

Meditation Mathematics

STEAM challenge! Take your doodling to new heights!
Relax while learning Math!

(New math terms are coloured **RED** and are underlined. The glossary for these words is on the last page.)

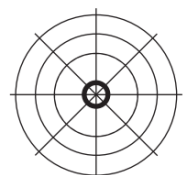
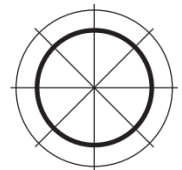
What is a mandala?

The term mandala is derived from a Sanskrit word meaning “circle.” In some Asian traditions, the mandala is used to represent the world or the cosmos, and the making of mandalas can be a highly meditative practice.

Each mandala has a different meaning and is unique to the artist(s) who designed it. Mandalas can be spiritual or symbolic. This fun project allows students to express their creativity and individuality by incorporating their own design ideas.

Instructions:

1. Watch the following short videos
[How to draw a mandala](#)
[Black and white mandala](#)
2. Draw a **circle** about 7 inches in **diameter**.
Divide the circle into 4 **quadrants**.
3. Divide each quadrant in half again.
4. Draw a smaller circle inside the larger one. Line up the centres or your mandala will be a little skew.
5. Keep drawing smaller circles until it looks like this...



What will I learn?

- Drawing
- Measuring
- Circle geometry
- Symmetry

What do I need?

- Pencils
- Paper
- Compasses
- Coloured pencils

What do I do if I get stuck?

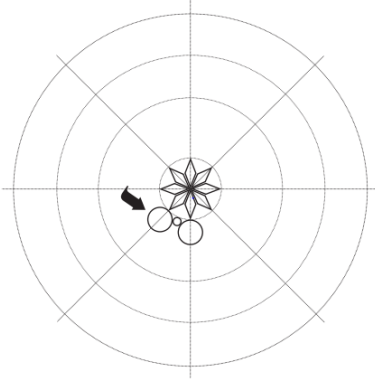
khorn@sd74.bc.ca

If I don't have those items?

Draw round circle shape objects...or check this video of freehand mandalas...

[5 colorful mandalas drawn in 9 minutes](#)

6.



Now you are ready to start drawing onto your mandala.

Use the straight guidelines that you drew to place geometric shapes onto the mandala.

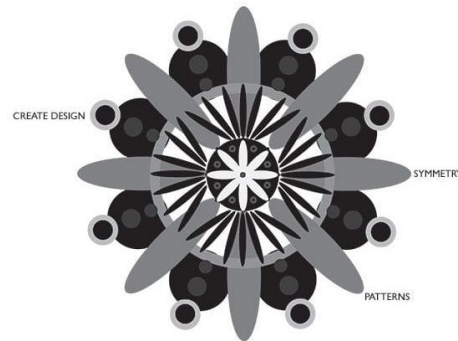
Draw a shape onto a guideline. Repeat it in the same spot on each of the guidelines for that circle.

Add other shapes around the circle until its full.

7. Erase the straight guidelines, and colour your mandala.

8. Email a photo of your completed mandala to khorn@sd74.bc.ca

9. Cut out your mandala and place it in your window, because COVID-19 right? Everything is going in our windows!!!



10. EXTENSION WORK

How many lines of symmetry does your mandala have?

Can you draw a mandala with rotational symmetry order 6?

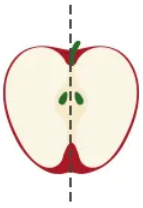
Glossary

Circle a round plane figure whose boundary (the circumference) consists of points equidistant from a fixed point (the centre).

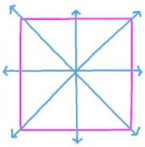
Diameter a straight line passing from side to side through the centre of a shape

Quadrant the four EQUAL quarters of a circle

Line of symmetry imaginary **line** that passes through the center of the shape or object and divides it into identical halves



Lines of symmetry how many lines there are that will divide the shape in half eg. a square has 4



Rotational-

-Symmetry when a shape still looks the same after some rotation (of less than one full turn)

[rotational symmetry video](#)

Plane a flat surface

Circumference the boundary of a circle

Equidistant equal distance