Lab Manual in Mathematics

Class – 6th

Activity Book for SA-1 PSEB

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Scheme of Evaluation

Time : 2 hours Year-end Evaluation of activities : 10 marks

The break up of 10 marks could be as under :

(i) Evaluation of two activities out of four : 4×2=8 marks

(ii) Viva : 2 marks

LIST OF HANDS-ON ACTIVITIES IN MATHEMATICS

1. To find prime numbers from 1 to 100 by Eratosthenes Sieve's method.
2. To find the HCF of two given numbers by paper cutting and pasting/ using match sticks .
3. To known about different types of angles with help of wall clock.
4. To make closed geometrical shapes like triangle, quadrilateral, pentagon and Hexagon , using match sticks .
5. To classify the triangles on the basis of sides and angles from the given set of triangles.
6. To make the following shapes using a pair of set squares.
   i) square (ii) rectangle (iii) parallelogram (iv) rhombus (v) trapezium
7. To find addition and subtraction of integers using button or stones of different colours.
8. To calculate the perimeter of different shapes.
9. To determine the number of lines of symmetry of following shapes by paper folding.
   (a) equilateral triangle (b) Isosceles triangle (c) square (d) rectangle (e rhombus
10. To construct angles 60^0, 120^0, 30^0,45^0 and 90^0 using Scale and Compass only.

Important : The year-end assessment of practical skills will be done during an organized session in small groups as per the convenience of the schools. All the activities given in the document, every student may be asked to complete these activities during the academic year. He/she should be asked to maintain a proper activity record for this work done during the year. The activities should be preferably carried out individually and not in a group as it helps the each student to build interest and confidence in learning the subject.

With Best Wishes

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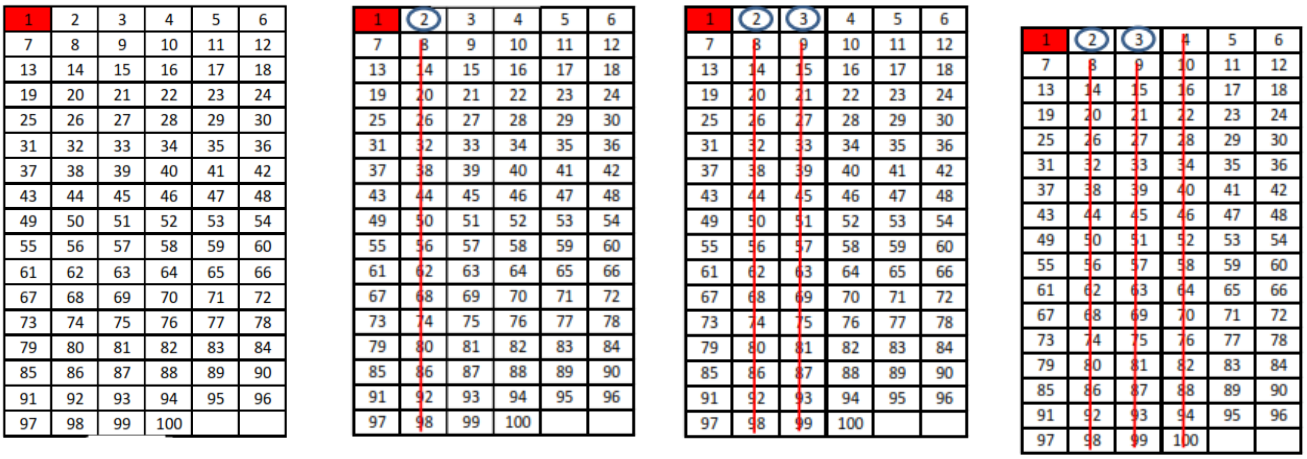
ACTIVITY-1

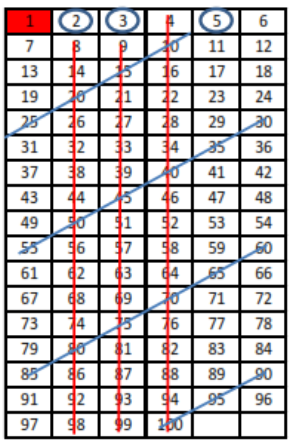
To find prime numbers from 1 to 100 by Eratosthenes Sieve's method(modified).

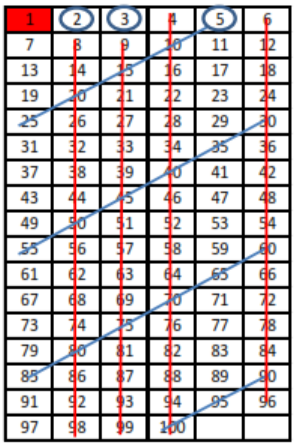
Pre-requisite : The students must have knowledge of factors and multiples.

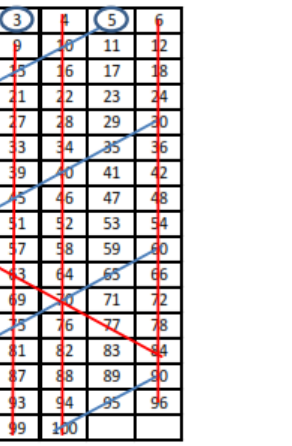
Materials Required : Grid paper , sketch pens, A geometry box.

Procedure : Follow the steps as shown in following figures with help of your class teacher :









Observation : 1 is neither prime not composite.The numbers encircled and not under any line are prime numbers.

List the prime numbers :.....

Learning Outcome : We learn that numbers which are not multiple of 2,3,5 and 7 are prime numbers between 1 to 100.

ACTIVITY-2

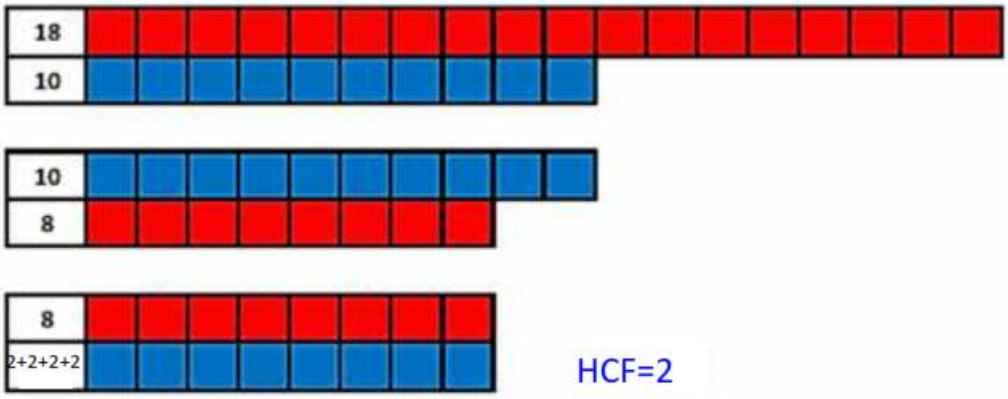
To find the HCF of two given numbers by paper cutting and pasting.

Pre-requisite : Knowledge of comparison of two numbers.

Materials Required : Coloured grid papers , a pair of scissors, glue, geometry box.

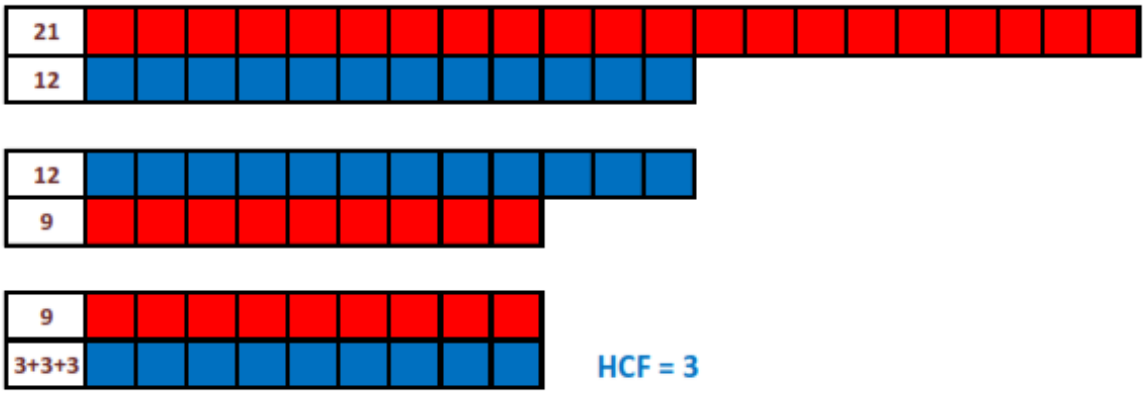
Procedure : Place the smaller cut out strip along the larger cut out strip and cut out the extra part as shown in figures and repeat the activity till both strips are equal.Then smaller cut out part is HCF.

To find HCF of 18 and 10



HCF=2

To find HCF of 21 and 12



HCF = 3

Learning Outcomes : We learn that the concept of HCF of two numbers by an activity.

ACTIVITY-3

To known about different types of angles with help of wall clock.

Pre-requisite : The students have skill of measuring angles using a protractor.

Materials Required : Wall Clock or make a modal of clock on hard Chart paper, a protractor , geometry box.

Procedure : Make different images of clock as shown is below .Take measurement between minute hand and hours hand, using a protractor.

Zero Angle

Acute Angle

Right Angle

Obtuse Angle

Straight Angle

Reflex Angle

Complete Angle

Observations :

1. The measurement of angle 0^0 is called Zero angle.
2. The measurement of angle between 0^0 and 90^0 is called Acute angle.
3. The measurement of angle 90^0 is called Right angle.
4. The measurement of angle between 90^0 and 180^0 is called Obtuse angle.
5. The measurement of angle 180^0 is called Straight angle.
6. The measurement of angle between 180^0 and 360^0 is called Reflex angle.
7. The measurement of angle 360^0 is called Complete angle.

Learning Outcomes : We learn that the concept of different types of angles ,with the help of clock. .

ACTIVITY-4

To make closed geometrical shapes like triangle, quadrilateral, pentagon and Hexagon , using match sticks .

Pre-requisite : Knowledge of geometrical shapes .

Materials Required : Match sticks , glue, paper.

Procedure : Paste match sticks as shown in following Figs.

Observations :

1. Three closed match sticks makes Triangle.
2. Four closed match sticks makes Quadrilateral.
3. Five closed match sticks makes Pentagon.
4. Six closed match sticks makes Hexagon.

Learning Outcomes : We learn that about geometrical shapes like triangle, quadrilateral, pentagon and Hexagon.

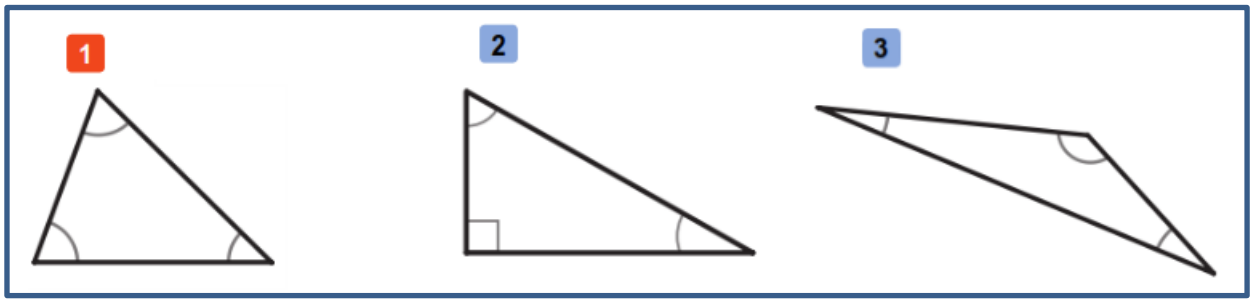
ACTIVITY-5

To classify the triangles on the basis of sides and angles from the given set of triangles.

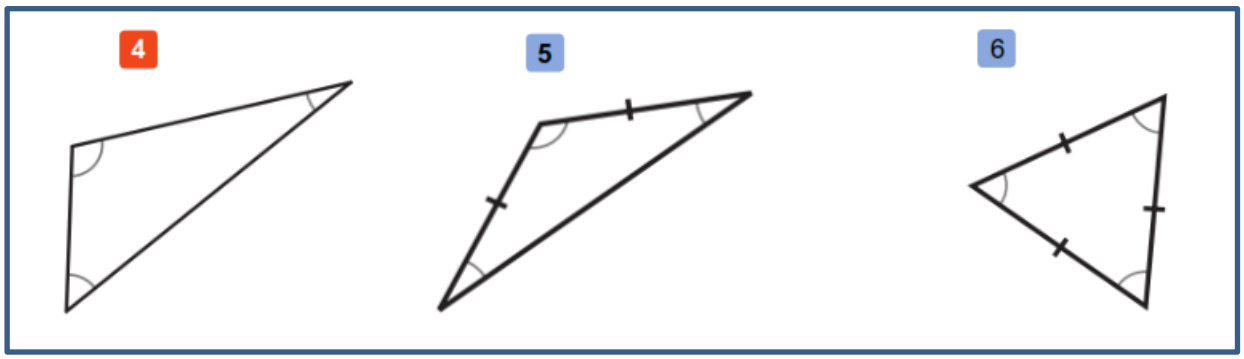
Pre-requisite : The students have skill of measuring line segment using a ruler and measuring angles using a protractor.

Materials Required : A ruler, protractor and pencils.

Procedure : Measure angle and length of each triangle and complete the following table :



On the basis of Angles				
Triangle	Number of Acute angles	Number of Right angles	Number of Obtuse angles	Type of Triangle
1				
2				
3				



On the basis of Sides				
Triangle	All three sides are equal	Only two sides are equal	None of the side is equals	Type of Triangle
4				
5				
6				

Observations :

1. Triangle having three acute angles is Acute angled triangle.
2. Triangle having one right angle is Right angled triangle.
3. Triangle having one obtuse angle is Obtuse angled triangle.
4. Triangle having three equal sides is Equilateral triangle.
5. Triangle having two equal sides is Isosceles triangle.
6. Triangle having all three sides of different lengths is Scalene triangle.

Learning Outcomes : We learn that the concept of different types of triangles by an activity.