

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_



Your teacher may watch to see if you can:

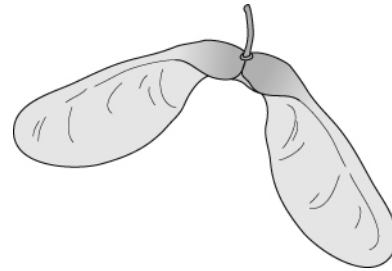
- follow instructions carefully to make spinners
- make accurate timings using a stop watch.

**Aim**

To find out how the lengths of the wings on a spinner affect the time it takes to fall.

**Introduction**

Sycamore maple trees have fruits shaped like wings. Two fruits are stuck together to form a double wing. The fruits spin as they fall from the trees, and this means that they take a longer time to fall. If they are in the air for a longer time, there is more chance that the wind will blow the fruits away from the parent tree. We can make a model of how these fruits spin using paper.



**Hypothesis**

The time taken for a model spinner to fall depends on the length of its 'wings'.

**Prediction**

1 Use the hypothesis to make a prediction. One way of doing this is to use 'If ... then ...'

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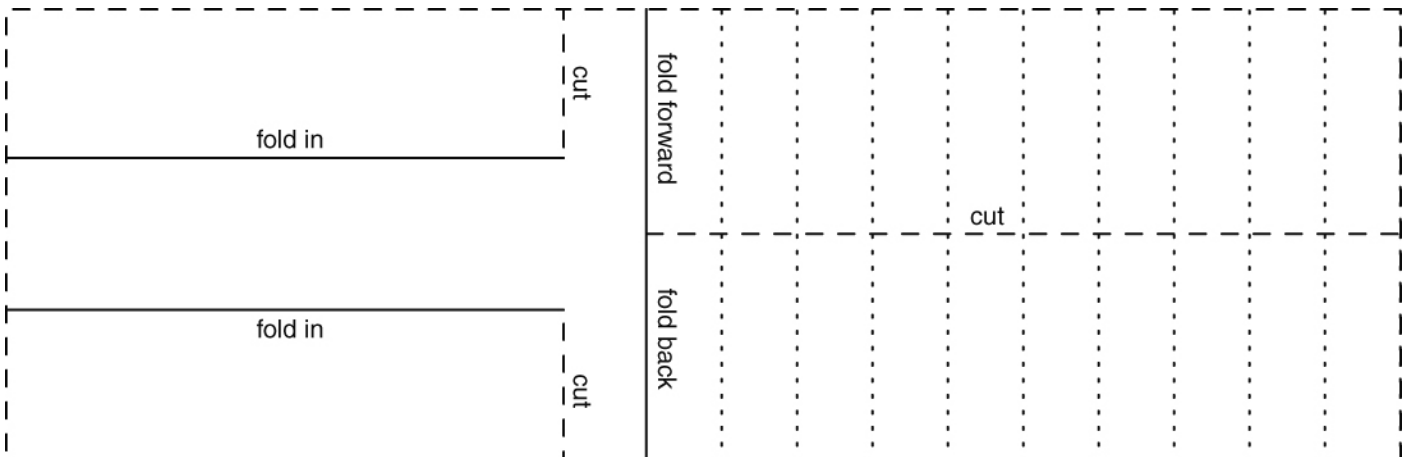
**Method**

**Apparatus**

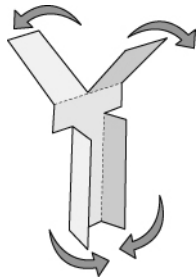
- piece of paper
- ruler
- scissors
- 2 paper clips or staples
- stopwatch

**!** Do not climb on furniture to drop your spinner.

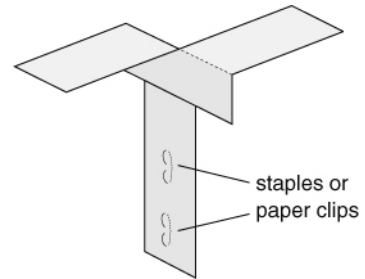
**A** Cut out the template below.



**B** Fold your spinner as shown.



**C** Fix it together with staples or paper clips.



**D** Measure out a set height from which to drop your spinner.

**E** Drop your spinner and use a stopwatch to time how long it takes to reach the ground. Do this twice more.

**F** Now cut 2 cm off the ends of each wing and repeat step **E**.

**G** Repeat step **F** until there are no wings left.

### Recording your results

**2** Fill in this table to show your results.

Length of wings	1st drop time (s)	2nd drop time (s)	3rd drop time (s)	Mean drop time (s)
10 cm				
8 cm				
6 cm				
4 cm				
2 cm				
0 cm				

### Considering your results/conclusions

**3** Do your results match your prediction? If not, how do they differ? \_\_\_\_\_

\_\_\_\_\_

**4** Why do you think you got the results you did? Use scientific reasons to explain them.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**5** What would be the problem if sycamore maple fruits had shorter 'wings'?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

#### I can...

- calculate means
- explain why sycamore maple fruits have wings.