Demonstration Document

Explanation:

A part of the 4th grade SEEd curriculum is for the students to learn about wave patterns. In section 4.3.1 it states that the SEEd learning objective is to "describe the regular patterns of waves. Emphasize patterns in terms of amplitude and wavelength" Also in section and 4.3.2 the purpose is to help students understand "how visible light waves reflected from objects enter the eye causing objects to be seen." (SEEd- Grade 4). A perfect experiment to help students learn about light waves would be the colored ice box experiment. The purpose of this experiment is to see what colors absorb the most heat. According to the *Do Different Colors Absorb Heat Better? - Activity* (2020) by performing this experiment, students learn that "The sun emits energy in the form of electromagnetic waves. We see part of the electromagnetic wave as light and we feel part of it as warmth [and that] darker colors absorb more sunlight than lighter colors…"

Materials:

The quantity of materials that are needed are dependent upon the size of the class and the groups that the kids are separated into. You will need 4-6 pieces of differently colored paper, 4-6 ice cubes, scissors (one per student), 1 roll of tape (per group), 1 box template(per group), 1 timer (per group), and 1 lamp (per group). These materials can be obtained through most retail stores in the school supply sections such as Walmart, Target, Hobby Lobby, Michaels, ect…

Instructions:

a. Cut out the template provided.
b. Trace the template onto each piece of paper and then cut them all out.
c. Fold the Box along the lines.
d. Tape the box in place.
e. Set up the lamp or bring the boxes and ice outside where the sun can shine on them.
f. Place the equally sized ice cubes in the blocks. (if a lamp is used, place them equidistant from the lamp).
g. Start your timer and record how long it takes each ice cube to melt.

Safety precautions:

Make sure that the scissors are safe for students to use, and avoid touching the lamp and lightbulb at the top since they do get hot in this experiment.

Disposal:

Make sure that scissors are put back into the bin you got them from as well as the tape. Unplug the lamp and wrap the cord around the lamp (if the lamp was used instead of direct sunlight). Dispose of paper and ice in the trash can. If needed, wipe down the table to clean up excess water.

Citations:

Do Different Colors Absorb Heat Better? - Activity. (2020, September 09). Retrieved September 17, 2020, from https://www.teachengineering.org/activities/view/colors_absorb_heat_better

SEEd- Grade 4. (n.d.). Retrieved September 17, 2020, from https://www.uen.org/core/core.do?courseNum=3041