Drawing your own labyrinths

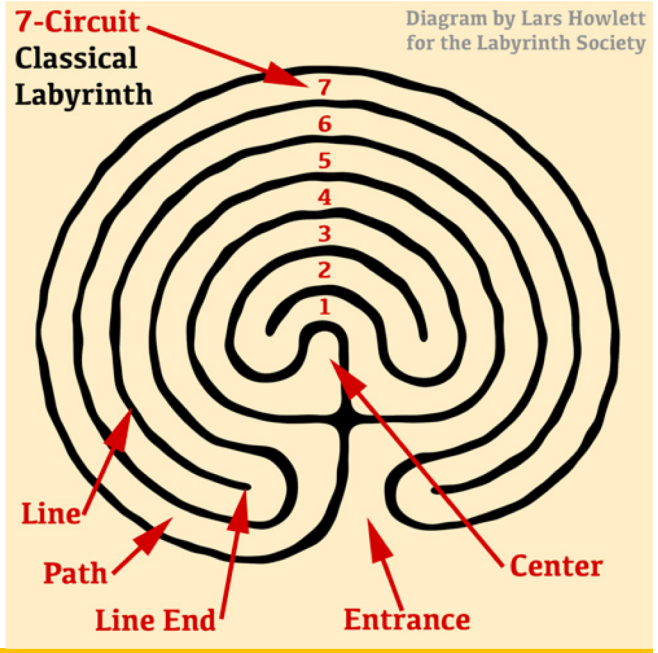
Art in Maths

Friday 5th June 2020

Labyrinths

As we learned yesterday **mazes** have many **branching** paths, with only one path leading to the **centre** or **exit**.

Labyrinths, on the other hand, are **unicursal** (single-pathed).



Did you know: some of the earliest mazes and labyrinths we know of were found in **Egypt** and in **Crete**, dating back over 4000 years.

One of the most famous of these is the **seven-circuit Cretan labyrinth**.

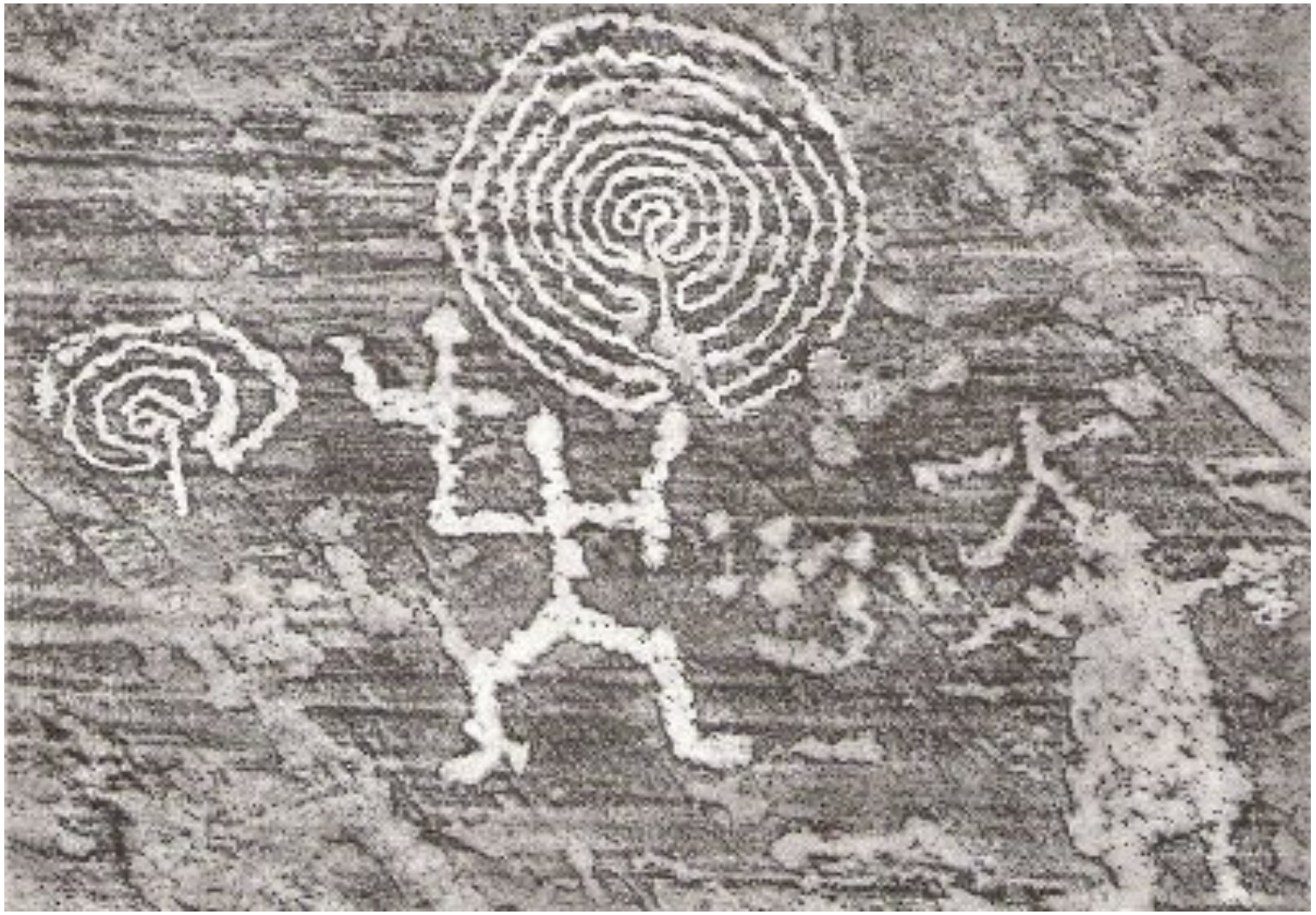
Labyrinths

In **Greek** mythology, the Cretan king **Minos** owned a labyrinth in which lurked the **Minotaur** – a half-man, half-bull creature who ate anyone lost in the labyrinth.

The **Romans** built many mosaic labyrinths, which were typically found in the entrance halls of their villas.

Mazes and labyrinths are still very popular today, with many large ones found in the grounds of parks and stately homes.

Labyrinths



Bronze Age labyrinth, Val Camonica, Italy

Labyrinths

Roman mosaic of Theseus and the Minotaur, Cyprus

Labyrinths

Labyrinth of stones, Land’s End, San Francisco

Labyrinths

Longleat Safari Park, Wiltshire

Drawing a labyrinth

You will need:

- some plain paper
- a pencil
- a good eraser

Follow the instruction on the next 4 slides.

Drawing a labyrinth

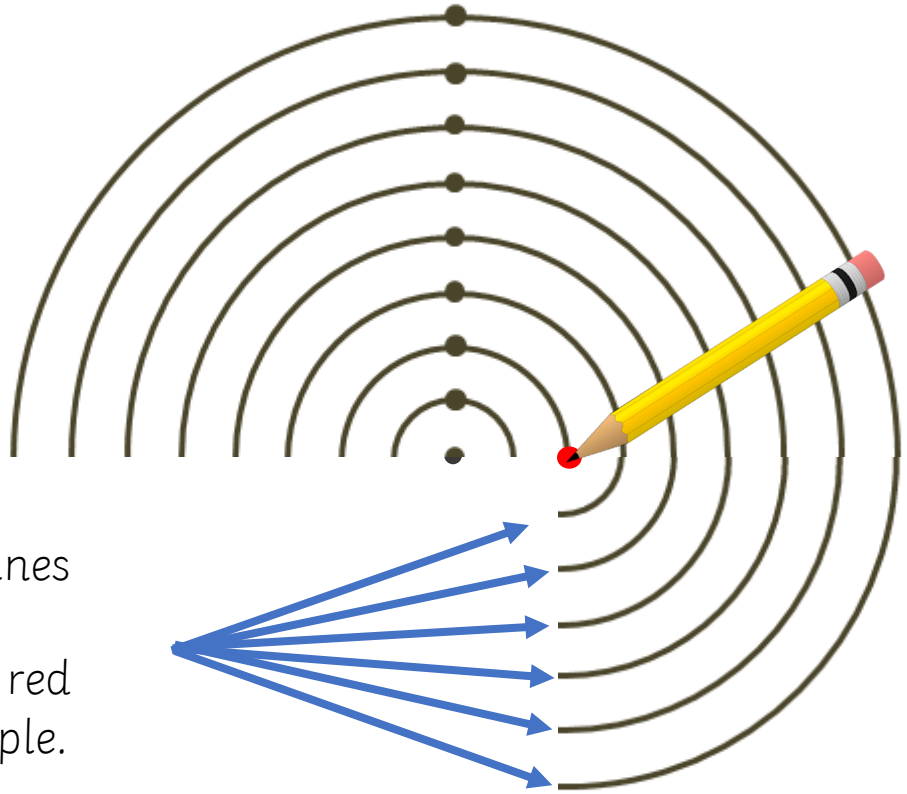
Using plain paper, a pencil and a ruler, start in the **middle of the page** and make a set of 9 tiny vertical dots **1 cm** apart from each other.

Placing your pencil on each make a set of 8 concentric (sharing the same centre) semi-circles going through each dot.

Drawing a labyrinth

Now place your pencil on the bottom *right-hand* edge of the *second smallest* semicircle.

Make a set of 6 concentric quarter circles using this point as the centre and extending the original 6 outer circles.

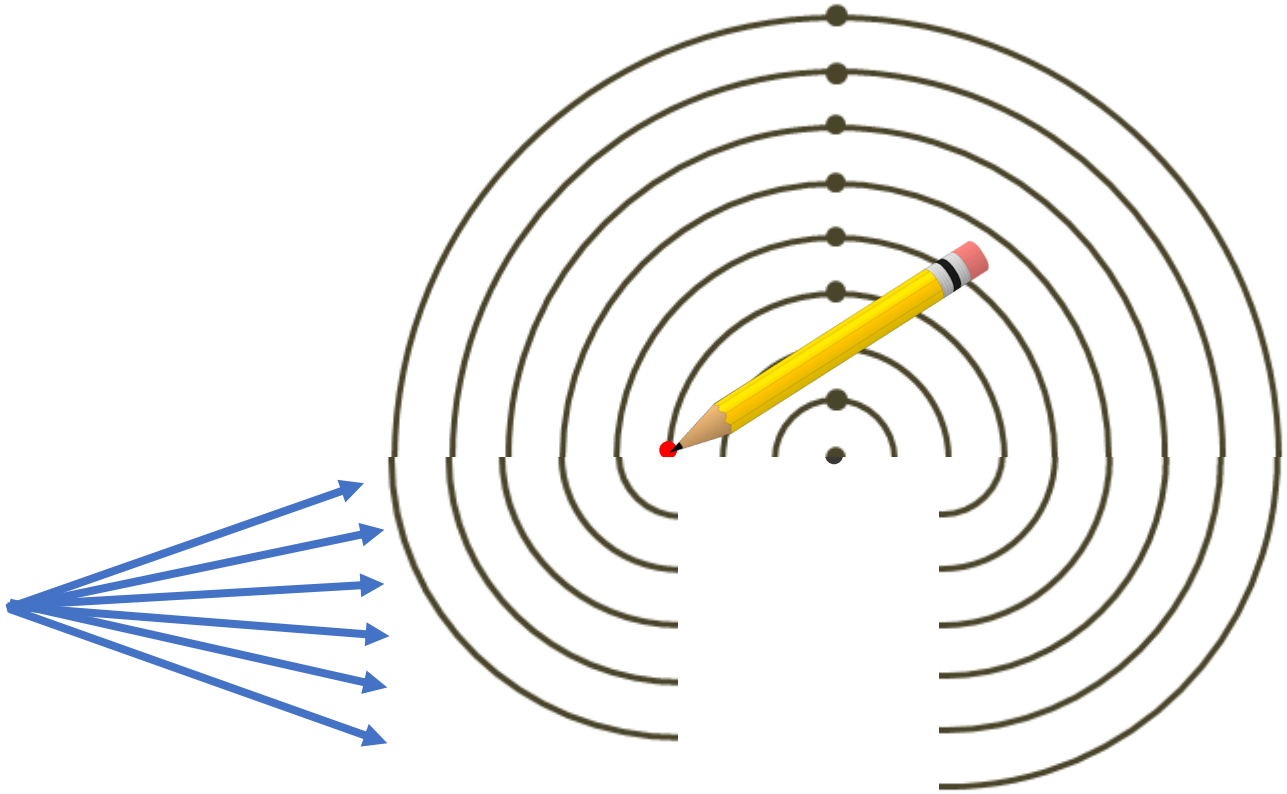


Continue these lines on but don't go further than the red dot on my example.

Drawing a labyrinth

This time extend the **5** outer semi-circles on the left side do not go past the 3rd smallest semi circle.

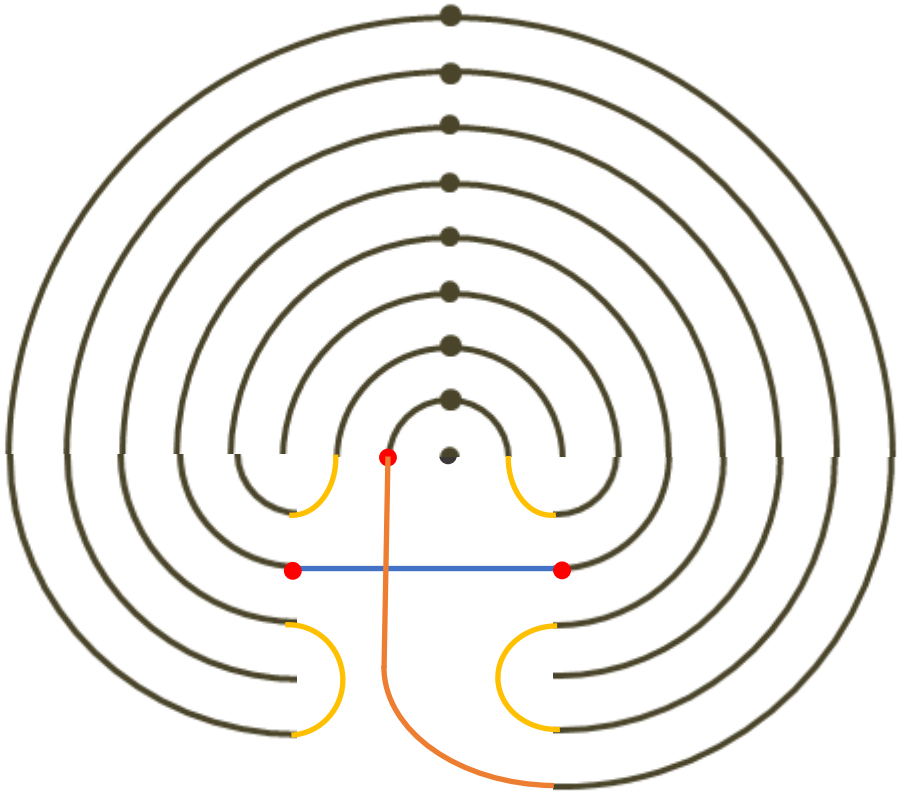
Continue these lines on but don't go further than the red dot on my example.



Drawing a labyrinth

Now here it gets a little bit tricky. Using your pencil follow these stages. I have colour coded them to help – do not change your pencil!

1. Add the horizontal line (blue)
2. create the curved line (orange)
3. Join all remaining semi circles. (yellow)



Your labyrinth is complete!
Now test it out: is there one single path to the centre?

It would be lovely to see this work uploaded to the website!

Drawing a labyrinth

Can you work out how to scale your labyrinth up or down?