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Black Roof, White Roof, Which One Is the Right Roof?

The purpose of this experiment was to determine what color will keep the inside temperature of a building cooler, black or white? According to my research I predicted that white would keep the inside temperature of a building cooler. I became interested in this idea when my family and I watched a documentary called carbonation.

Three white styrofoam coolers with lids were used in my experiment. The first cooler's lid was white and had no paint. The second lid was painted black and the third was painted white. Each cooler was placed 18" under a heat lamp for 45 minutes with the lids on. I recorded the temperature inside each cooler before and after the heating time.

I started in a 70 degree room. For trial 1 the final inside temperature of the black roofed box 35°C, the white roofed box was 28°C and the plain roofed box was 25°C. For the 2nd trial the black roofed box was 34°C, the white roofed box was and 28°C and the plain roofed box was 25°C.

I learned that the black roof made the inside temperature of the box warmer than the white roof made the inside temperature of the box, and overall the plain roof kept the inside temperature the coolest. This would save air conditioning or heat, therefore saving energy.