



Gone with a bang

This paper and card banger activity is designed to show how energy can be transferred mechanically before being released as radiation and dissipating into the atmosphere. As the banger is brought down, the folded paper traps air so that it can't escape. The air pushes back on the paper, snapping it open so fast that it releases some of its energy as sound waves.

You will need

- Sheet of card
- Ruler
- Pencil
- Stapler
- Scissors
- Sheet of high-quality writing paper (not lightweight photocopying paper)

Steps

1

Fold the high-quality writing paper as shown in Figure 1 and then cut along a line 1 cm away from the fold (Figure 2) to produce a triangle (Figure 3). Fold over the 1-cm flap and then fold the resulting triangle of paper in half (Figure 4).

2

Move now to the card. Cut out a triangular shape from a piece of card (Figure 5) and fold it down the middle (Figure 6).

3

Staple the paper to the card (Figure 7).

4

Fold the banger as shown (Figure 8), hold it by the edge and then let it rip...

Analysis/ discussion

What caused the banger to bang?
(Clue: What happens if the banger is moved slowly through the air?)

E

H

E

R

G

U

Gone with a bang template

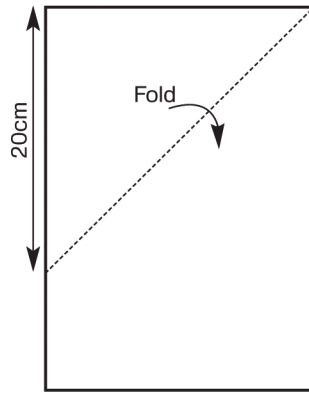


Figure 1

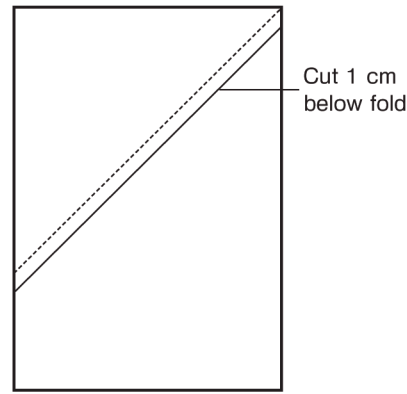


Figure 2

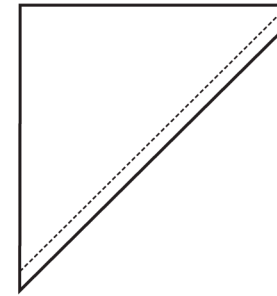


Figure 3

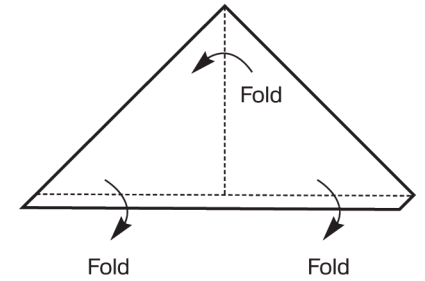


Figure 4

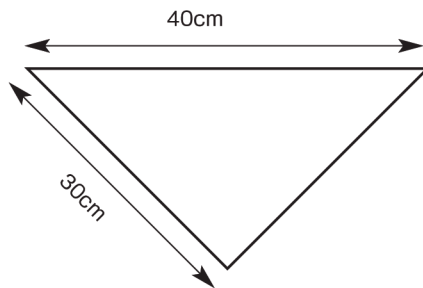


Figure 5

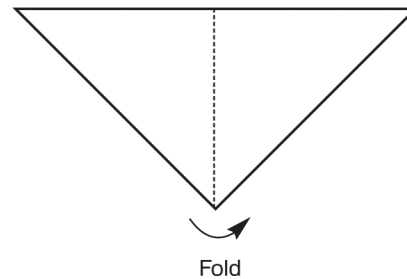


Figure 6

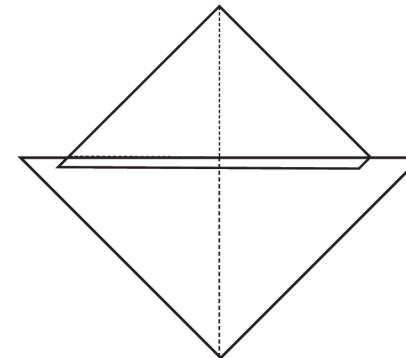


Figure 7

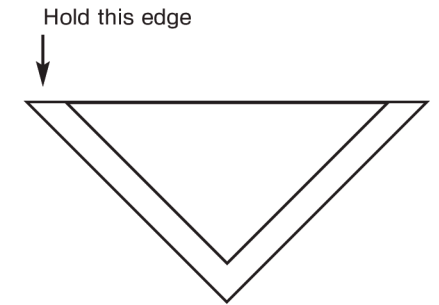


Figure 8