

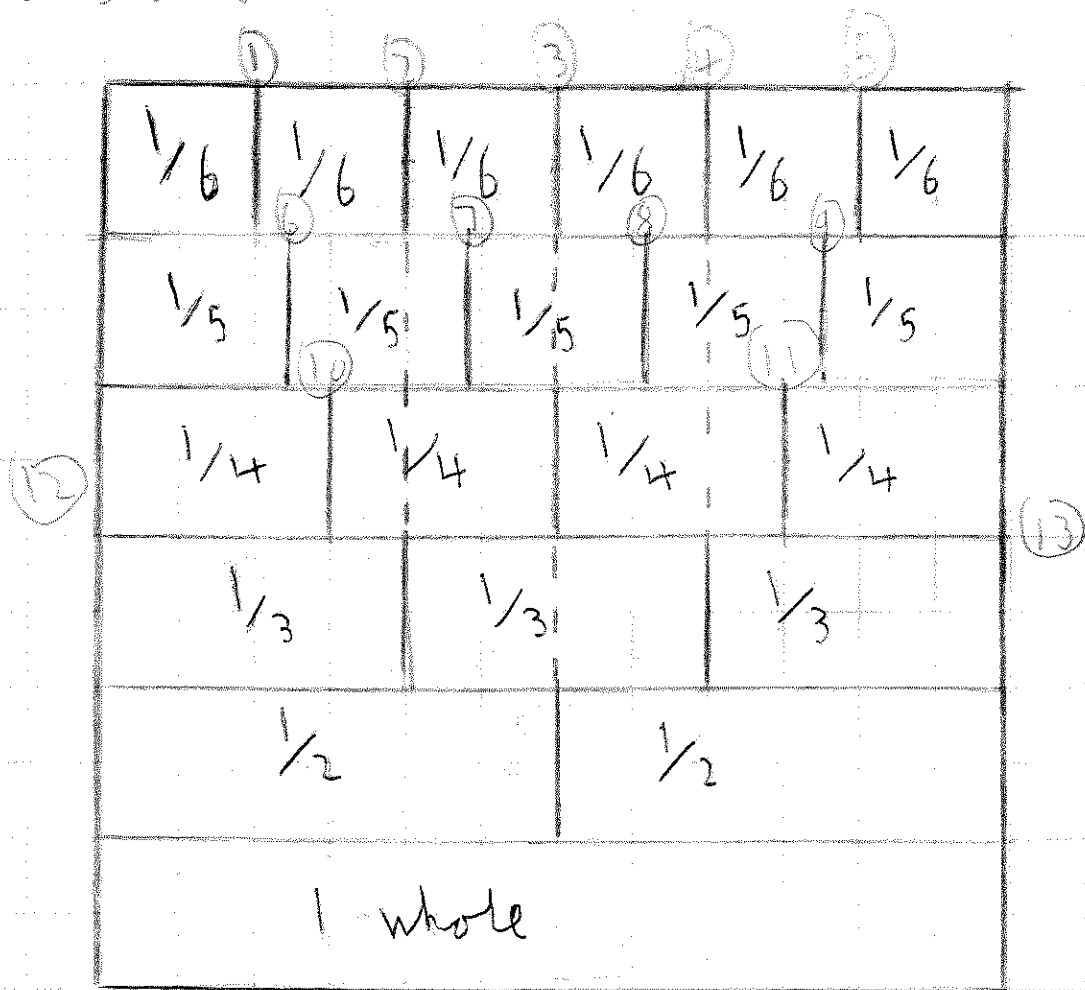
Molly

25/6/2018

Tumbling Down

The aim of this exercise was to record what you saw in the starting and ending images of the Tumbling Down videos. I soon realised that the starting image in the video resembles a fraction wall.

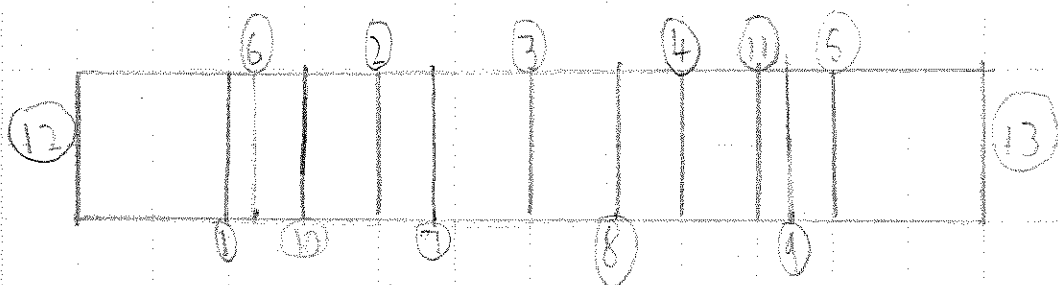
Here is a diagram to show what the starting image looks like:



I have labelled what I think are all the vertical lines - 1-13.

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I also noticed throughout the video that different lines were falling on top of different lines throughout the video and so left the ending image looking like this:

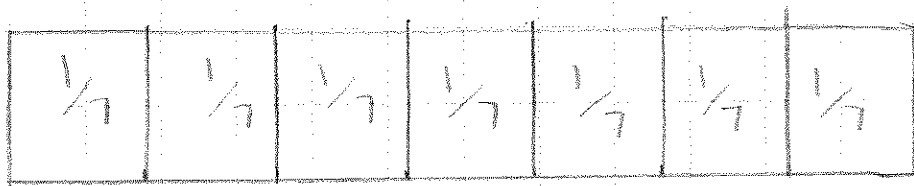


I have labelled all of the vertical lines on the ending image so that you can go back and look on the starting image to see which vertical line is where in the ending image.

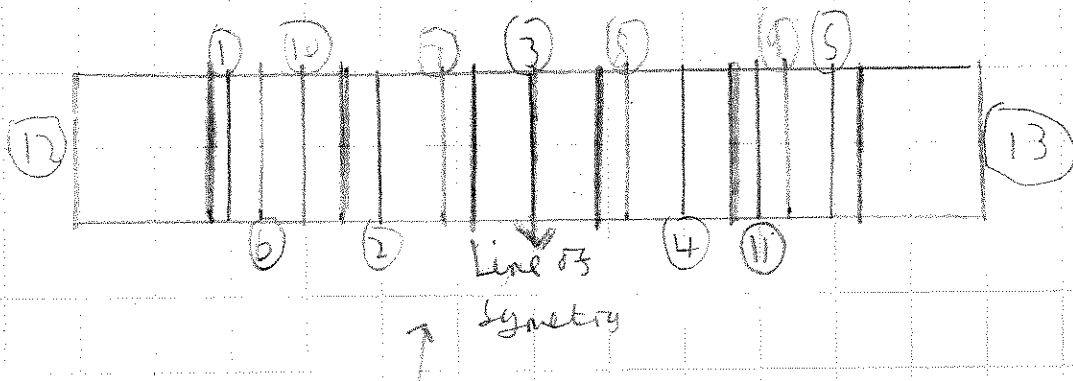
One of the questions we were aiming to answer in this activity was; how many lines do you see in the starting and ending images. After seeing the video a few times and hearing a few people's ideas and theories, I agreed with one of the theories that there were 13 vertical lines in both the starting and ending images. At the start of the activity I thought there were 17 vertical lines and 13 at the end but, after hearing the reasoning behind the 13 vertical lines at the beginning and 13 at the end, I agreed with the theory too. The reason why I ~~now~~ think this theory is true is because I realised that if you continue certain lines (which you can see in the video) they meet with other lines. Also some fractions on the beginning image are equivalent fractions. For example $\frac{2}{6}$ is equivalent to $\frac{1}{3}$ so they start and end on the same line. This is ^{why} I think there are 13 vertical lines on both the beginning and ending images.

The beginning and ending images are both symmetrical down the middle so all the vertical lines on the left side are mirrored on the right. Apart from this, I could not see any pattern in the way the lines are spaced on the ending image. To support this, I worked out what the image would look like with sevenths being a part of it.

This is what a line of sevenths look like:



This is what they would look like on the ending image:

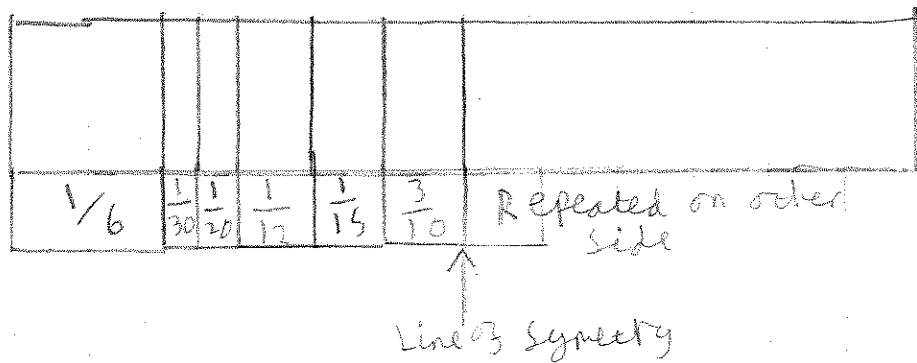


The sevenths are in orange above. ■

After trying this I saw that there was still no particular order that the lines in the ending image came in.

I worked out how to draw each line on the starting and ending image by using a ruler and short division to find out how many cm each segment would be.

To work out what fraction each segment of the ending image was worth I had to do lots of calculations. Here are my answers on how much each segment is worth.



There was no pattern in this either. To work out these segments I had to find the difference between two different fractions. For example $\frac{1}{5} - \frac{1}{6} = \frac{1}{30}$. That was the method I used to work out what each segment was worth. I also noticed that everything on the left side on the ending image was repeated on the right side.

In summary, throughout this investigation I noticed different things about the starting and ending images as well as noticing different things to help prove my hypothesis that there were thirteen vertical lines in the beginning image and thirteen vertical lines in the end.