

**First Terminal Examination**

Unit	Topics	Content	TP	Teaching methods	Teaching Materials	Evaluation	Rem
1	Geometry	<ul style="list-style-type: none"> <li>* Angles and parallel line.</li> <li>* Types of angles (vertically opposite angle, adjacent angle, complementary angle and supplementary angle)</li> <li>* Types of angles ( Alternate angle, co-interior angle, corresponding angle )</li> </ul>	6	<ul style="list-style-type: none"> <li>* Method of question/ answer and discussion.</li> <li>* Method of demonstration</li> <li>* Problem solving method.</li> <li>* Research method</li> </ul>	Wooden or paper triangle or quadrilaterals etc are required. Geo box Ruler	<ul style="list-style-type: none"> <li>* To observe their change and improvement or in their behaviors activities.</li> <li>* Participation of students on class work and other activities.</li> <li>* To use mathematical skills in practice.</li> <li>* Written work (like class work and home work) and practical work.</li> </ul>	
2	Co-ordinate Geometry						
3	Mensuration	<ul style="list-style-type: none"> <li>* Perimeter and area of plane figure (square, triangle, rectangle, e.t.c.)</li> <li>* C.S.A &amp; T.S.A of cylinder</li> <li>* LSA, TSA of Cube &amp; Cuboid</li> </ul>	10	<ul style="list-style-type: none"> <li>* Method of question/ answer and discussion.</li> <li>* Method of demonstration</li> <li>* Problem solving method.</li> <li>* Research method.</li> <li>* Inductive and deductive method.</li> <li>* Practical method</li> <li>* Analysis and synthesis method.</li> </ul>	Measurement tape, Scale etc. are required. Different solids and their nets.	<ul style="list-style-type: none"> <li>* To observe their change and improvement or in their behaviors activities.</li> <li>* Participation of students on class work and other activities.</li> <li>* To use mathematical skills in practice.</li> <li>* Written work (like class work and home work) and practical work.</li> </ul>	
4	Transformation						
5	Set	<ul style="list-style-type: none"> <li>* Review</li> <li>* Proper and improper subset.</li> <li>* Complement of the sets</li> </ul>	4	<ul style="list-style-type: none"> <li>* Method of question/ answer and discussion.</li> <li>* Method of demonstration</li> <li>* Problem solving method.</li> <li>* Research method.</li> <li>* Inductive and deductive method.</li> <li>* Practical method</li> <li>Analysis and synthesis method.</li> </ul>	Two or three ring and wooden block numbers etc are required. Punch tapes.	<ul style="list-style-type: none"> <li>* To observe their change and improvement or in their behaviors activities.</li> <li>* Participation of students on class work and other activities.</li> <li>* To use mathematical skills in practice.</li> <li>* Written work (like class work and home work) and practical work.</li> </ul>	
6	Arithmetic	<ul style="list-style-type: none"> <li>* Whole numbers</li> <li>* Addition and subtraction of binary and quinary numbers.</li> <li>* Real numbers and Integers</li> <li>* Law of operation of integers.</li> </ul>	8	<ul style="list-style-type: none"> <li>* Method of question/ answer and discussion.</li> <li>* Method of demonstration</li> <li>* Problem solving method.</li> <li>* Research method.</li> </ul>		<ul style="list-style-type: none"> <li>* To observe their change and improvement or in their behaviors activities.</li> <li>* Participation of students on class work and other activities.</li> <li>* To use mathematical skills in practice.</li> <li>* Written work (like class work and home work) and</li> </ul>	

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**C. Mathematics**

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				* Inductive and deductive method. * Practical method Analysis and synthesis method.		practical work.	
7.	Statistics						
8.	Algebra	* Review * Polynomials. * Factorization of polynomial having monomial factor, common pairing, grouping factor of the type $ax^2+bx+c$ .	8	* Method of question/ answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Practical method Analysis and synthesis method.	Algebraic files, factorization and multiplication addition , formulation and subtraction using files.	* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * To use mathematical skills in practice. * Written work (like class work and home work) and practical work.	
<b>Revision</b>			6	Teachers can revise the lessons, observe the copies, deal with difficult problems faced by students			
<b>Total working days From Jestha 3 to Ashad 21, 2079</b>			42				

**Class 8**

**F.M =100**

**Subject: C. Maths**

**Specification Grid of Class 8 (First term)**

Area	Content/ cognitive domain	V. Short		Short		Long		Total no. of question	Total Marks	Total time
		KU	Skill	KU	Skill	Skill	P.S.			
Geometry	*Angles and parallel line * Type of angles		2	1	2	1	2	8	20	36 min
Co-ordinate Geometry										
Menstruation	*Perimeter and area of solids and plane figure		1	2		1	1	5	13	24min
Transformation and Bearing and scale										
Set	*Review, Definitions, Examples, Proper and improper subset		1		2	1	1	5	13	23 min
Arithmetic	*Whole number	1		2		1		11	25	45 min
	*Add, sub, binary and square	1		1			1			
	*Real number	1			2		1			
Statistic										
Algebra	* Polynomials *Factorization of common, pairing.	1	2	2	3	2	2	12	29	52 min
Total		10		17		14		41	100	180min

**Mid Terminal Examination**

Unit	Topics	Content	TP	Teaching methods	Teaching Materials	Evaluation	Remarks
1	Geometry	* Triangles, polygon and parallelogram(measurement ) of angles * Verification of sides and angles of triangle and parallelograms. * Construction of polygon	12	* Method of question/ answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Practical method Analysis and synthesis method.	Paper or wooden shape of parallelogram. Mathematics chart.	* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * To use mathematical skills in practice. * Written work (like class work and home work) and practical work.	
2	Co-ordinate Geometry						
3	Mensuration	* Volume of solids figures, (cubes, cuboids and cylinder) * Surface area and volume of triangular prism.	9	* Method of question/ answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Practical method Analysis and synthesis method.	Hard paper , bamboo, pipe , ball, Ice cream cone etc. Solids and their nets.	* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * To use mathematical skills in practice. * Written work (like class work and home work) and practical work.	
4.	Transformation and bearing and scale						
5	Set	* Difference of sets and their Venn-diagram	4				
6.	Arithmetic	* Rationalization of number. (i) Addition and subtraction radicals (ii) Rationalization of the denominator. (iii) Scientific notation of the numbers and Simplify. *Profit and loss * Ratio, proportion and percentage	13	* Method of question/ answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Practical method Analysis and synthesis method.		* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * To use mathematical skills in practice. * Written work (like	

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						class work and home work) and practical work.	
7.	Statistics						
8.	Algebra	<ul style="list-style-type: none"> <li>* Factorization of difference of two squares and cubes.</li> <li>* Indices.</li> <li>* L.C.M and H.C.F</li> <li>* Multiplication and Division of rational expressions.</li> </ul>	11	<ul style="list-style-type: none"> <li>* Method of question/ answer and discussion.</li> <li>* Method of demonstration</li> <li>* Problem solving method.</li> <li>* Research method.</li> <li>* Inductive and deductive method.</li> <li>* Practical method Analysis and synthesis method.</li> </ul>	Files for squares , rectangle , cube and cuboids	<ul style="list-style-type: none"> <li>* To observe their change and improvement or in their behaviors activities.</li> <li>* Participation of students on class work and other activities.</li> <li>* To use mathematical skills in practice.</li> <li>* Written work (like class work and home work) and practical work.</li> </ul>	
<b>Revision</b>			3	Teachers can revise the lessons, observe the copies, deal with difficult problems faced by students			
<b>Total working days From Shrawan 1 to Bhadra 31</b>			52				

**Class 8**

**F.M =100**

**Subject: C. Maths**

**Specification Grid of Class 8 ( Mid- term)**

Area	Content/ cognitive domain	V. Short		Short		Long		Total no. of question	Total Marks	Total time
		KU	Skill	KU	Skill	Skill	P.S			
Geometry	*Angles and parallel lines	1						11	25	45 min
	*Types of angles		1		1					
	*Triangle, polygon and parallelogram			2	1		1			
	*Verification of triangles theorem					1				
	*Construction of polygons		1		1		1			
Co-ordinate Geometry										
Menstruation	*Perimeter and area of solid figure		1		1	1		6	17	31 min
	*Volume of cube, cuboids and solid figure.				1		2			
Transformation and Bearing and scale										
Set	*Use Venn-diagram		1			1		2	5	9 min
Arithmetic	* Rationalization of number		2	1				11	25	45 min
	*Scientific notation									
	*Whole numbers, add, subtraction of binary and quinary numbers.			1		1				
	*Real Numbers					1				
	*Profit / Loss				2		1			
	*Ratio proportion and percentage	1			1		1			
Statistics										
Algebra	*Polynomial		1	2			2	11	28	50 min
	*HCF and LCM					2	2			
	*Factorization									
	*Indices	1		1						
Total			10		17		14	41	100	180min

**Second Terminal Examination**

Unit	Topics	Content	TP	Teaching methods	Teaching Materials	Evaluation	R.
1	Geometry	<ul style="list-style-type: none"> <li>* Test of opposite side of parallelogram.</li> <li>* Test of opposite angles of parallelograms.</li> <li>* Test of diagonal of parallelogram.</li> <li>* Test of rectangle and square.</li> <li>* Congruency and similarity of triangle</li> </ul>	12	<ul style="list-style-type: none"> <li>* Method of question/ answer and discussion.</li> <li>* Method of demonstration</li> <li>* Problem solving method.</li> <li>* Research method.</li> <li>* Inductive and deductive method.</li> <li>* Practical method</li> <li>Analysis and synthesis method.</li> </ul>	Wooden or paper triangles etc. are required. Paper folding origami.	<ul style="list-style-type: none"> <li>* To observe their change and improvement or in their behaviors activities.</li> <li>* Participation of students on class work and other activities.</li> <li>* To use mathematical skills in practice.</li> <li>* Written work (like class work and home work) and practical work.</li> </ul>	
2	Co-ordinate	Slope of straight lines	5		Graph Paper, Geo Board		
3	Menstruation	* Solids and their nets	4	<ul style="list-style-type: none"> <li>* Method of question/ answer and discussion.</li> <li>* Method of demonstration</li> <li>* Problem solving method.</li> <li>* Research method.</li> <li>* Inductive and deductive method.</li> <li>* Practical method</li> <li>Analysis and synthesis method.</li> </ul>	Chart of nets of different solids.	<ul style="list-style-type: none"> <li>* To observe their change and improvement or in their behaviors activities.</li> <li>* Participation of students on class work and other activities.</li> <li>* To use mathematical skills in practice.</li> <li>* Written work (like class work and home work) and practical work.</li> </ul>	
4.	Transformation						
5.	Set						
6.	Arithmetic	* Unitary method	5	<ul style="list-style-type: none"> <li>* Method of question/ answer and discussion.</li> <li>* Method of demonstration</li> <li>* Problem solving method.</li> <li>* Research method.</li> <li>* Inductive and deductive method.</li> <li>* Practical method</li> <li>Analysis and synthesis method.</li> </ul>	Data collection and preparation	<ul style="list-style-type: none"> <li>* To observe their change and improvement or in their behaviors activities.</li> <li>* Participation of students on class work and other activities.</li> <li>* To use mathematical skills in practice.</li> <li>* Written work (like class work and home work) and practical work.</li> </ul>	
7.	Statistics	<ul style="list-style-type: none"> <li>* Review</li> <li>* Use of tally marks.</li> <li>* Cumulative frequency tables</li> <li>* Arithmetic mean.</li> <li>* Line graph</li> </ul>	13	<ul style="list-style-type: none"> <li>* Method of question/ answer and discussion.</li> <li>* Method of demonstration</li> <li>* Problem solving method.</li> <li>* Research method.</li> <li>* Inductive and deductive method.</li> </ul>	Graph Paper Data collection and preparation	<ul style="list-style-type: none"> <li>* To observe their change and improvement or in their behaviors activities.</li> <li>* Participation of students on class work and other activities.</li> <li>* To use mathematical skills in practice.</li> <li>* Written work (like class work and home work)</li> </ul>	

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**Class: 8**

				* Practical method Analysis and synthesis method.		and practical work.
8.	Algebra	* Addition and subtraction of rational expression of different denominators. *Quadratic equation	18	* Method of question/ answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Practical method Analysis and synthesis method.		* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * To use mathematical skills in practice. * Written work (like class work and home work) and practical work.
<b>Revision</b>			3	Teachers can revise the lessons, observe the copies, deal with difficult problems faced by students		
<b>Total working days From Asoj 24 to Poush 15</b>			60			

**Class 8**

**F.M =100**

**Subject: C. Maths**

**Specification Grid of Class 8 (Second- term)**

Area	Content/ cognitive domain	V. Short		Short		Long		Total no. of question	Total Marks	Total time
		KU	Skill	KU	Skill	Skill	P.S.			
Geometry	*Angles and parallel lines	1		1			1	7	19	34 min
	*Triangle and Parallelogram				1	1				
	* Experimental Verification					1				
	* Construction of polygon			1						
	*Congruency and similarity									
Co-ordinate	Slope of straight lines			1				1	2	4 min
Mensuration	*Perimeter and area of polygons	1			1			5	13	23 min
	*Volume of solid figures			1			1			
	*Volume of prism						1			
Transformation	Bearing and scale drawing									
Set	*Use Venn-diagram	1			1	1		3	7	13 min
Arithmetic	*Whole numbers / square			1				11	25	45 min
	*Add / Sub (binary & quinary)				1					
	*Rationalization, scientific notation		1							
	*Profit and loss		1				1			
	*Unitary method				1					
	*Ratio and proportion			1			1			
Statistics	Arithmetic mean	1	1		2		1	5	10	18 min
Algebra	*Polynomials	1						9	24	43min
	*Factorization			1		1				
	*Indices		1							
	*LCM / HCF						1			
	*Solution of quadratic equation			1						
	*Simplification of surds				1		2			
<b>Total</b>		10		17		14		41	100	180min

**Annual Examination**

Unit	Topics	Content	TP	Teaching methods	Teaching Materials	Evaluation	R
1	Geometry	* Circumference of circle. * Area of circle.	9	* Method of question/answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Practical method Analysis and synthesis method.	Wooden or paper triangles etc are required.	* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * To use mathematical skills in practice. * Written work (like class work and home work) and practical work.	
2	Coordinate Geometry	* Pythagoras Theorem. * Distance between two points.	4	* Method of question/answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Practical method Analysis and synthesis method.	Graph, Solid figure like triangle.	* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * To use mathematical skills in practice. * Written work (like class work and home work) and practical work.	
3	Menstruation	* Remaining if any left or Second term	3	* Method of question/answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Analysis and synthesis method.	Geo - board	* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * To use mathematical skills in practice. * Written work (like class work and home work) and practical work.	
4.	Transformation and bearing and scale	* Reflection ( axis ) * Rotation ( $\pm 90^\circ$ , $\pm 180^\circ$ , $\pm 270^\circ$ ) * Displacement. * Bearing and scale drawing	10	* Method of question/answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Analysis and synthesis method.	Graph board.  Compass card Magnetic Compass	* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * Written work (like class work and home work) and practical work.	
5.	Set						
6	Arithmetic	* Simple interest	6	* Method of question/answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Analysis and synthesis method.	Interest rate table and convert growth	* To observe their change and improvement or in their behaviors activities. * To use mathematical skills in practice. * Written work (like class work and home work) and practical work.	
7.	Statistics	* Median, mode, pie chart and range	8	* Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Practical method	Graph Paper Data collection and preparatio	* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * To use mathematical skills in practice.	

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				Analysis and synthesis method.	n	* Written work (like class work and home work) and practical work.
8.	Algebra	* Equations Inequality and graph. * Equations and inequality in one variables. * Graphic solution of two variable and linear equation	9	* Method of question/ answer and discussion. * Method of demonstration * Problem solving method. * Research method. * Inductive and deductive method. * Practical method Analysis and synthesis method.		* To observe their change and improvement or in their behaviors activities. * Participation of students on class work and other activities. * To use mathematical skills in practice. * Written work (like class work and home work) and practical work.
<b>Revision</b>			4	Teachers can revise the lessons, observe the copies, deal with difficult problems faced by students		
<b>Total working days From Magh 2- Chaitra 10, 2079</b>			53			

**Class 8**

**F.M =100**

**Subject: C. Maths**

**Specification grid of class 8 (Final - terms)**

S N	Areas	Levels of Objectives	Knowledge and Understanding				Skills				Problem Solving		TN of Q	T M	Time Alloc ations
			Types of Questions		Very Short		Short		Long		Long				
			Topics	NQ	Mks	NQ	Mks	NQ	Mks	NQ	Mks	NQ			
1	GEOMETRY	1. Line & Angles	1	1			1	2					10	22	40Min
		2. Triangle, Parallelogram and Polygon			1	2			2	8					
		3. Similarity and Congruency					2	4							
		4. Circle	1	1			1	2							
		5. Solid Shapes					1	2							
2	CO-ORDINATE GEOMETRY	6. Co-ordinates	1	1			1	2				2	3	5 Min	
3	MENSURATION	7. Perimeter, Area, Volume			1	2					1	4	2	6	11Min
4	TRANSFORMATION	8. Transformation							1	4			2	5	9 Min
		9. Bearing and Scale Drawing	1	1											
5	SET	10. Set	1	1			1	2			1	4	3	7	13Min
6	ARITHMETIC	11. Whole Number	1	1			1	2	1	4			3	7	38 Min
		12. Integer													
		13. Rational Number													
		14. Real Number													
		15. Ratio, Proportion & Percentage			1	2									
		16. Profit & Loss						1	4						
		17. Unitary Method						1	4						
18. Simple Interest								1	4						
7	STATISTICS	19. Statistics	1	1			1	2	1	4			3	7	13Min
8	ALGEBRA	20. Algebraic Expression	1	1	1	2			3	12			12	29	51Min
		21. Indices	1	1			2	4							
		22. Equation, Inequality & Graph	1	1			2	4	1	4					
		Total	10	10	3	6	14	28	10	40	4	16	41	100	180 Min