

Lesson Plan

Electromagnetic Radiation

Summary

1. **Subjects:** Electromagnetic waves, electromagnetic induction, piezoelectric effect
2. **Topic or Unit of Study:** Science
3. **Grade/Level:** High School
4. **Objectives(Ca state standard):**
 - a. Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.
5. **Time Allotment:** 45-60 minutes (min)
 - a. Anticipatory set: 2 min
 - b. Instruction: 10 min
 - c. Assembly of experimental equipment: 15 min
 - d. Experiment: 5 min
 - e. Check for understanding: 10 min
 - f. Closing : 5 min

Tip: Think about how you will INSPIRE your students and consider what you want them to take away from today's lesson plan.

Materials & Tools

- a. **Materials:** Piezoelectric clicker (teachers should disassemble used barbecue lighters to obtain), aluminum foil, paper towel tube/toilet paper tube, wire coat hanger, neon bulb ([Neon Bulb](#)), and 3d printed parts.
- b. **Tools:** wire cutters, pliers, 3d printer, computer with slicer software (Cura, Slic3r, Repetier, MakerBot Print).