be moved from one object to another. One way this can be done is by **rubbing** the objects together. This causes negative particles to move from one object to another. This results in the number of positive charges in matter to be **different** from the number of negative charges. This is called a **charge.**
- A charge is a measure of the **different number of positive and negative particles.**
- This charge that stays on the object and does not move is called
- **static electricity.**
- **What are the two types of charges in matter**?
- **Negative and positive charges are two types of charges in matter.**



Separating Charges

- Read pages 180 - 181
- Most of the time objects do not have a charge. They are said to be _____. To change the charge of matter you must separate the positive and negative charges. You can do this by _____. Rubbing pulls negative objects off one object to another. Rubbing causes only _____ _____ to move this way. This is called a _____ _____

Separating Charges

- Read pages 180 - 181
- Most of the time objects do not have a charge. They are said to be **neutral.** To change the charge of matter you must separate the positive and negative charges. You can do this by **rubbing objects together.** Rubbing pulls negative objects off one object to another. Rubbing causes only **negative charges** to move this way. This is called a **static charge.**

Separating Charges

- Examples of actions that cause negative charges to occur are:
- _____
- _____
- **What kind of charges move to make a static charge?**
- _____

Separating Charges

- Examples of actions that cause negative charges to occur are:
- **Comb drying your hair**
- **Clothes drying in a dryer**
- **What kind of charges move to make a static charge?**
- **Negative charges make a static charge.**

Electric Forces

- Read pages 182 - 183
- When objects are charged, they have a push or pull on one another called an _____ ___.
- An electric force causes two objects with _____ to attract each other. (Attract: _____ _____)

Electric Forces

- Read pages 182 - 183
- When objects are charged they have a push or pull on one another called an **electric force.**
- An electric force causes two objects with **opposite charge** to attract each other. (Attract: **pull toward each other** ___)

Electric Forces

- An electric force causes two objects with the _____charges (same) to repel each other. (Repel: _____ _____)
- The space around matter where an electrical force occurs is called an
- _____.
- **What is an electric field?**
- _____ _____ _____

Electric Forces

- An electric force causes two objects with the **like charges** (same) to
- repel each other. (Repel: **to push away each other**)
- The space around matter where an electrical force occurs is called an **electrical field.**
- **What is an electric field?**
- **The space where electric forces occur around an object is an electric field.**

Lesson Review

- 1. Draw and complete a graphic organizer to show how changes affect particles.
  - An object with a negative charge is near an object with a positive charge - - - - the objects attract.
- 2. Write two sentences that tell what the lesson was mainly about.
  - When the electric charges in matter separate, the matter can display electric behavior. The like charges repel, and unlike charges attract.

- 3. If you rub a balloon on a wool sweater, the balloon will stick to the wool. What causes this to happen?
  - The balloon becomes charged. When the balloon is brought near the wool sweater, it repels similar charges and attracts opposite charges. The balloon is then attracted to the opposite charges.

- 4. Write a sentence that explains how charges cause static electricity.