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*Natural Materials for Insulation vs. Fiberglass*

The purpose of this experiment was to find which natural material performed the best as insulation as opposed to fiberglass. The project involved building a specific box within a box, insulating the space between the boxes, putting it in the freezer, heating the inside box, turning off the heat source, and recording the temperature of the freezer and inside box every minute for ten minutes. Three ten minute trials for each material were completed. The data was averaged across the three trials and showed that the wool had an average temperature delta loss of 13 degrees Celsius, for fiberglass, the average temperature delta loss was 14.2 degrees Celsius, for down it was 19.3 degrees Celsius, for dirt it was 25.6 degrees Celsius, for newspaper it was 26.7 degrees Celsius, for pine straw it was 26.9 degrees Celsius, and the average temperature delta for no insulation was 31.2 degrees Celsius. The conclusion is wool was the best insulator and that pine straw was the poorest. Pine straw did provide a significant amount of insulation because it had a lower average temperature loss than the no insulation test. Wool could be used in jackets and sleeping bags because it is a good insulator, but isn't available in large enough quantities to insulate a house and is too expensive. Pine straw and dirt would be good for insulation in houses, since both materials are more readily available and less expensive, a thicker quantity could be used to improve performance.