

NUMBER SYSTEM

1. What we have to do?

To create a square root spiral of natural numbers.

2. What is required?

Graph paper, Geometry kit, Glue

3. What do you need to know?

Number system, Irrational numbers, Pythagoras theorem

4. How will you proceed?

- Draw a line segment AB of length one unit by taking $2\text{ cm} = 1\text{ unit}$.
- Construct a perpendicular $BX = 1\text{ unit}$ at the line segment AB using ruler and compass.
- From BX , cut off $BC = 1\text{ unit}$ and join AC .
- With AC as base and using ruler and compass, draw CY perpendicular to AC .
- From CY , cut off $CD = 1\text{ unit}$ and join AD .
- With AD as base and using compass, draw DZ perpendicular to AD .
- From DZ , cut off $DE = 1\text{ unit}$ and join AE .
- Now continue in the same manner for a sufficient number of times to create an accurate and beautiful square root spiral.

5. What have you observed?

What pattern is formed by hypotenuse of the right triangles?

6. What have you learnt?

7. What would you be interested in doing?

- Show the calculations of all the right triangles so formed.
- Do you think $\sqrt{16}$ is an irrational number. Justify.

Real life application :- pouring cement into a rectangular box for big slabs.

