Megan Gemuenden

Diana Fenton

Education 323

Physical Science Resources

Websites:

1. Newton's Law Review
    a. Short Description: YouTube video provides 11 minute summary of Newton's Laws of Motion and Forces.
    b. Link: https://www.youtube.com/watch?v=NYVMlmL0BPQ
2. Sound Waves
    a. Short Description: Students first view a short clip, "What are Sound Waves?" and then take short quiz on the film content. Students learn about definitions, types, and uses. Then, as an added bonus, course material is also provided with further information for teacher scaffolding and instruction.
    b. Link: http://study.com/academy/lesson/what-are-sound-waves-definition-types-uses.html
3. Parallel Circuits
    a. Short Description: Definitions and Concepts are provided to students through the short video lesson which describes parallel circuits as pathways.
    b. Link: http://study.com/academy/lesson/parallel-circuits.html
4. Understanding Magnetism Documentary
    a. Short Description: Students will learn the history of magnetism as well we practical applications of magnetism throughout their everyday lives.

b. Link: https://www.youtube.com/watch?v=caNlo9po7ig

5. Chemical vs. Physical Changes in Matter
    a. Short Description: This website provides descriptive explanations, imagines, definition links, and helpful diagrams to teach children about physical change vs. chemical change in matter. This website would be a great opportunity for partner research.
    b. Link: http://www.chem4kids.com/files/matter_chemphys.html

Apps/Virtual Labs:

1. The JASON Project. Digital Lab: Coaster Creator.
    a. Short Description: Students use understanding of energy transfer to design a rollercoaster that has enough kinetic energy to complete a full run. Students will also use understanding of energy loss to design a rollercoaster that dissipates enough energy (through friction) to stop safely at the end of its run. Students will first learn how to create a "Super Coaster" and then they will build their own roller coaster in accordance with their understanding of energy.
    b. Link:http://content3.jason.org/resource_content/content/digitallab/4859/misc_content/public/coaster.html
2. Kids' Learning with NCES Zone: "Create a Graph"
    a. Short Description: Students can create a graph reflecting their results of their "Magnetism" lab. The "Create a Graph" portal includes an explanation of how to create a graph and how to use the program effectively.
    b. Link: https://nces.ed.gov/nceskids/createagraph/

3. Thermal Lab: Thermal Conductors and Insulators Online Experiment
    a. Short Description: Students build scientific inquiry skills with interactive online science experiment. After watching a short introductory animation, students perform an online experiment to test four materials to find which one is the best insulator.
    b. Link: http://bpes.bp.com/primary-resources/science/ages-7-to-9/materials/thermal-conductors-and-insulators-online-experiment/
4. Energy Skate Park Simulation (Virtual Lab)
    a. Short Description: Students will learn how to navigate the "energy skate park simulation" to better understand energy transfer. This simulation is very similar to the coaster lab.
    b. Link: https://phet.colorado.edu/en/simulation/energy-skate-park
5. Circuit Construction Simulation (Virtual Lab)
    a. Short Description: Students will interact with virtual circuits by manipulating different lightbulbs and batteries.
    b. Link: https://phet.colorado.edu/en/simulation/legacy/circuit-construction-kit-dc-virtual-lab

Lessons:

1. Oobleck Activity:
    a. Short Description: Students will discover "properties" of playdough and will be able to identify the different states of matter including liquid, solid, and gas.
    b. Link: http://beyondthechalkboard.com/activities/oobleck/

2. Making Butter Activity:
    a. Short Description: Students will experiment in a hands on activity learning how milk can change to butter: a liquid changes to a solid. This specifically teaches students about changes in matter.
    b. Link: http://www.beyondthechalkboard.com/activities/making-butter/
3. States of Water
    a. Short Description: Students will learn the effects of heating and cooling on the different states of water: frozen, liquid, and steam. Students will record the temperatures of frozen ice in a freezer as well as room temperature water and boiling water on a hot plate.
    b. Link: http://www.beaconlearningcenter.com/Lessons/Lesson.asp?ID=1196
4. Magnets 1: Magnetic Pick-Ups
    a. Short Description: Students will experiment with different types of objects including paper clips, card board, plastic chips, washers, etc. to see which objects are magnetic.
    b. Link: http://sciencenetlinks.com/lessons/magnets-1-magnetic-pick-ups/
5. Wonderful Waves
    a. Short Description: Students will learn how to create a wave model using two different types of simple models.
    b. Link: http://sciencenetlinks.com/lessons/wonderful-waves/

Steam Lesson: Rescue Rockets STEAM Challenge

1. Link: http://bpes.bp.com/media/435164/usc-rescue_rockets.pdf