CLASS VII Mathematics CURRICULUM (2018-19)

S.N	Content	Objective	Skills	Learning style	Activity	Subject Integration	Outcomes	Assement
1	**Fractions and Decimals**	*To add and subtract fractions *To multiply two or more fractions *To find the reciprocal of a fractions * To divide fractions with whole number and fractions * To add , subtract, multiply or divide decimal numbers *To convert fractions into decimal or vice- versa	Application skills:- Apply the rules of converting length , money etc. to find out solution of real life situations. calculative skills:- will solve the four operations on fractions& decimals Reasoning skills:- Decimals are also fractions having denominator 10, 100 or 1000 etc. only way of representation is different Content organisation:- can organise the data given in problems. Expression skills:- form mathematical expression for the given word problems.	Verbal - linguistic--> Kinesthetic bodily style --> Interpersonal--> logical - mathematical--> visual -spatial--> Intrepersonal --> Musical smart-->	Explanation of operations on decimals and fractions and their conversions into each other . Multiplication of two fractions on origani sheets by colouring parts Recapitulation of different types of fractions by asking questions will use properties of fractions by asking questions. will use properties of fractions and decimals in conversions of units . Observe the decimal places of a number will do the calculations stepwise . Reciting the metric mambo K H D A M D C M king Harry Died Mother did not cry Much.	sst:* Distribution of land into fractions of continents. *Measurements of rainfall , temperature area etc. upto exact decimal point Science:- Solving the numericals related to approximate distance, velocity etc. upto decimal point system English:- Word problems. Drawings :- In measuring lines upto exact point system	Students will be able to simplify the expressions and equations involving fractions or decimals Students will also be able to convert decimals into fractions and vice- versa .	* Oral test * Pen paper test.
		* To Understand The Difference	Representation Skills:	Verbal-Linguistic:	Negative Rational Numbers		Involving Rayional Numbers. They Will	

2	**Rational Numbers**	Between Fractions And Rational Numbers. * To Write A Rational Numbers In Its Standard Form. *To Represent Rational Numbers On Number Line * To Perform The Operations On Rational Numbers *To Represents Rational Numbers As Decimal.	To Represent Rational Numbers On A Number Line. Reasoning Skills: *Will Reason Out That A Fraction Is A Rational Number But A Rational May Not Be A Fraction. * Whole No , National No Integers, Fractions Are All Rational Numbers Calculative Skills:- Wil Solve The Operations On Rational Numbers. Problem- Solving Skills: Will be able to solve Real-Life Problems Related To Rational Numbers. Ordering Skills: Will Arrange Positive And Negative Numbers Content Organisation: Organise The Data Given In Word Problems Step Wise To Form mathematical expression	**Bodily Kinesthetic:** **Interpersonal:** **Logical Mathematical** **Visual Spatial:** **Inter Personal:**	And Their Uses. Rational Numbers Written On Flash And Activity Arranging Arranged On Number Line. Discussions On Term ' Rationalism O Is The Only Rational Number Whose Negative Is The Number Itself . Representation Of Rational No.'S On Number Line. Will Classify Rational Numbers Into Terminatory And Non - Terminatory Decimals . Will Perform Operations On Rational No.'S	English:-*Poems Written On Rationalism' Word Problems Science:- In Solving Numericals Of Acceleration , Velocity Etc.	Understand That We Can Find Infinite Number Of Rational Numbers Between Any Two Rational Numbers.	*Pen Paper Test *Oral test
3	**Exponents and power**	To enable students to *To express numbers in exponential form	Calculative Skills:- To solve expression using laws of exponents.	**Verbal-linguistic:**	Explanation of term base, index and meaning of power notation & its laws.	Science: in measuring large distance like distance covered in	Students will be able to simplify the expressions involving	*Pen Paper

S.No	Topic	Objectives	Skills	Multiple Intelligences	Activities / Methodology	Integration	Learning Outcome	Assessment
		* To understand the laws of exponents. *To simplify exponential expression easily using laws of exponents *Standard Form or Scientific notation for expressing numbers.	Application skills:- using laws of exponents in solving numericals of physics & chemistry. Reasoning skills:- $(a^m)^n=(a^{(m^n)}$, $2^2 + 2^3 \neq 2^5$ *we do not have law of addition of exponents Expression:- can express numbers in scientific form.	Kinethetic/bodily: Interpersonal: Logical mathematical: Visual spatial: Intrapersonal:	Exponents of any number can be shown by folding organic sheets. Discussion about large numbers and ways to express them . choose which laws to be used for solving expressions. Identify the bases are same as or not for applying laws of exponents. Will solve the expression using laws of exponents and can write numbers in scientific form.	revolving in one orbit of earth. *Cells number is always written in form of exponents. *molecules of elements are expressed in exponents.	very large numbers easily using the laws of exponents.	Test *Oral test
4	**INTEGERS**	*To enable the students to understand *Operation (+,-,*,/) on integer *properties of addition, substraction,multiplication, and division of integers. *distribution property of integers. *Simplification of integer. *To know that division of an integers by 0 is not defind.	*Calculative skills: able to calculate (+,-,*,/) on integer. *Representation skills: to represent addition snd substraction of integers on numbers line. *Reasoning skills: to verify the properties of (+,-,*,/) on integers. *Expression skills: converting word problems into mathematical form.	Verbal-linguistic Body-kinectic Inter personal Logical/mathematical Visual-style Intra personal	*Explanation of properties of (+,-,*,/) on integers. *To strenghten the concept of operations on integers through card game. Discussion on the uses of positive numbers and negative numbers. They will apply that positive Numbers are always greater than negative numbers.-5<6 Obeserve the representation of +,-,*,/ on integers on number line. *They will do the four basic operations on integers and solve sums based on properties of integers.	Science: in solving numericals in formation of ions. S.st: temprature of any area is measured in integers. literature:human temp- Erament.People have Positive and negative attitudes.	Students will understand the need for integers. They will appreciate the universality of propert- ies for all integers.they will also apply the distributive property to multiply two numbers easily.	*By pen paper test *by oral problemsa.
5	**Algebric expression**	*To understand the difference	Calculative skills :	Verbal linguistic:	By explaining terms, degree	Science: Generalisation of	Students will learn to simplify	*Pen Paper

No.	Topic	Objectives	Skills	Multiple Intelligence	Methodology / Activities	Interdisciplinary Links	Learning Outcome	Assessment
		between co efficients,factors and terms.	By solving algebraic expressions using tranposition method.		and types of algebraic expression.	formula of velocity, acceleration,work,power, etc. *In solving numericals. English:Use of alphabets as variables.	the expressions which will further help to solve the equations. They will also use the concept of algebraic expressions as formulae for finding perimeter and area of plame figures.	*MCQ *Riddles
		*To simply expression by adding or substracting like terms. *To find the value of an expression. *To understand the types of algebraic expression . *To simplify expressions using brackets.	Observation skills: * By observing matchsticks pattern to generalise the formula. * By observing like terms to add or substract. Logical skills/Reasoning: Reason out how formula for perimeter and area derived. Expression skills : To form algebraic expression for the statement. Application skills: Use of algebraic expression in finding ages, perimeter,area and volume.	Kinesthetic/Bodily: Interpersonal: Logical. Mathematical: Visual spatial: Intrapersonal:	By forming pattern and then generalise the formula. Discussions on uses of algebraic expression like perimeter ,velocity,etc. Use of hide and trial method for checking whether the given variable is the solution of equation or not. By observing like terms to solve the sums. By solving algebraic expression.			
6	**Simple Equations**	*To enable the students. *To understand the meaning of linear equations in one variable . * To solve given equation by trial and error method	*Social skills : Will be developed solving day to day life problems like finding age, cost etc. *Logical skills :Use logics to solve the problems *Emotional skills: To balance the	Verbal-Linguistic: Explanation of linear equation concept. Bodily- Kinesthetic: Role play activity of linear concept using paper strips.(visual-smart, self smart,logic smart).	Role play: Comparing the ages of mother and a child after few years and finding their present age. Lab Activity: To solve linear equation in one variable using paper strips.	Science:In finding unknown quantities like speed,velocity, etc. and deriving the formulas. English:To form statement of word problems. S.ST: To balance plants and	Students will be able to convert day to day problems into equations and solve them and correlate them with real life situations.	1. Pen Paper Test 2. Oral Assesment

#	Topic	Objectives	Skills	Multiple Intelligence		Subject Integration	Learning Outcome	
		and by trasposition method. *To frame the equation form the given statement and its solution. *To verify the solution of an equation.	equation of life by adding or substracting the needs. *Group work: Role play by the students. *Expression: Constructing an equation.	Role play: Body-smart, people smart and visual smart. Logic-Mathematical: To solve the problems.			and animals on earth.	
7	**COMPARING QUANTITIES**	To enable the students to Understand .To convert quantities with The help of ratio . .To convert ratio into percentage And vice versa .To calculate profit , loss, profit% Loss% using c.p. and sp .To calculate simple interest at given rate And for certain time period	*<u>Calculative skills</u>:-will be able to convert Percent into decimals and ratio etc. * <u>problem -solving</u> :-will be able to solve Real life problems related to ratio , Percentage and profit and loss. * <u>expression</u> :-will form statement Of word problems . *<u>reasoning sklls</u>:- find out whether They are getting profit or loss. *<u>content organisation</u>:- will organised The things given in real life problems.	<u>Verbal-linguistic</u>: <u>Bodily- kinesthetic</u>: <u>Interpersonal</u>: <u>Logic-mathematical</u>:-	Explanation of ratio,proportion Proportion ,meaning of simple Interest & terms related to It and profit & loss . Will design squared paper With different colours by their Percentage . Disscussion on Beautification added by proportion .banking and it usees for explaining Si Will choose which forumla to be Used for calculating s.p. or c.p. When loss% or gain% given . Will do the calculations stepwise And solve the real - life problems .	1 science: * ratio of hydrogen and Oxygen in water is 2:1 * percentage composition of various Elements in compounds 2 sst: *ratio of girls or boys to given Population *% increase in number of population English:statement of word problems.	Students will use ratio and percentage to Compare their performance with other Students in the class . They will also use These concepts of percentage wih profit And loss.	
8	**Geometry:** **Lines And**	Students will enable *To Identify The Types Of Angles And	*<u>Identification Skills:</u> Identify Angles After Observing Figure.	Verbal-Linguistic	Logical-Mathematical	Explanation Of Pairs Of Angles: Supplementary,Adjacent,Comple ments	Students will be able To Identify And Differentiate	

No.	Topic	Objectives	Skills	Multiple Intelligence	Methodology		Values	Resources
	Angles.	Lines On The Basis Of Measurement And Relationship With Other Angles. *To Know The Relationship Between Angles Formed By A Transversal If The Lines Are Parallel.	*Drawing Skills: Draw The Figure. *Calculative Skills: Will Find Out *Reasoning Skills: Differentiate Between Complemantary And Supplementary Angles. *Application Skills: Will Apply The Properties Of Alternate, Corresponding,Interior Angles For Finding Angles In Given Figure.	Bodily- Kinesthetic Visual- Spatial Intrapersonal		And Angles Made By Transversals. Crossing Of Two Fingers To Form Vertically Opposite Angles And Linear Pairs. Recapitulation Of Types Of Lines And Angles. Use Of Properties Of Angles Made By Parallel Lines And Transversals For Solving Sums. To Identify The Angles Like Alternate, Corresponding, Interior,Adjacent Angles. To Draw The Figures Will Solve The Sums By Using Properties Of Angles And Lines.	Between Various Kind Of Angles. They Will Use These Relations In Solving The Problems Of Parallelogram,Trapezium And Other Plane Figures.	
9	**Practical Geometry**	* To Construct Parallel Lines Using Different Techniques. * To Construct Triangle With Given Measurment Of Sides And Angles. *To Identify Whether It Is Possible To Construct A Triangle	Drawing Skills- To Construct A 11 Lines ,Triangles An Congurency Criteria By Using Scale, Compass. Observation Skill- By Observing The Criteria , Students Will Able To Construct The Triangle Of Given Problem. Measuring Skills- To Measure The Sides	Verbal/Linguistic Kinestic/Bodily Interapersonal	Explanation Of Concept Of Construction Of Triangle And Its Type. By Constructing Equilateral Triangle By Using Ruler And Compassand Organic Sheet. By Disscussing The Properties Of Triangle And Its Type Of Congurency Rule Applied.	Science- Construction Of Diagrams, Other Scientific Diagrams. Drawing- Drawing Figures With Accuracy. They Will Value And Appreciate The Accuracy Reqd. In Construction.	Students Will Learn To Handle Geometrical Instruments Like Scale, Compass, Set Squares And Protector.	1. Pen And Paper 2. By Practical Activity (Maths Lab)

10	**Triangle and its properties**	With Three Given Measurements. * to identify various parts of a triangle. * to identify the types of triangles. * to draw altitude and medians in a triangle. *to understand and use the angle sum property and ext. angle property of a triangle. * to learn the properties of a right triangle , isosceles triangle and scalene triangle.	And Angles Of A Triangle Analytical Skill-By Recollecting The Knowledge Of Properties Of Triangle, 11 Line And Congurency , Students Will Able To Co-Relate The Given Problem And Construct The Triangle. <u>drawing skill</u> they draw the different types of triangle . <u>observation skill</u> they observe the altitudes, medians and orthocentre, centroid of the triangle, <u>analytical skill</u> they analyse the given problem and identify the property which to be used. <u>calculation skill</u> they find the measurment of angles by using properties of triangle angle length of sides by using pythagoras theorem.	Logical Visual <u>verbal/linguistic smart:-</u> <u>kinesthetic/body skill</u> <u>interpersonal</u> <u>logic smart</u> <u>visual smart</u> <u>intrapersonal</u>	Justification Will Be Given For Construction Of Triangle By Using Different Properties Of Triangle. By Constructing And Observing Rough Sketch Of Triangle. By Constructing Problems Themselves. *explanation of types of triangle on he basis of sides and angle by taking examples. *observe the altitude , median, orthocenter center, centroid of a triangle by paper folding. *discussion on the problem based on this chapter. *find the value of angles and sides. * they will observe the right triangle using square sheet and state pythagoras theorem. *they will use the pythagoras theorem in finding sides of right triangle.	<u>drawing:</u> in drawing patterns, shapes. <u>science:</u> in observing the shapes of scientefic instruments. In finding the length of shadow of object by usinhg pythagoras theorem.	students will be able to identify types of triangle and use special properties of triangles in solving the problems.they will appreciate and verify the facts about triangles stated in the form of properties.	*pen-paper test

					naturalistic	*trunk of tree malces a right angle triangle with a ground.		
11	**Congurent Triangles** like circle , sq.rec * criteria for congurence -SSS , SAS , ASA , AAS	* To recognise whether two figures are congurent *To check whther given D are congurent * To list the corresponding parts of congment -D	Drawing skill:- by drawing two congurent figures D observation skill:- observe the figure and identity the criteria to be used Analytical skills:-analyse line problem minutely to get congurent parts of corresponding D.	verbal - linguistic style--> kinestic/ bodily style -> interpersonal--> logical smart--> visual smart --> interpersonal-->	explanation of the word CONGURENCY by taking daily life example * explanation of all criteria of congurency (sss) ,(sas), (asa) (rhs) To verify the congurency for traingles by paper cutting recaptutation of properties of D by using oral q find the logic behind line congurency of two D by using criteria of congurency * practice of question related to it . identity , drawing, the congurent figures they will observe the fig . Minutely and identify which criteria is to be used to prove the fig. That it is congurent	Drawing --> in drawing two same size same dimensions fiqures. s.s.t.--> for drawing two same maps	students will learn that unlike other plan figure , congurency of D can be checked using certain criteria . student will learn to identify the corresponding parts in congurent D	by pen and paper test by activity giving two D or two fig.
12	**visualizing solid shapes.**	*difference between 2D and 3D shapes.	drawing skill:- by drawing 2D and 3D figures.2D- sq, rectangle,circle,	* to differentiate between 2D and 3D figure.	verbal/ linguistic smart	explanation of faces , edges and vertices of 3D figures, explanation of	drawing- in drawing different 3D objects by measurement.	students will understand the parts(vertical, edges,faces)

		*geometrical solids and their elements. *identifying and naming different solids. *making variety of nets to form 3D shapes. *representing 3D shapes or a sq. or an isometricdot sheet.	triangle,3D -cube , cuboid, prism , pyramid. observation skill:- observe the figure and identify the how given 3D shape is to formed , by joining which 2D shapes, *observe their faces , edges, vertices. creative skill:- create the net of 3D shapes. thinking skill:- create different types of net of one 3D figure . analytical skill:- complete the pattern by observing reason.	* to learn to make 3D objects using paper cutting and folding (with the help of nets) *to draw the 2D images of 3D obects using isometric and sq. paper. *to visualise the cross section of different solids.	kinestic/bodily smart interpersonal logic smart visual smart interapersonal naturalistic		diffrence between 2D and 3D shapes. forming the nets of cube, cuboid, square pyramid, triangular pyramid, prism , cylinder. discussion on 3D picture and its application over day to day life. they will obeserve that why 3D figure have mass and volume . they wil draw figures on isometric sheets , identify the top and part view of figure. they will find out face, vertices by euler's formula. 3D figure in like egypt pyramid, x-mas in triangular pyramid.	of 3D objects and learn to draw3D objects.
13	**Mensuration** perimeter and area	*To calculate the perimeter and area of 2D shape . *To learn the difference between perimeter and area *To know that circumfrence is the perimeter of a circle	*Expression skills: converting word problems into mathematical expression (equation) *observation skills: they will observe the figures minutely	* verbal linguistic: by explaining word problems . *Bodily - kinesthetic : activity based on find the area of tiles in class . * Interpersonal : group discussion	*perimeter of class room and material like top of the bench etc. *area of tissue paper or organic sheet .	s.s.t.: Area of land of different states . eng: word problems games: area and boundary covered for games like badminton, carrom , etc.	* They will learn to differentiate between perimeter and area * they will be able to use the learnt forumale in their day to day lives	pen paper test . oral test : listen forumla's

		*To recognise the constant p. * To derive forumale for plane figures: parallelogram , traingle and circle and applying formulae to find area between two rectangles, between two circles. *To apply the concept of area and perimeter in daily life situations.		on where to use perimeter and area * Logical - mathematical : solve the problems by using forumals . *visual - spatial: by drawing figures *interpersonal : by doing calculation * musical smart : poem on perimeter and area . * nature smart : by correlating topic with figures present in nature			Drawings : drawing the shapes .	
14	**Statistics :-** Data handling	* To calculate central values like mean , median and mode. *To represent given information or data pictorically with the help of bar graphs. *To represent comparative data with the help of a double bar graph . *To calculate numerically , the chance of happening of an event .	Drawing skill: by drawing pictograph and bar graph , double bar graph *To reprsent comparative data with help of bar graph *To calculate numerically , the chances of happening of an event	verbal \ linguistic : kinestic \ bodily: logical : visual: interpersonal: interapersonal : natural smart :	by explaining the concept of arranging the data *by exp. The concept probability . by collecting the marks of 5 students in various subjectof SA -1 and representing it by bar graph. *performing activity of dice and coin. by giving formula for finding mean,mode and median. by drawing and observing the bar graph by discussing which graph used in day to day life. by representing any information in the tabular form.discussion on prediction of whealth report.	*S.st:- increse in population by bar graph. *Science:- life cycle of human life and growth and development graph according to particular age. *Sports:- height and weight of person can be and represent by graph. most of the games uses bar graph to represent information. *S.st:- (Probability) weather forecast *Science:-outcome of experiment.	*Students will be able to understand and analyse tabular and graphical dots given in newspaper ,magzines,etc. *Students will be able to calculate mean marks scored by them in certain subject ,term ,etc. *Students will appreciate that possibility of happening of any event can be calculated as a value between 0 and 1.