

MATHEMATICS



Centroid

HOW TO CREATE YOUR ELEMENTS

STORAGE

The content of this box can fit in an envelope.

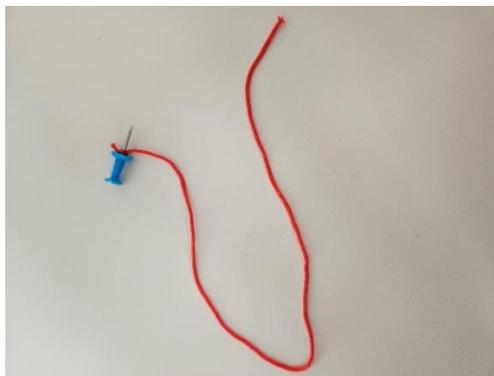
CRAFT THE ELEMENTS

A. Print the template

1. Print the template that you want to use on a ticker piece of paper (at least 160g). Alternatively, you can have the students draw a shape themselves.

B. Prepare the elements

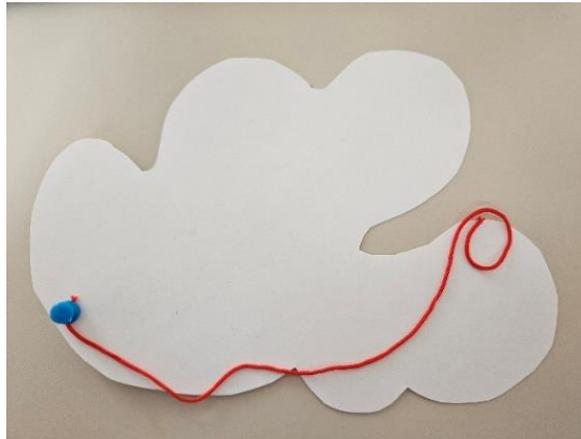
1. Cut out the shape.
2. Tie a piece of string around the pin. The experiment will be easier to carry out if you tie it around the needle.



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3. Push the pin through your object near the edge and make sure that it can hang freely on the pin. You can try waving it to see if it moves.



4. Pin the object to a cork board (or a piece of thicker cardboard if you don't have one), once again making sure that the object can move freely.



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5. Take a pencil and draw a line where the thread hangs.



6. Repeat steps 3,4 and 5 two more times, pushing the pin in different places so you get 3 different lines.
7. And you are done! The place where the lines intersect is the centroid. All that is left to do is put your finger on it and balance the object.

Note: If the lines don't intersect on the object, that means that the centroid is outside of it. This means that the object you are using is too "irregular", so there is no point in which the mass is evenly spread and, by extension, no place where you can balance the object.



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POTENTIAL ISSUES

It is relatively hard to draw the line on the exact place where the tread hangs, so we recommend that one student holds the thread on both ends, while another draws the line. If the lines are not drawn in the exact spot, it is not a big issue, as you will get a proximity of the centroid. You can tell the students to try moving their fingers around a bit and find the exact spot.



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