

# LEARNING RESOURCE



## PAPER SPINNER PART 2

### MATERIALS

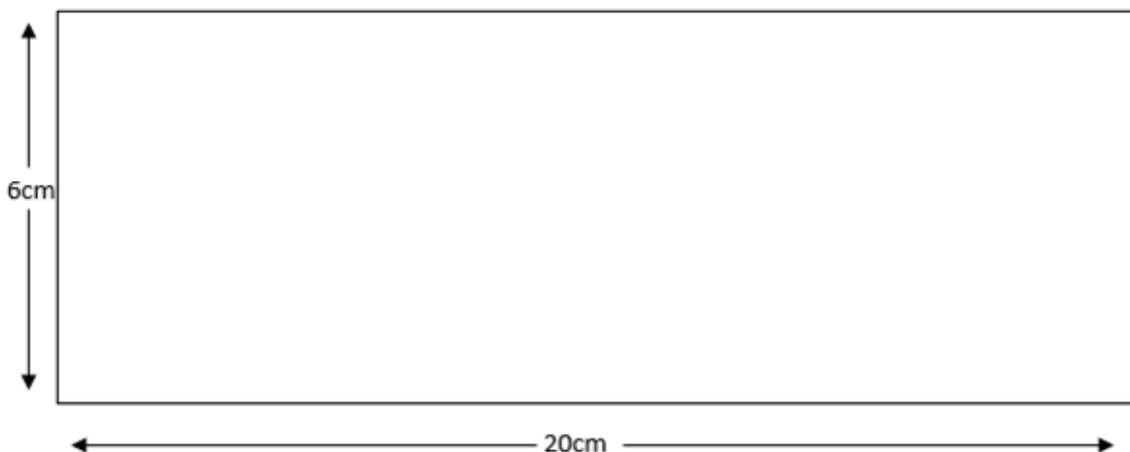
- Paper
- Pencil
- Ruler
- Paper Clips (optional)

### PREPERATION

- None required

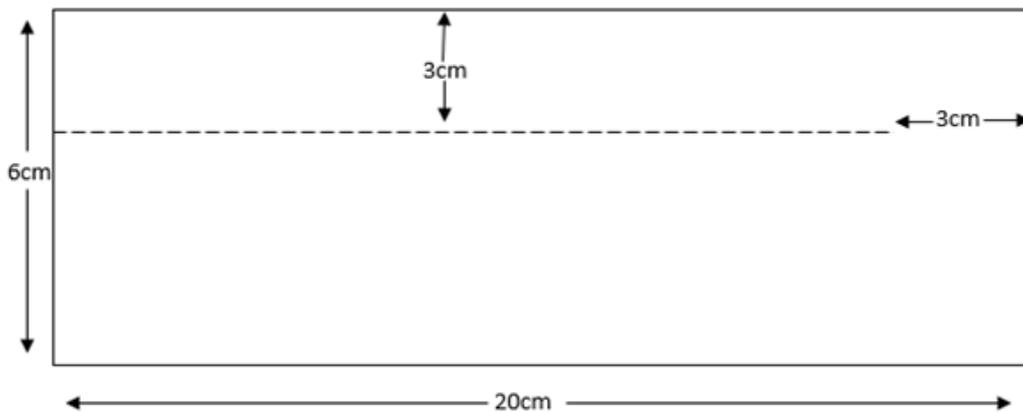
### INSTRUCTIONS

1. Get a piece of A4 paper and measure a strip, 6cm wide by 20cm long, then cut out.

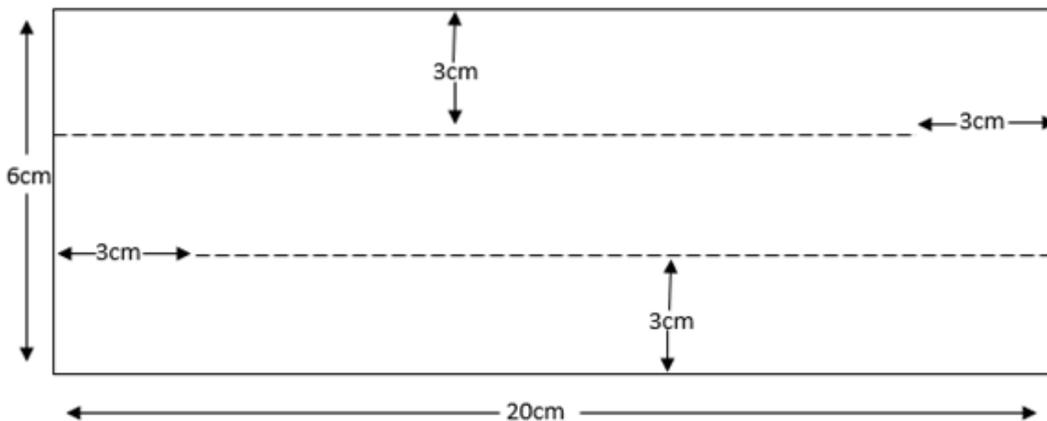


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2. Measure 3cm from the top and draw a line along the strip (left to right), stopping 3cm before the end.

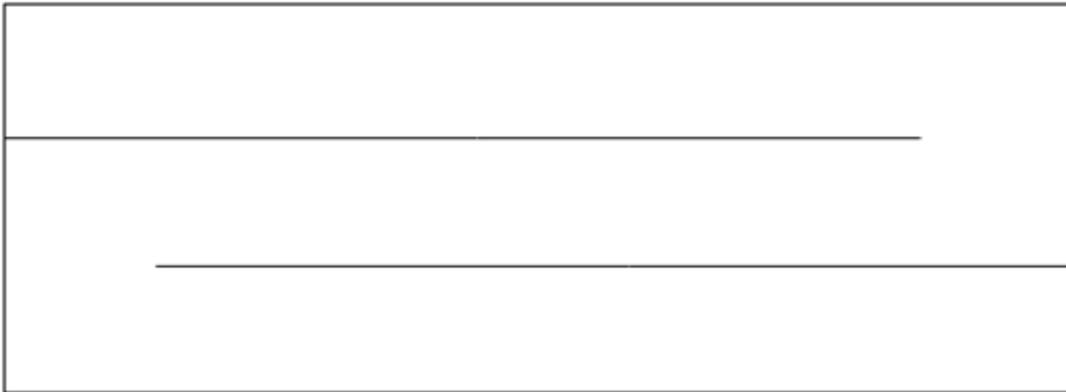


3. Do the same at the bottom of the strip, but this time draw the line right to left.

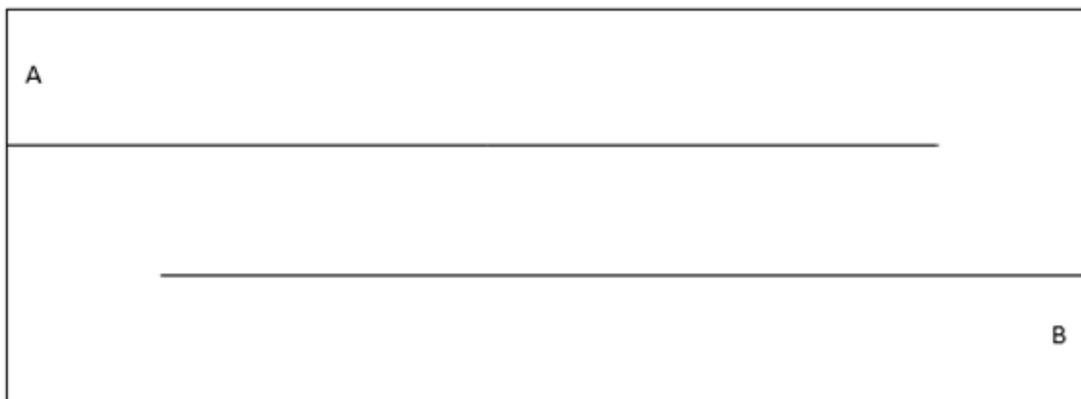


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4. Cut along the two lines you have just drawn.



5. Get hold of the loose ends (A and B), and paperclip together.



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6. Hold above your head, using finger and thumb, by the middle section, with the paperclips at the bottom and let go.

It should spiral to the ground like a sycamore seed. The greater the height that you drop it from, the more times it will spin.

## EXTENSION

- Can you change the way that your spinner works. Now that you have the basic plans for making a spinner can you think of things that you could change to make it work differently?
- Try to make the slowest spinner? What do you need to change?
- What would you need to do to make the fastest spinner?
- Does the size matter?
- Does the type of paper you use make any difference?
- What about the number of paperclips you use?
- Why not try making lots of different spinners and compare how they work?
- What can you do to make your tests fair?

## SCIENCE BEHIND THE SPINNER

Air is made from lots of tiny little things called molecules. We can't see them but if we wave our hands around we can feel them in the breeze that is created.

When we drop our paper spinners the bit in the middle at the bottom creates a centre of gravity, which means that it pulls the spinner down to the ground. In order to get to the ground the spinner has to push through all the air molecules. At the same time the air molecules want to move around all over the place, so when the propeller pushes into them, it gets in their way, so they push it out of their way and carry on moving. This is what makes our spinner spin.