

ELECTRICITY AND MAGNETISM UNIT ORGANIZER

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STANDARDS FOR ACHIEVEMENT AND PERFORMANCE:

1. Understand how magnets work at the molecular level.
2. Understand the nature of magnetic fields.
3. Explain the Earth's magnetic field.
4. Describe how static electric fields form.
5. Know the difference between series and parallel circuits.
6. Describe how magnetism and electricity are related.
7. Track electrical energy from production to use in the home.
8. Describe vacuum tubes and semi-conductors and their uses.

ASSESSMENT:

1. Magnetism lab.
2. Magnetism worksheets.
3. Conduction lab.
4. Electric circuits lab.
5. Resistance lab.
6. Electromagnetism worksheets.
7. Electromagnetic lab.
8. Induction lab.
9. Electricity and Magnetism test.

CORE KNOWLEDGE SEQUENCE:

1. Basic electrical terms and concepts.
2. Electricity is the flow of electrons.
3. Static electricity: a build up of electric charge.
4. Flowing electricity: potential (volts), current (amperes), and resistance (Ohms).
5. Earth's magnetic field: cause and use.
6. Moving magnetic fields induce an electrical current. Moving electrical currents produce a magnetic field.
7. Waves and electromagnetic radiation.

COLORADO STATE STANDARDS:

1. Compare series and parallel circuits.
2. Use various materials in a simple circuit, show the difference between conductors and insulators and compare the efficiency of electrical conductors.