Build a Better Lunchbox

1
Here’s what you need to build a better lunchbox!
• Container (lunchbox, cardboard box, bag, etc.)
• Insulation (i.e., newspaper, cotton balls, packing peanuts, foam, bubble packaging, etc.)
• Plastic bag that closes tightly
• Something frozen (i.e., ice pop, ice cube, etc.)

2
Choose your lunchbox
Use any of the suggested containers. Or try another one you think will work.
3 Insulate your lunchbox

- Remember, materials don’t insulate! It’s the AIR that’s trapped inside a material that insulates.
- Cover the bottom half of the lunchbox with insulation.

4 Put the ice pop inside

5 Cover the ice pop

- Crumple and layer the insulation in a way that traps a lot of air.

6 Add more insulation

- What materials will trap the most air to keep the heat from getting to the ice pop?
8
Wait 30 minutes
Then, open up.

9
Still frozen?
How’d your lunchbox do? Is your ice pop still frozen?
Yes? Then eat your treat. If not, try again!

10
Did you know?
It’s all about stopping heat. A good insulator keeps heat from moving. For example, to keep something cold, an insulator stops heat from entering. To keep something hot, an insulator stops heat from leaving. And air is one of the best insulators around. Think bubble packaging. All that trapped air stops heat from passing through. Foam, fleece, and even crumpled paper trap air, too. Hey, how about a winter coat made out of crumpled paper!
Try this next!

• **Build an even better lunchbox.** Use your materials differently to trap more air. Or use different kinds of materials. See if you can get less melting in 30 minutes.

• **Go for longer.** Build a lunchbox that can keep something frozen for an hour. It helps to pre-cool the insulation and to keep the lunchbox away from serious heat.