

SCIENCE
CHALLENGE

04

BALLOON KEBABS



THE
JAMES
DYSON
FOUNDATION

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Designed by Phil,
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The brief

Push a wooden skewer through a balloon without popping it, creating a “balloon kebab”.

The method

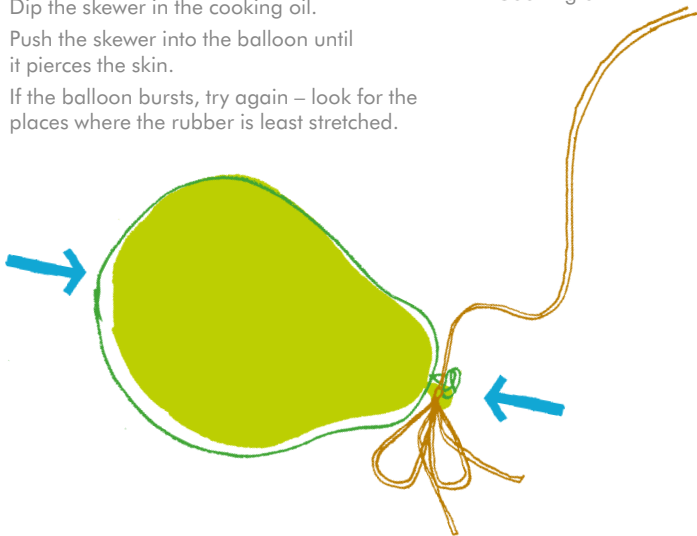
1. Dip the skewer in the cooking oil.
2. Push the skewer into the balloon until it pierces the skin.
3. If the balloon bursts, try again – look for the places where the rubber is least stretched.

Materials

.....
A balloon inflated
until $\frac{3}{4}$ full

.....
A wooden skewer

.....
Cooking oil



How does it work?

Most of the balloon is stretched evenly, but there are two points where the rubber is least stretched. The tied section and the darker patch at the opposite side of the balloon have the lowest surface tension. Most of the balloon is under high tension, so attempting to push the skewer through just makes the balloon pop. At the low tension sections it is possible to make a small hole without breaking the overall surface of the balloon.