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Radiant Colors

The objective of this project is to determine how different colors (red, blue, black, yellow, white) absorb and re-emit radiant energy, and to calculate the rate of energy flow.

The temperatures of the different colored squares taken by the infrared thermometer are used to analyze the data. The temperatures are put through a series of equations called the Stephan-Boltzmann equations, which are used to discover how much power (watts and Joules/second) is being emitted and re-emitted by objects. The results are put in a spread sheet and then graphed.

The power of the squares is compared to each other. The black had the highest rate of energy emission and re-emission, all though blue was within .1 of the power of the black. Next to white, yellow was the lowest, because white does not emit any power. The colors of the highest and lowest rate of emitting and re-emitting are recorded in the conclusion.

Radiant energy is everywhere and affects everyone. When one wears a shirt, if it is light colored it will not warm up as fast as a black shirt because of the color and photons that go through it and give off infrared waves as heat. When architects build they have to take into consideration the amount radiation that the building with absorb. They use building materials that will reflect the radiation. They build radiant barriers that consist of airspace with different types of materials that restrict transfer of infrared waves.