ENGINEERING
CHALLENGE

18

BURNING PUDDING

THE
JAMES
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FOUNDATION

BURNING PUDDING

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Designed by Hannah,
Design engineer at Dyson

The brief

Use pudding to find out how the surface area of fuel affects how it burns.

The method

1. Connect the hosepipe to the base of the funnel.
2. Light the Bunsen burner and set it to full (the blue flame).
3. Put a small amount of the pudding powder into the top of the funnel.
4. Wearing goggles, and staying clear of the flame, hold the funnel next to the Bunsen burner with the opening facing the flame.
5. Blow hard into the end of the hosepipe.

Materials

- Pudding powder
- A funnel
- 1m length of hosepipe
- Bunsen burner (with adult supervision)
- Goggles

This activity must be done in a science lab or large open space, with adult supervision.

How does it work?

Pudding powder burns rapidly because it has a high total surface area to volume ratio, which allows oxygen in the air to come into contact with the fuel easily. When you have a large lump of wood, the oxygen can only touch the outside and so it burns from the outside in. If you turned that lump of wood into sawdust, the surface area would be greatly increased. This increase in surface area allows the oxygen to reach more places at once, so the fuel burns more quickly.