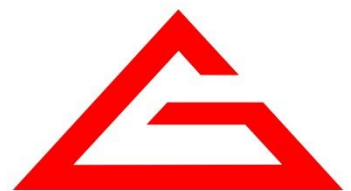




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CLASS – 7

MATHS

INTEGERS

Addition of integers
Addition problems
Subtraction of integers
Subtraction problems
Closure property under addition
Closure property under subtraction
Commutative property for addition
Associative property
Additive identity
Multiplication of integers
Multiplication problems
Product of three or more negative integers
Properties of multiplication of integers
Commutativity of multiplication
Multiplication by zero
Multiplicative identity
Associativity for multiplication
Distributive property
Making multiplication easier
Division of integers
Division problems
Properties of division of integers

FRACTIONS

Multiplication of a fraction by a whole number
Multiplication of a fraction by a fraction
Properties of multiplication of fraction
Solving a word problem
Division of whole number by a fraction
Division of a fraction by a whole number
Division of a fraction by another fraction



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Properties of division of fraction
Simplify the fraction

DECIMALS

Collection of data
Organisation of data
Average
Average – Solved problem
Arithmetic mean
Range
Mode
Tally charts
Median
Bar graphs
How to draw a bar graph
How to draw a bar graph -2
Drawing a double bar graph
Chances and probability
Probability line
Probability when different objects are involved

RATIONAL NUMBERS

What equation is?
Solving an equation
More equations
Application of simple equations to practical situations
Application of simple equations to practical situations
Application of simple equations to practical situations

POWERS AND EXPONENTS

Point, line, line segment and ray
Name of angles according to their measurement
Related angles
Angles made by a transversal
Transversal of parallel lines
Construction of angles using set squares and ruler

ALGEBRA

A triangle



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Medians of a triangle
Altitude of a triangle
Properties of triangles
Kinds of triangle
Right angled triangles and Pythagoras property
Solved problem

RATIO AND PROPORTION

Congruence of various shapes
Congruence of triangles

PERCENTAGE

Ratio
Simplification of ratio
Proportion
Direct variation
Inverse variation
Percentage
Converting fractional numbers to percentage
Converting decimals to percentage
Converting percentage to fractions
Converting percentage to decimals
Converting percentage to “how many”
Express a quantity as the percentage of another
Ratios to percents
Increase measured as percent
Decrease measured as percent
Converting percentage into a ratio
Profit or loss as a percentage

SIMPLE INTEREST

Interest for multiple years

SIMPLE INTEREST

What are rational numbers?
Equivalent rational numbers
Ordering of rational numbers
Rational numbers in standard form
Comparison of rational numbers
Rational numbers between two rational numbers



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Addition of rational numbers
Solved problems on addition of rational numbers
Subtraction of rational numbers
Solved problems on subtraction of rational numbers
Multiplication of rational numbers
Solved problems on multiplication of rational numbers
Division of rational numbers
Rational numbers as decimals

PROFIT AND LOSS

Parallel lines
Construction of a line parallel to the given line through a point outside
Construction of an angle equal to a given angle
Bisecting a given angle
Construction of 30 degree angle
Construction of 45 degree angle
Construction of 60 degree angle
Construction of 90 degree angle
Construction of 120 degree angle
: Construction of 135 degree angle
Construction of a triangle (S S S criterion)
Construction of a triangle (S A S criterion)
Construction of a triangle (A S a Criterion)

GEOMETRY-FUNDAMENTAL CONCEPTS

Perimeter of a square
Perimeter of a rectangle
Perimeter of a triangle
Triangles as parts of rectangles
Perimeter of a rhombus
Perimeter of a parallelogram
Area of a parallelogram
Area of a square
Area of a rectangle
Area of a right isosceles triangle
Area of a right angled triangle
Circumference of a circle
Area of a circle
Applications: Area between two concentric circles
Applications: Area between two rectangles



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GEOMETRY -ANGLES

Multiplication of decimal numbers by a whole number
Multiplication of a decimal by a decimal
Multiplication of decimal numbers by 10, 100 and 1000
Division of a decimal number by 10, 100 and 1000
Division of a decimal number by a whole number
Division of a decimal number by another decimal number
Simplification problem
Conversion of units

GEOMETRY -TRIANGLES

Faces, edges and vertices
Nets for building 3D shapes
Drawing solids on a flat surface: Oblique sketches
Isometric sketches
Viewing different sections of a solid shape
Shadow play
View of an object from different angles

GEOMETRY – CIRCLES

Symmetry
Lines of symmetry
Rotational symmetry

GEOMETRY – SYMMETRY

Concept of exponents
Conversion into power notation
Multiplying powers with the same base
Dividing powers with the same base
Taking power of a power
Multiplying powers with the same exponents
Dividing powers with the same exponents



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Numbers with exponent zero
Numbers with negative exponents
Expressing numbers in the standard form
Expressing large numbers in the standard form
Simplification of exponents
Important short cuts

GEOMETRY – REPRESENTING 3D IN 2D

How are expressions formed?
Terms of an expression
Like and unlike terms
Degree of a polynomial
Monomials, Binomials, Trinomials and polynomials
Addition of algebraic expressions
Subtraction of algebraic expression
Finding the value of an expression
Using algebraic expressions: Perimeter and area formulas

SCIENCE

NUTRITION IN PLANTS

Mode of nutrition in plants
Photosynthesis
Heterotrophic mode of nutrition
Parasitic plants
Insectivorous plants
Saprophytes
Lichens
How nutrients are replenished in the soil
Classify the following
Multiple choice questions
Match the following
True or false
Label the parts

NUTRITION IN ANIMALS

Different ways of taking food



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Star fish takes food
Schematic representation of digestive system
Human digestive system
Different types of teeth
Dental hygiene
The mouth, buccal cavity and oesophagus
Stomach
Small intestine
Large intestine
Nutrition in ruminants
Feeding and digestion in amoeba

FIBRE TO FABRIC

Animal fibres
From fibres to wool
Rearing and breeding of sheep
Processing of wool
Silk fabric
Life cycle of a silk moth
Rearing of silk worms
From cocoon to silk

HEAT

Hot and cold
Measuring and reading temperature
Transfer of heat- Conduction
Conduction of heat in different materials
Convection of heat
Sea breeze and land breeze
Radiation
Conductors and insulators
Kinds of clothes we wear in summer and winter

ACIDS, BASES AND SALTS

Acids
Types of acids
Bases
Properties of bases and their uses
Neutral substances



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Indicators

Universal indicators

Neutralisation

Neutralisation in everyday life

Ant sting

Neutralisation used in soil treatment

Neutralisation of factory waste

PHYSICAL AND CHEMICAL CHANGES

Physical changes

Chemical changes

Burning of magnesium

Change in colour of copper sulphate due to the reaction with iron

Other chemical changes

Chemical changes in food

Rusting of iron

Rusting of iron requires both oxygen and water

Prevention of rust

Galvanisation

Crystallisation

WEATHER, CLIMATE AND ADAPTATIONS

Weather

Rain gauge

Climate

Seasons

Greenhouse effect

Climate and adaptations

Other Animals in the polar region

Migration of Siberian crane

Adaptation of animals in the tropical rainforests

Adaptation of elephants

WINDS, STORMS AND CYCLONES

Air exerts pressure

Wind Speed and reduced air pressure

Air expands on heating

Wind Currents due to uneven heating on the earth

Monsoon

Thunder storms



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What is a cyclone?
How is a cyclone formed?
Destruction caused by cyclone
Tornado
Anemometer
Cyclone warning

SOIL

Soil
Weathering
Soil profile
Soil types
Properties of different types of soil
Composition of soil
Percolation rate of water
Moisture in soil
Soil contains air
Soil erosion
Soil and crops

RESPIRATION IN ORGANISMS

Why do we respire?
Muscle cramps
Anaerobic respiration in yeast
Breathing
How do we breathe?
The movement of diaphragm and the rib cage
What do we breathe out?
Breathing in other animals
Breathing under water
Respiration in plants

TRANSPORTATION IN PLANTS AND ANIMALS

Circulatory system
Blood
Blood vessels
Difference in blood vessels
Human heart
Heart beat



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Human excretory system

Sweat

Transportation of substances in plants

Transpiration

LIGHT

Light travels in a straight line

Reflection of light

Plane mirror

Playing with spherical mirrors

Concave mirror

Convex mirror

Uses of mirrors

Lenses

Convex lens

Concave lens

Image formed by a convex lens

Image formed by a concave lens

Uses of lenses

Sun light –White or coloured?

Newton's disc

ELECTRIC CURRENT AND ITS EFFECTS

Symbols of electric components and circuit diagram

Electric cell and current Flow

A truck battery

Electric circuit

Heating effect of electric current

Electric fuse

How an electric fuse works

Miniature circuit breakers

Electromagnets

Schematic representation of an electric bell

Electric bell

MOTION AND TIME

Slow or fast

Rectilinear motion

Speed



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Simple pendulum
Sand clock
Distance and time
Speedometer and odometer
Distance –time graph

REPRODUCTION IN PLANTS

Mode of reproduction
Vegetative reproduction in potato
Other examples of vegetative reproduction
Reproduction in bryophyllum
Budding in yeast
Fragmentation
Spore formation
Sexual reproduction
Pollination
Fertilisation
Fruits and seed formation
Seed dispersal

WATER: A PRECIOUS RESOURCE

How much water is available?
Forms of water
Water cycle
Ground water : An important source of water
Depletion of water table
Distribution of water
Rain water harvesting
Drip irrigation
Conserve water
Plants need water

FORESTS: OUR LIFELINE

Forest
Animals in the forest
Trees form a canopy
Forest floor
How forest related to our life
How forests are important in our life



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WASTEWATER STORY

Water our lifeline

Water freshens up –An eventful journey

Sewage water

Waste water treatment plant

Sanitation and disease

Alternative sewage disposal