

LIST OF HANDS-ON ACTIVITIES IN MATHEMATICS

Mathematics Laboratory

The concept of Mathematics Laboratory has been introduced by the Board in its affiliated schools with the objective of

- Making teaching and learning of the subject interactive, participatory, fulfilling and joyful from primary stage of schooling.
- Strengthening the learning of mathematical concepts through concrete materials and hands-on-experiences.
- Relating classroom learning to real life situations and discourage rote and mechanical learning.

Given below is the list of activities to be done by the students in classes VIII during each academic year.

GRADE 8

- Activity 1:** Fold a paper 8 times in any way. Unfold and locate various convex and concave polygons.
- Activity 2:** To verify that the sum of interior angles of a quadrilateral is 360° by paper cutting and pasting.
- Activity 3:** To verify that the sum of measures of the exterior angles of any polygon is 360° by paper cutting and pasting.
- (Note: Verify the result for a triangle, quadrilateral, pentagon and hexagon)
- Activity 4:** To make the following by paper folding and cutting
- a kite
 - a rhombus
- Activity 5:** To verify that
- diagonals of a rectangle are of equal length
 - diagonals of a square are of equal length
 - Investigate the results for a rhombus and a parallelogram

, using stretched threads.

Activity 6: (Group Activity)

- a) Do a survey of your class and collect the data from all students of your class who spent more than 4 hours in watching TV. Represent the collected data, in the form of a histogram by paper cutting and pasting.
- b) Write how much you spent during a day in the following headings

- i) school ii) homework iii) play iv) sleep
v) watching TV vi) others

Represent the information in a Pie chart.

Activity 7: To observe the following number patterns and generate it up to next three steps

i)

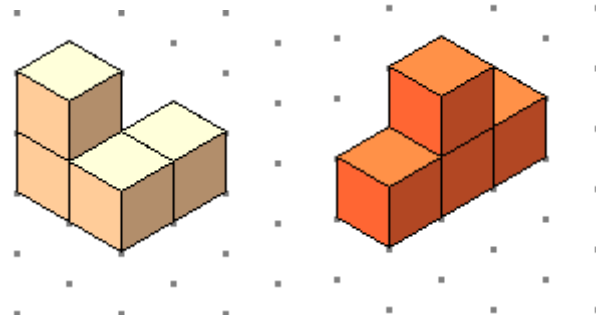
$$\begin{array}{cccccc} 1^2 = & & & & & & & & & & 1 \\ 11^2 = & & & 1 & & 2 & & & 1 & & \\ 111^2 = & 1 & & 2 & & 3 & & 2 & & & 1 \end{array}$$

ii)

$$\begin{array}{l} 1+3 = 4 = 2^2 \\ 1+3+5 = 9 = 3^2 \\ 1+3+5+7 = 16 = 4^2 \end{array}$$

(Note: Teacher may take any other such number patterns)

Activity 8: Draw front view, top view and side view of the following shapes made by unit cubes.



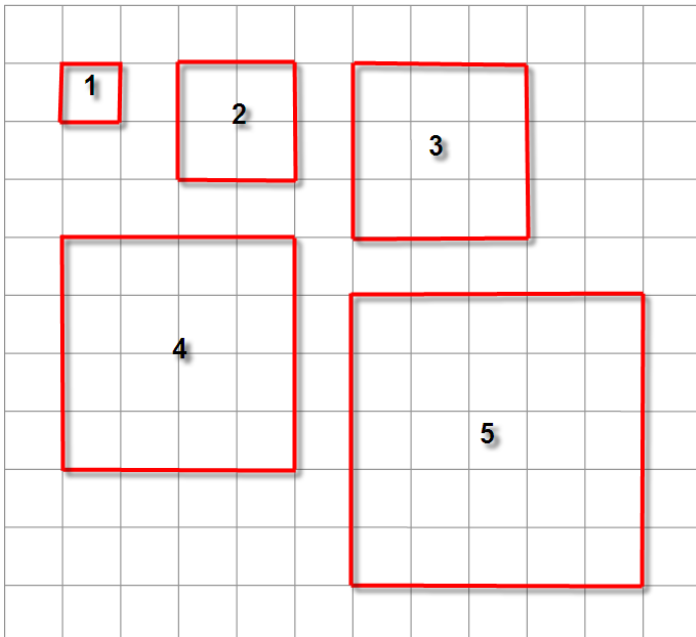
Activity 9: To make cubes and cuboids of given dimensions using unit cubes and to calculate volume of each.

- (i) $4 \times 3 \times 2$
- (ii) $3 \times 3 \times 3$

Activity 10: To explore the relationship between

- (i) Length (in cm) and perimeter (in cm)
- (ii) Length (in cm) and area (in cm^2)

of 5 squares of different dimensions drawn on a squared paper.



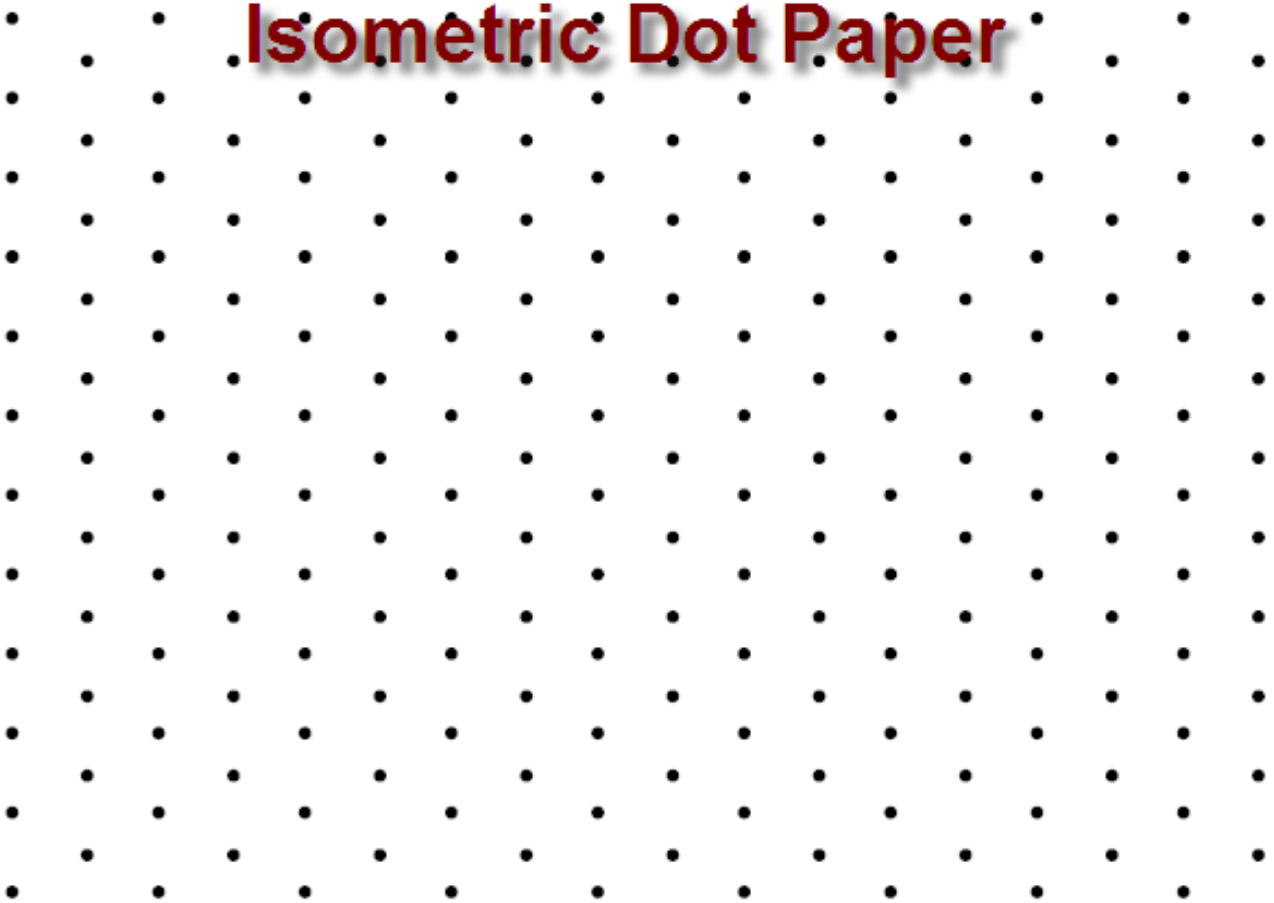
Length of a side (L)	Square 1	Square 2	Square 3	Square 4	Square 5
Perimeter (P)					
Area (A)					
P/L					
A/L					

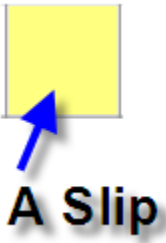
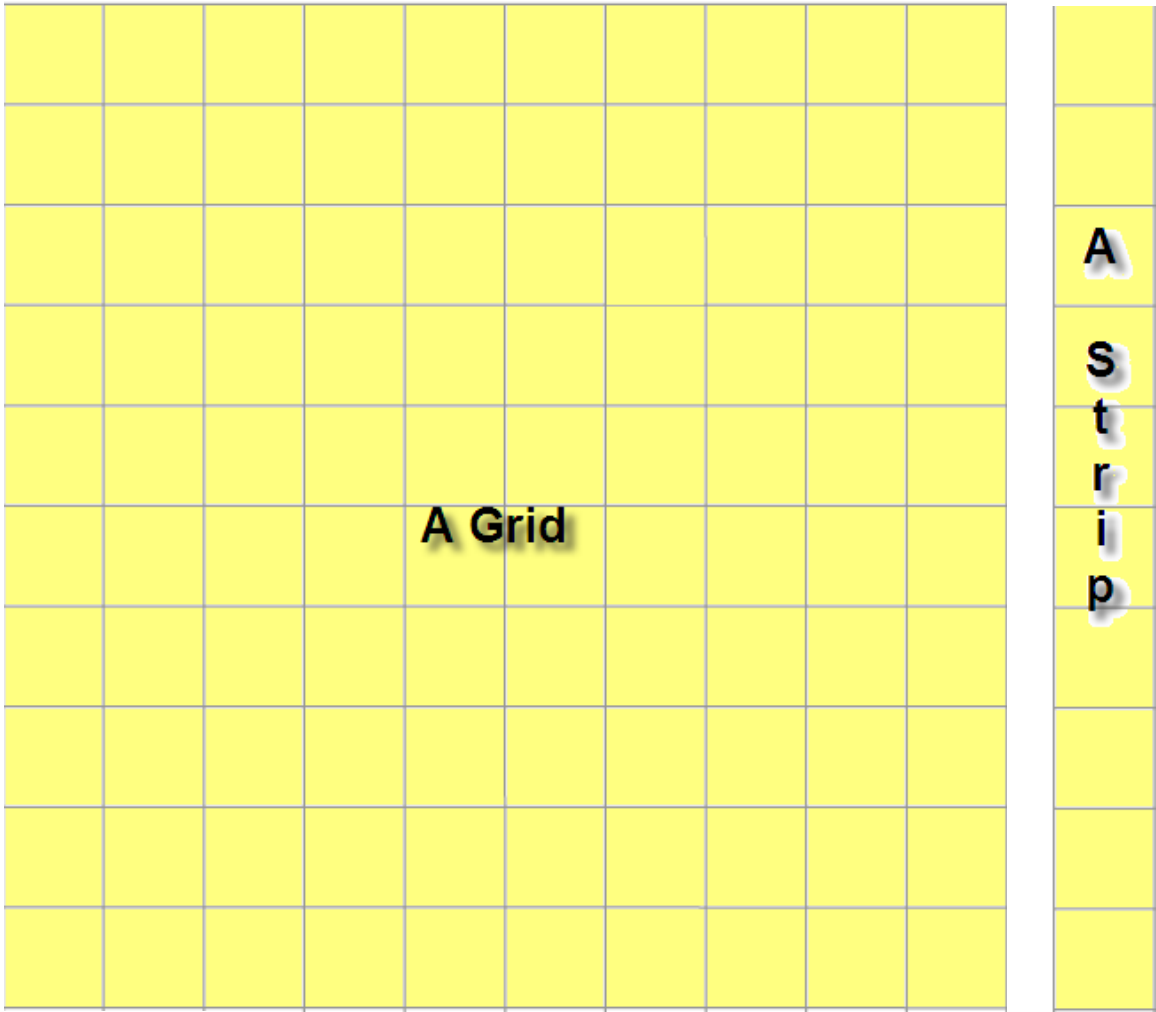
List of materials for performing activities in Mathematics Lab

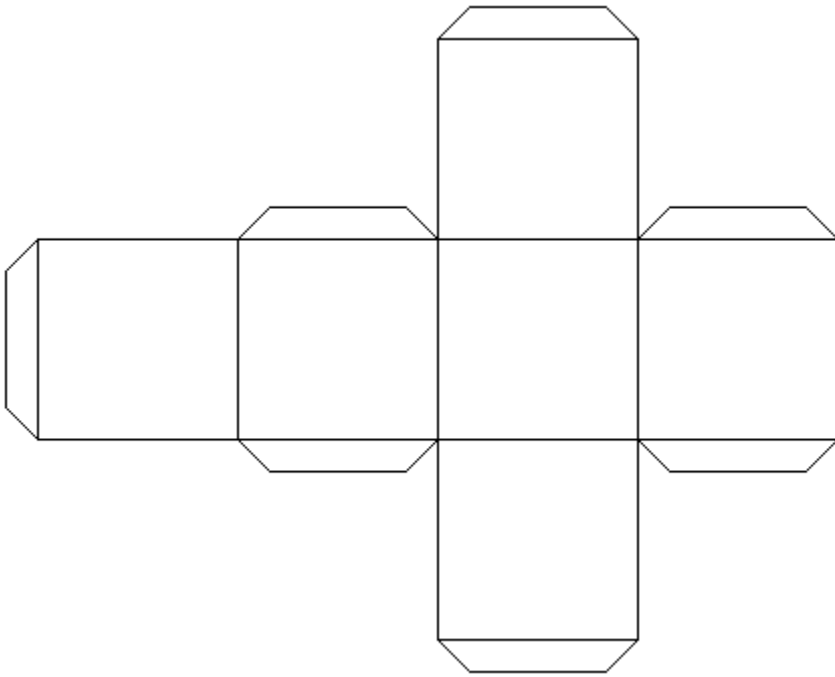
- ▶ Coloured paper / origami paper
- ▶ Pair of scissors
- ▶ Glue
- ▶ Paper net of a dice
- ▶ Unit cubes of dimension 1x1x1
- ▶ Match box
- ▶ 3 containers with circular box of different radii
- ▶ Squared paper

Squared Paper

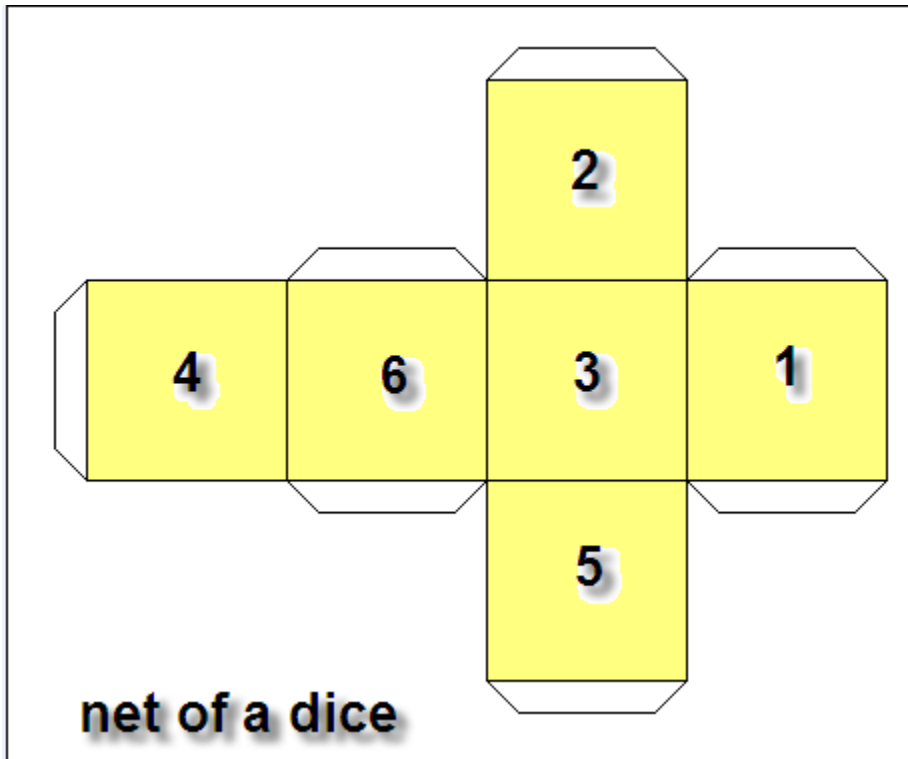






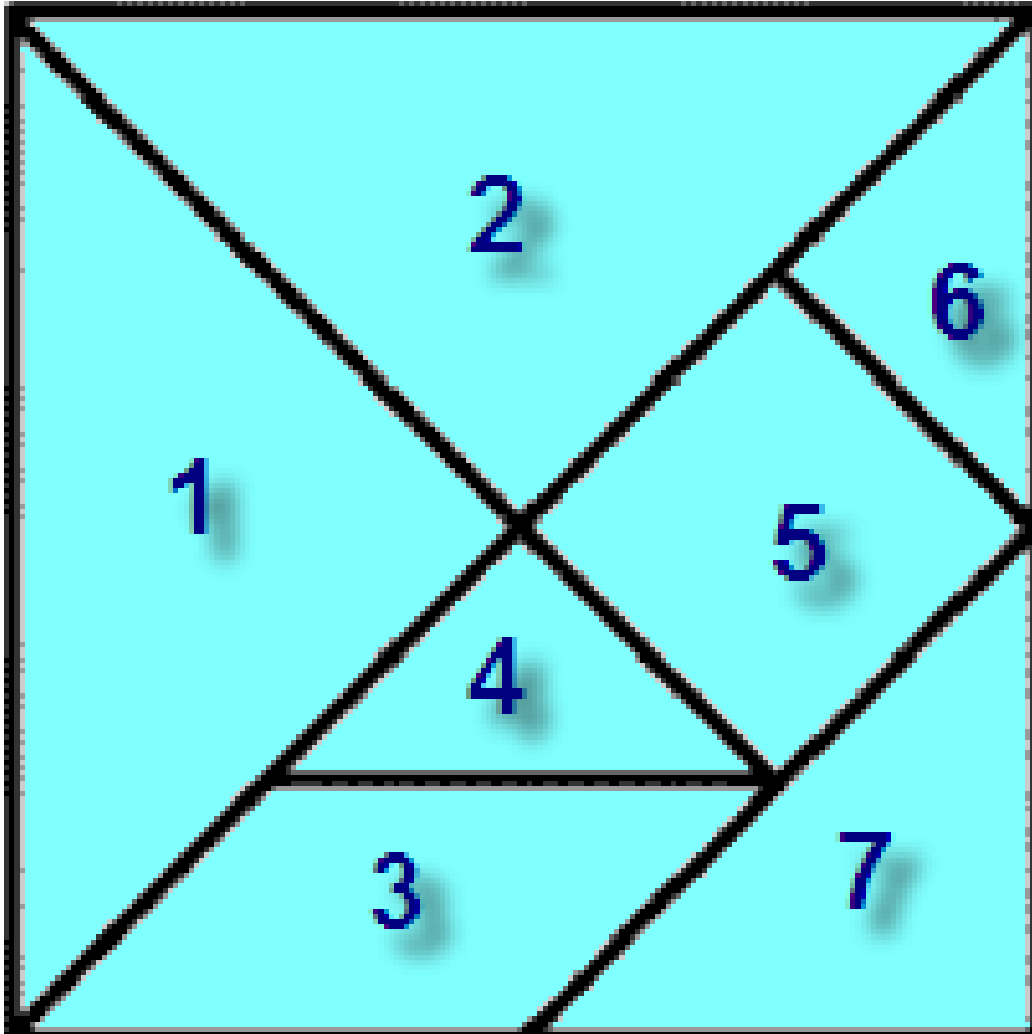


Net of a cube



net of a dice

Tangram



Tangram on 8 X 8 Squared paper

