# An Offline Learning Software for Classes KG to 12th

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# CLASS – 6

## MATHEMATICS

### Whole Numbers

Whole numbers
Addition on the number line
Subtraction on the number line
Multiplication on the number line
Division on the number line
Addition properties of whole numbers
Subtraction properties of whole numbers
Multiplication properties of whole numbers
Division properties of whole numbers
Patterns in whole numbers

### Knowing Our Numbers

Comparing numbers
Forming largest number from the given digits
Forming the smallest number from the given digits
Introducing 10000
Place value
Indian place value system
International place value system
Addition of large numbers
Subtraction of large numbers
Multiplication of large numbers
Estimating by rounding off
To estimate sum or difference
To estimate products
Using brackets
Expanding brackets
Roman numerals

### Bodmas

Bodmas
Simplify 6x(2+2)^2 / 4+2

Simplify 16-3(8-3)^2/5
Simplify 4-3(4-2(6-3))/2
Simplify 16/2(8-3(4-2))+1

## Playing with Numbers

Factors and multiples
Test for divisibility
Co prime numbers
Prime factorization method
Prime factorization method for finding HCF
Cross division method for finding HCF
How to solve problems of HCF-1
How to solve problems on HCF -2
Lowest common multiple ( L C M)
: Cross division method for finding L C M
Problems on L C M
Relation between H C F and L C M

## Basic Geometrical Ideas

Points, line, line segment and ray
Open curve and closed curve
Position in a plane figure
Polygon
Polygons: sides and diagonals
Angles
Triangles
Quadrilaterals
Circles
Parts of a circle

## Understanding Elementary Shapes

Measuring line segments
Comparison using ruler and divider
Angles- ‘Right ‘ and ‘Straight’
Angles- ‘Acute’, ‘Obtuse’ and ‘reflex’
Measuring angles using a protractor
Construction of angle using a protractor
Construction of angle using set squares and ruler
Perpendicular lines

Draw a perpendicular using set squares
Triangles
Naming triangles based on angles and sides
Quadrilaterals
Polygons
Three dimensional shapes : Faces, edges and vertices

## Integers

Integers
Representation of integers on a number line
Ordering of integers
Addition of integers
Addition of integers on a number line
Subtraction of integers
Subtraction of integers with the help of a number line

## Fractions

A fraction
Fraction on the number line
Proper and improper fractions
Mixed to improper fraction
Improper to mixed fraction
Equivalent fractions
Simplest form of a fraction
Like and unlike fractions
Unlike to like fractions
Compare fractions
Addition of like and unlike fractions
Addition of mixed fractions
Addition of mixed fractions : Solved problem
Subtraction of like and unlike fractions
Subtraction of mixed fractions
Subtraction of mixed fractions: Solved problem
Addition and subtraction in fractions

## Decimals

Decimals
Tenths, Hundredths and thousandths
Representing decimals on a number line

Like and unlike decimals
Comparison of like and unlike decimals
Expanded form of decimals
Arrange decimals in ascending and descending order
Convert decimal to fraction
Convert fraction to decimal
Uses of decimals: Conversion of units
Addition of numbers with decimals
Subtraction of numbers with decimals

## Mensuration

Perimeter of a rectangle
Perimeter of a square
Perimeter of a triangle
Perimeter of irregular shapes
Area of a square
Area of irregular shape

## Algebra

Algebra
Matchstick patterns
More match stick patterns: Triangle
Match stick pattern of a square
Use of variables in common rules : Perimeter of a square
Use of variable in common rules: Perimeter of a rectangle
Use of variables in common rules : Rules from Arithmetic
Use of variables in common rules
Expressions with variables
What is an equation?
Solution of an equation

## Ratio and Proportion

Ratio
Simplification of ratio
Equivalent ratio
Ratio: Solved problems
Proportion
Compare proportions
Unitary method

Unitary method : Solved problems
Unitary method : How to solve a problem

## Symmetry

Symmetry
Making symmetric figures
Line symmetry
Figures with multiple lines of symmetry
Reflection and symmetry

## Practical Geometry

A circle
Construction of a circle of given radius.
A line segment
Construction of a line segment of given length
Perpendiculars
Perpendicular to the line through a point on it
Draw a perpendicular using a ruler and compass
Perpendicular to a line through a point not on it
The perpendicular bisector of a line segment
Constructing an angle of given measure
Constructing the copy of an angle of unknown measure
Bisector of an angle
Constructing a 60 degree angle
Constructing a 30 degree angle
Constructing a 120 degree angle
Constructing a 90 degree angle

## Data Handling

Recording data
Organisation of data
Interpretation of tally marks
Pictograph
Interpretation of pictograph
A bar graph
How to draw a bar graph
Bar graph

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## Science

### FOOD: WHERE DOES IT COME FROM ?

Food from plants
Cereals and pulses
Sprouted food
Food from animals
Honey from nectar
Herbivores
Carnivores
Omnivores

### FIBRE TO FABRIC

Variety in fabrics
Some plant fibres
Spinning cotton yarn
Yarn to fabric
Knitting
History of clothing material

### SORTING MATERIALS INTO GROUPS

Objects around us
Properties of materials
Classification based on properties
Floating and sinking
Transparent, opaque and translucent

### SEPARATION OF SUBSTANCES

Methods of separation
Sieving
Separation of butter from curd
Sedimentation and decantation
Sedimentation by loading
Filtration

Evaporation
More than one method of separation – Distillation
Dissolving and saturation
Magnetic separation of substances

**BODY MOVEMENTS**

Human body and its movements: Joints
Ball and socket joints
Types of joints
Fixed joints
Human skeletal system
Different types of bones
Cartilage
Muscles
Muscle contraction
Movement of earth worm
Movement of snail
Movement of cockroach
Movement of bird
Movement of fish
Movement of snake

**GETTING KNOWN TO PLANTS**

Types of plants – herbs, shrubs, trees
Creepers and climbers
Parts of a Plant
Stem
Parts of leaf
Leaf venation
Transpiration
Photosynthesis
How do plants store food?
Parts and functions of root
Plants without root will not survive- Test
Flowers
Stamen and pistil

**THE LIVING ORGANISMS AND THEIR SURROUNDINGS**

Habitat and adaptation
Biotic and abiotic components
Terrestrial habitats
Adaptation of camels in deserts
Adaptation of other animals in the desert
Adaptation of desert plants
Mountain regions
Trees in the mountain regions
Adaptation of animals in the grass land
Adaptation of animals in the polar region
Aquatic habitat
Ponds and lakes
Adaptation of frog
Characteristics of living organisms
Organisms respire
Respiration of plants
Stimuli
Excretion in organisms
Living organisms reproduce
Living things move

## MOTION AND MEASUREMENT OF DISTANCE

Mode of transport
Using hand span to measure
Standard units of measurements
Correct measurement of length
Measuring the length of a curved line
Rectilinear motion
Circular motion -11
Circular motion
Uniform circular motion
Motion of a cylinder on ground
Oscillatory motion
Different motion in same time
Simple pendulum

## LIGHT, SHADOW AND REFLECTION

Transparent, opaque and translucent objects
Shadow
Shape and size of shadow
Pinhole camera
Light travels in a straight Line
Reflection of light
Periscope

**ELETRIC CURRENTS**

Electric cell
An electric bulb
Bulb connected to an electric cell
An electric circuit
An electric switch
Inside view of a torch
Electric conductors and insulators\

**FUN WITH MAGNETS**

Magnetic materials
Poles of a magnet
Magnetic Compass
Earth as a magnet
Make your own magnet
Temporary magnets
Attraction and repulsion between magnets

**AIR AROUND US**

Is air present everywhere?
Air occupies space
Air has weight
Water contains air
Water vapour
Soil has air in it
How trees replace oxygen back to the atmosphere ?
A wind mill

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## GARBAGE IN,GARBAGE OUT

Dealing with garbage
Sorting of garbage
Composting
Vermi composting
Use minimum plastic

## COMPONENTS OF FOOD

Nutrients of food
Test for carbohydrates
Test for protein
Test for fats
Contents of different food items
Balanced diet
Deficiency Diseases

## SOURCES OF WATER

Where do we get water from?
Water cycle
Loss of water by plants
TPOIC 4: Evaporation
Evaporation depends on several factors
How clouds are formed
Water back to the ocean
Flood
Drought
Rain water harvesting

## CHANGES AROUND US

Other ways to bring change
Types of changes
Burning of a candle and melting of wax
Physical change
Chemical change