*Making a parachute*

Does the size of a parachute make a difference to how fast it falls?

|  |  |
| --- | --- |
| Apparatus  **• Piece of plastic • 10 g mass**  **• Scissors • Paper clips**  **• Metre rule • Stopclock**  **• Cotton thread • Calculator**  Method  **1** Cut out a square 60 cm  2 cm from a piece of plastic.  **2** Cut four pieces of cotton 30 cm long, and tie a paper clip to each one.  **3** Unbend the paper clips and push one through each corner of your plastic.  **4** Tie the other ends of the thread to your mass. Now your parachute is ready to test.  **5** Drop your parachute and time how long it takes to get to the ground. Write your result in the table below. |  |

**6** Drop the parachute twice more, then work out the mean time for your three drops. Make sure you drop it from the same height each time.

**7** Repeat steps 1 to 6 for smaller parachutes. The measurements you need are in the table.

Recording your results

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Size of** | **Time to fall (s)** | | | **Mean time to** |
| **parachute** | **1st drop** | **2nd drop** | **3rd drop** | **fall (s)** |
| 60 cm  60 cm |  |  |  |  |
| 50 cm  50 cm |  |  |  |  |
| 40 cm 40 cm |  |  |  |  |
| 30 cm  30 cm |  |  |  |  |

Find the mean by adding up all three results, then divide your answer by 3.

Considering your results/conclusions

Complete these sentences, using the words from the box.

**air area resistance slower**

Bigger parachutes fall \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than small ones. This is because they have more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than smaller ones. This is because they have a bigger \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

Evaluation

Why do you think you had to test each parachute three times?

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Is there any way that you could improve your experiment?

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