

Better Than a Door?

Windows can be great to look out of and can provide wonderful natural sunlight into rooms during sunny days but on cold cloudy days they can let heat escape from a room up to 9 times faster than brick.

Things to Get

- Clear plastic sheeting (from hardware stores)
- Ruler
- Scissors
- Adhesive tape
- Two cardboard boxes (corrugated cardboard works best)
- Four thermometers

Things to Do

1. Cut a window in each of the boxes which is about 5 x 5 cm.
2. Cover one of the windows with the plastic sheeting on the outside and the window in the other box with plastic on both the inside and outside.
3. Make a small hole in the top of both of the boxes and carefully insert a thermometer into each box.
4. Tape a second thermometer to the outside of each box.
5. Turn the boxes upside down and place them with the windows facing the sun, or a solar simulator.
6. Record the temperatures inside the boxes two minutes for ten minutes.

Results

Box with one layer of plastic

Time

Inside
Temp

Outside
Temp

Box with two layers of plastic

Time						
Inside Temp						
Outside Temp						

The box with the hottest temperature inside was:

Would you expect that windows that are double glazed would be as effective in winter as they are in summer? Why?

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Extension Activities

Using the boxes that you used in the Better than a Door? activity, try testing the influence of curtains by covering the windows with material. You can test both light and dark coloured material on both of the windows to see the effect that good curtains has on the transfer of heat through windows.

Single Glazing, Dark Material

Time						
Inside Temp						
Outside Temp						

Single Glazing, Light Material

Time
 Inside Temp
 Outside Temp

Double Glazing, Dark Material

Time						
Inside Temp						
Outside Temp						

Double Glazing, Light Material

Time						
Inside Temp						
Outside Temp						

The box with the hottest temperature inside was:

The box with the coolest temperature inside was:

If you were building a new house in Western Australia, what type of windows and curtains would you use? Why?

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