

DISCOVER Science at Home!

Does color affect temperature?

Materials:

Six ice cubes (same size and shape)
Six sheets of paper (white, black and four other colors)
Access to direct sunlight
Stopwatch (optional)

Procedure:

- 1.) Lay each color of paper in the sunlight.
- 2.) Make a prediction about what will happen to the ice cubes in the light.
- 3.) Place one ice cube on each paper.
- 4.) Record experiment start time.
- 5.) Make a hypothesis about which ice cube will melt the fastest and which will melt the slowest. Predict how long it will take for both occurrences.
- 6.) Record how long it takes for the first ice cube to melt.
- 7.) Observe until the last ice cube melts. Record time when the last ice cube melts.

The Science Behind It:

The black paper absorbs the most light-waves of the samples and so it absorbs heat more quickly than the other colors. The white paper melts the slowest because it reflects most of the light waves. As for the other colors, they absorb all light waves except for the one light wave they reflect, which is the color that is visible to us.

Questions to Investigate:

- What state of matter are the ice cubes and papers?
- What colors are the papers?
- What happens when the ice begins to melt?
- Which ice cube melted the fastest?
- Which ice cube melted the slowest?
- How does color effect the melting rate?
- Did the outcome of the experiment match your hypothesis?



Next Generation Science Standards

2-PS4-3. Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light..