

# Worksheet based on Geoboard (Class 6)

By Math Space

If you are not familiar with geoboard, check this review:

[https://publications.azimpremjiuniversity.edu.in/3759/1/16%20GEOBOARD\\_REVIEW.pdf](https://publications.azimpremjiuniversity.edu.in/3759/1/16%20GEOBOARD_REVIEW.pdf).

## 1. Use the rectangular array geoboard and make the following triangles

- Make a square. Now release any one corner to get a triangle. Which type of triangle did you get? Consider both types of triangles, i.e., those classified by either side or angle.
- Now make a rectangle. Again, release any one corner to get a triangle. How is this triangle similar to the earlier one? How are the two different?
- Use different rubber bands to make as many isosceles triangles as you can keeping the base fixed. How does the angle opposite to the base change as you increase the height of the triangle?
- Can you make an equilateral triangle on this geoboard? Why?

## 2. Take the circular geoboard.

- Can you make an equilateral triangle here? Can you justify using symmetry?
- Keep one vertex of the equilateral triangle fixed along with the line of symmetry passing through it. Change the remaining pair of vertices so that you get an isosceles triangle with the same line of symmetry.
- Use different rubber bands to make as many isosceles triangles as you want with the same line of symmetry. Write down your observations.

## 3. Use the rectangular geoboard and make the following squares and rectangles

- A square whose sides are tilted
- A rectangle whose sides are tilted
- A square whose sides are tilted by an angle less than  $45^\circ$

- A rectangle whose sides are tilted by an angle more than  $45^\circ$

## 4. Use the rectangular geoboard and make the following trapeziums

- An isosceles trapezium
  - i. What shape do you get if you extend the sides?
  - ii. Is it possible that no pair of opposite sides ever meet? When?
- A trapezium with a right angle and an acute angle
  - i. What do you observe about the remaining angles?
  - ii. How many right angles are there?
- A trapezium with two acute angles which are opposite to each other
  - i. What shape do you get if you extend the sides?
  - ii. Which quadrilateral do you get if the acute angles are equal?

## 5. Use the rectangular geoboard and make the following quadrilaterals

- A kite whose halving diagonal is shorter than the halved diagonal
- A kite whose equal angles are right angles [Hint: Can you use 3D cleverly?]
- A kite with exactly one right angle
- A kite with two unequal obtuse angles
  - i. What type of angles are the equal ones?
  - ii. If the unequal angles are acute, what type of angles are the equal ones?
- A concave quadrilateral that has line symmetry
- A concave quadrilateral without line symmetry

Send in your pictures and narratives (or those of your students) to [atrightangles.editor@apu.edu.in](mailto:atrightangles.editor@apu.edu.in). We'd love to hear from you!