

# MATHEMATICS



## Centroid

### BOX NOTICE

Name of the activity	Centroid
Activity duration	1h
Material needed	Centroid box, Drawing pin, thread, pencil
Number of pupils involved (per box)	1

#### Step 1: Preparation

If you have read Adele's story to your students, print out the template on the second page of the storytelling element file for each one. The template can also be in black and white, or the students can draw it themselves.

Ask them to draw the shape they want, leaving "Adele asleep" in the middle.

#### Step 2: Storytelling

Read Adele's story to the students. Ask them if they think it would be possible to build a house like she did. You can also talk about if it would be wise to do so and if it would be possible to live in such a house.

#### Step 3: Manipulation

Tie a piece of thread around a Drawing pin. Depending on the number of students in your class, you can prepare more than one drawing pin. Have each student cut out



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the shape that they have. Put the pin through your object somewhere near the edge, and make sure that it can freely hang on the pin; if needed, widen the hole a bit. Pin the object to a corkboard (if you don't have one, you can improvise with a piece of thick cardboard) so that the thread is hanging over it. With a pen, mark the line that the thread is making over your object (to make it easier, you can use a ruler. Now repeat the process 2 more times on different edges of your object.

## Step 4: The centroid

The spot where the lines intersect is called the centroid, and it is also the centre of mass of the object. This means that the mass is evenly distributed in all directions, acting as if it were concentrated at that single point.

If you position your finger on that point, you can easily balance the object on the tip of your finger.

**Note:** Depending on the shape of the object, the centre of mass might be “outside” of the object (e.g. if you use the shape of Croatia).

