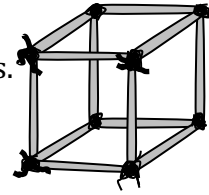
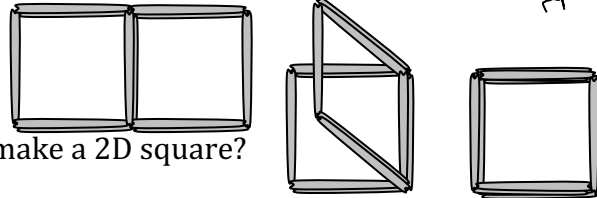


### COLLAPSIBLE CUBE

1. Make a 3D cube out of rolled paper sticks, tied together at the ends.  
 Push your cube gently down and sideways.  
 It will collapse into a 2D shape!



Can you collapse your cube into a 2D rectangle made of 2 squares?  
 Can you fold the rectangle over to make a 2D square?



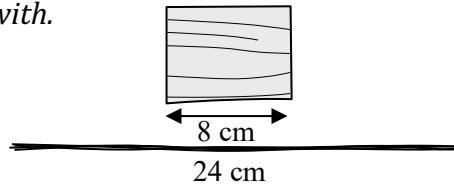
2. Find another 2D shape that you can collapse your 3D cube into.  
 Sketch your new 2D shape.  
 Does it have a mathematical name? Or can you describe it?
3. What other 2D shapes that can you make with your collapsible 3D cube?  
 Sketch each one you find, and name it or describe it carefully.

### HELP

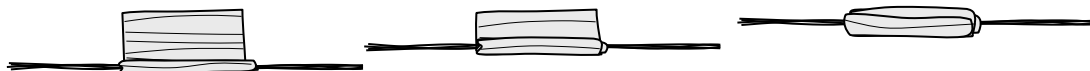
Follow the instructions below, or from this video: [https://youtu.be/ia\]6EitIGKU](https://youtu.be/ia]6EitIGKU) on how to make rolled paper sticks.

*You need: An old magazine or scrap paper to cut up (or you can use dried banana fibre); string; sticky tape; scissors or a blade to cut with.*

1. Cut a rectangle of paper, 8 cm long and about 6 cm wide.  
 Cut a length of string about 24 cm long.



2. Carefully roll the rectangle of paper around the string to make a stick.  
 Roll it as tightly as you can.



3. About 8 cm of string will hang out from each end of the stick.  
 Fasten the paper with sticky tape.



4. You have made your first paper stick!  
 Make more paper sticks.  
 How many will you need to make a cube?  
 (Each edge of the cube will need one paper stick.)



## **NEXT**

Think of a different 3D shape that you can make with paper sticks, all the same length.

Will it collapse into a 2D shape? Or will it be rigid? Or will it do something different?

*Before* you make your new 3D shape, try to visualise it and describe how it will behave.

Then check your predictions. Record what you find with sketches and words.

*Resources: An old magazine or scrap paper to cut up (or you can use dried banana fibre); string;*