LO: To understand insulation and plan a fair test.

HOM: Persisting

Starter:

I have bread in the freezer that needs to be defrosted quickly. I have heard that if you place them on different surfaces that can happen.

What kinds of surfaces in my kitchen could I put my bread on to make it defrost?

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I have wooden breadboards and metal baking trays.

We can replicate this using ice cubes.

Prediction:

Which surface will cause the ice cube to melt faster and why?

**THE REST OF THIS LESSON REQUIRES YOU TO MELT ICE CUBES – PLEASE SEEK ADULT PERMISSION TO COMPLETE THIS EXPERIMENT.**

(If you do not have ice cubes or your adult does not want you to complete the investigation then look at the bottom of page 3 for instructions).

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| **Time taken to melt** | **Observations** |
| **Wooden Surface** |  |  |
| **Metal Surface** |  |  |

On which surface did the ice cube melt the quickest?

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Why do you think this?

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Metal is a thermal conductor so the heat is able to pass through the metal much more easily to then melt the ice cube.

Watch a mountaineering compilation video i.e. <http://www.youtube.com/watch?v=3ys0PX2qgPY&hd=1>

You are going to plan an experiment to see what material would be best for keeping mountaineers warm whilst climbing some of the world’s highest summits.

Link back to the ice cube experiment – a metal jacket would allow the cold to pass through to your body really easily but why would a wooden jacket not be an ideal choice of material?

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How will we ensure your test is fair?

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You may wish to conduct this experiment.

If not, you can research the best materials for insulating and write your letter based on your findings.

Using the materials that you find in your home – what would be most suitable for a jacket?

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| Materials | Length of time to melt |
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What material have you found is the best for insulating?

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Findings:

You will be writing to an outdoor clothing company to give their results.

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