

Jet Engines, Baked Alaskas and Materials Science Teacher's sheet

Some cooking tips

The activity sheet provided assumes you are going to be making a fairly large Baked Alaska (sponge is 20cm in diameter). You can split your class into groups and have each group work on a different element (e.g. 2 kids on the ice cream, 2 kids on the sponge, 2 kids on the meringue), and you can plan to make as many Baked Alaska as you think are appropriate for the size of your class. Alternatively, you can have each kid (or small group) to make a smaller version of the Baked Alaska. If making or sourcing a sponge is too difficult, you can simplify the activity by simply coating a simple stick ice cream with meringue, like we do in the video. You would have to find a way of holding the sticks upright.

Some activity tips

1. Make a smaller version of the Baked Alaska (e.g. 10cm in diameter) and place it in the oven alongside ice cream sitting on its own in a tray, to show that it is really the sponge and meringue isolating the ice cream and allowing it to stay frozen
2. Experiment with time. Make a number of smaller Baked Alaska and keep them in the oven for different lengths of time. See how long one can be left in the oven before the ice cream starts to melt
3. Change whipping time. Whip the egg whites by different amounts, and see whether it makes a difference in their insulating capacity.
4. Try different cooking tools: oven, grill, microwave and blowtorch. Which one works best? Which one does not work? Why?
5. Leave a sizeable hole in the meringue before placing the Baked Alaska in the oven. What happens to the ice cream? This is akin to what would happen to a jet engine turbine blade should bits of its ceramic coating fall off - it happens sometimes!
6. Experiment with different meringue thicknesses. What is the best thickness? Why?