**Materials**

### Rectangular Box

A pair of yellow equilateral triangles each with a black line along one of the sides (10 cm sides)

A pair of yellow right-angled isosceles triangles each with a black line along one of the sides enclosing the right angle (Base and Height 15 cm)

A pair of green right-angled isosceles triangles each with a black line along the hypotenuse (Base and Height 15 cm)

A pair of yellow right-angled scalene triangles each with a black line along the shortest side (Base 8.5 cms; Height 15 cm)

A pair of green right-angled scalene triangles each with a black line along the longer side enclosing the right angle (Base 8.5 cms; Height 15 cm)

A pair of grey right-angled scalene triangles each with a black line along the hypotenuse (Base 8.5 cms; Height 15 cm)

A small red right-angled scalene triangle with a black line along the longer side enclosing the right angle (Base 6.8 cms; Height 14 cm)

A red obtuse-angled scalene triangle with a black line along the side opposite the obtuse angle (Base 6.8 cms; Height 9.5 cm)

### Blue Triangles

A pair of equilateral triangles (10 cm sides)

A pair of right-angled isosceles triangles (Base and Height 15 cm)

A pair of right-angled scalene triangles (Base 8.5 cms; Height 15 cm)

A small right-angled scalene triangle (Base 6.8 cms; Height 14 cm)

An obtuse-angled scalene triangle (Base 6.8 cms; Height 9.5 cm)

The triangles are blue without black lines

### Triangular Box

One large grey equilateral triangle without black lines (20 cm sides)

Two green right-angled scalene triangles, each a half of the grey triangle, with black lines along the longer of the two sides enclosing the right angle (Base 5 cms; Hypotenuse 20 cm, Height 17.3 cms)

Three yellow obtuse-angled isosceles triangles, each a third of the grey triangle, with black lines along both sides enclosing the obtuse angle (Base 20 cms; Sides 11.5 cm)

Four small red equilateral triangles, each a fourth of the grey triangle, one with black lines along all sides, and three with black lines along one side (10 cm sides)

### Large Hexagonal Box

One large yellow equilateral triangle with black lines along all sides (20 cm sides)

A pair of red obtuse-angled isosceles triangles each with a black line along the side opposite the obtuse angle (Base 20 cms; Sides 11.5 cm)

A pair of grey obtuse-angled isosceles triangles each with a black line along one of the sides enclosing the obtuse angle (Base 20 cms; Sides 11.5 cm)

Three yellow obtuse-angled isosceles triangles, each with a black line on the side opposite the obtuse angle (Base 20 cms; Sides 11.5 cm)

Three yellow obtuse-angled isosceles triangles, each with black lines on both equal sides (Base 20 cms; Sides 11.5 cm)

### Small Hexagonal Box

Two red equilateral triangles each with a black line along one side (10 cm sides)

One green equilateral triangle with black lines along two sides (10 cm sides)

Two green equilateral triangles each with a black line along one side (10 cm sides)

Six grey equilateral triangles with black lines along two sides (10 cm sides)

### Supplementary Material

Twelve blue right-angled scalene triangles (Base 7.5 cms; Height 13 cm)

**AIMS**

**Direct Aim**

Exploration of the construction power of the triangles

Discovery that all straight sided figures are formed by joining together different triangles

**Indirect Aim**

Preparation for Mathematics (Similarity, Equivalence and Area of Plane figures)

**PRESENTATION**

**RECTANGULAR BOX**

1. Take out 3 sets of triangles (green right angled isosceles, grey right angled scalene and yellow equilateral) from the box
2. Please them randomly on the table
3. Close the Box and keep it on the side
4. Isolate a triangle and join it with its pair along the black lines
5. Ask the child to name the shape and set it aside
6. do the same  for the other two triangles (square, rectangle, rhombus)
7. Bring the box forward and take out other three pairs of triangles (yellow right angled isosceles, yellow right angled scalene and green. right angled scalene)
8. Keep them randomly on the table
9. Isolate a triangle, find its pair and join it along the black line
10. Ask the child to name it, we should also help the child in naming it
11. Do the same for the other two pairs(parallelograms) and name the shapes
12. Mix up all the 6 triangles and invite the child to construct the triangles
13. Take out the last two red triangles from the box
14. Join then along the black Lines and tell the name
15. mix up all the triangles and invite the child to work with the material

Exercise one – the child own activity as shown in the presentation

 Exercise 2-Blue triangles (sliding)

1. Take out the blue equilateral triangles from the box
2. keep it on the table and ask the child to make a shape
3. hold one triangle steadily and slide the other pair through the edges of the 1 held, and move it around the triangle to form a new shape
4. pause at the corners to show the new shapes formed
5. flip the triangle and slide again

Rotation

1. hold one vertex down with two fingers, and rotate one of the triangles along the vertex until a joins another side
2. rotate again holding another vertex until it forms another triangle
3. Hold the top vertex again and bring it back
4. Now, flip a triangle and rotate
5. invite the child to do rotation

6.  The child can work with the other shapes in the same way as Time goes by.

Exercise 3 – triangular box

1. Take out all the triangles and mix them and place it randomly on the table
2. set the grey triangle aside
3. isolate the green triangles and join them along the black lines
4. join all the yellow triangles
5. now join the red triangles
6. Superimpose the great triangle on top of the constructed triangles and check for confirmation
7. mix up all the triangles randomly and invite the child to do the activity

Exercise 4– large hexagonal box

1. Take out all the triangles and place them randomly on the table
2. isolate the red ones, join them along the black lines, to make a rhombus
3. isolate the Two grey ones and join them along the black lines to make a parallelogram
4. Place the three triangles with the lines along one side and place equilateral triangle to construct a hexagon
5. Fold in the outer triangles on top of the large equilateral triangle
6. Unfold them back
7. construct the equilateral triangle with the remaining three yellow triangles
8. replace the large equilateral triangle in the hexagon with the constructed equilateral triangle
9. split the hexagon into three rhombi
10. Place the red Rhombus on one of the yellow rhombi to check for confirmation
11. Place the red rhombuses aside
12. slide the grey parallelogram until it forms a rhombus
13. Place the Grey rhombus base on the yellow rhombus and check
14. mix up all the triangles and invite the child to do the activity

Exercise 5 small hexagonal box

1. take all the triangles and keep them randomly on the table
2. Construct the red rambus by joining

All the red triangles along the black lines and then the green trapezium in the same way

3. Join all the great triangles and construct a hexagon

4. Split the hexagon into three rhombi and place the red Rhombus on top of one of the rhombi and check for confirmation

5. Set the red rhombuses aside and rejoin the hexagon

6. Split the hexagon into two Trapezium

7. Place the green trapezium on top of the Gray one and check

8. Set the green trapezium aside and rejoin the grey hexagon

 Mix them up and invite the child to do the activities

 Exercise 6 - supplementary material

1. Invite the child
2. take out a few of the blue supplementary triangles and make any shape
3. invite the child to make a shape of their own

Control of error – black lines acts as a guide

 Language – with the triangular box – side, base and vertex

 Age- 4- 4.25 years

 Games – none

 Illustrations