

MATHEMATICS GRADE 7
AIR FOUNDATION SCHOOL SYSTEM

ISLAMABAD | PAKISTAN



Teaching weeks per annum

For the regions where academic session begins in **April**

FIRST TERM: APRIL – SEPTEMBER

Expected Teaching Weeks

April	Teaching Week 1	Teaching Week 2	Teaching Week 3	Teaching Week 4
May	Teaching Week 5	Teaching Week 6	Teaching Week 7	First Midterm Examination
June	<i>Summer Vacation</i>	<i>Summer Vacation</i>	<i>Summer Vacation</i>	<i>Summer Vacation</i>
July	<i>Summer Vacation</i>	<i>Summer Vacation</i>	<i>Summer Vacation</i>	<i>Summer Vacation</i>
August	Teaching Week 8	Teaching Week 9	Teaching Week 10	Teaching Week 11
September	Teaching Week 12	Teaching Week 13	Midterm Examination	Mid Term Examination

SECOND TERM: OCTOBER – MARCH

Expected Teaching Weeks

October	Teaching Week 14	Teaching Week 15	Teaching Week 16	Teaching Week 17
November	Teaching Week 18	Teaching Week 19	Teaching Week 20	Teaching Week 21
December	Teaching Week 22	Second Midterm Examination	<i>Winter Vacation</i>	<i>Winter Vacation</i>
January	Teaching Week 23	Teaching Week 24	Teaching Week 25	Teaching Week 26
February	Teaching Week 27	Teaching Week 28	Teaching Week 29	Teaching Week 30
March	<i>Revision Work</i>	Annual Examination	Annual Examination	<i>PTM & Annual Day</i>



Teaching weeks per annum

For the regions where academic session begins in **August**

FIRST TERM: AUGUST – DECEMBER

Expected Teaching Weeks

August	Teaching Week 1	Teaching Week 2	Teaching Week 3	Teaching Week 4
September	Teaching Week 5	Teaching Week 6	Teaching Week 7	First Midterm Examination
October	Teaching Week 8	Teaching Week 9	Teaching Week 10	Teaching Week 11
November	Teaching Week 12	Teaching Week 13	Teaching Week 14	Teaching Week 15
December	Midterm Examination	Midterm Examination	<i>Winter Vacation</i>	<i>Winter Vacation</i>

SECOND TERM: OCTOBER – MARCH

Expected Teaching Weeks

January	Teaching Week 16	Teaching Week 17	Teaching Week 18	Teaching Week 19
February	Teaching Week 20	Teaching Week 21	Teaching Week 22	Second Midterm Exam
March	Teaching Week 23	Teaching Week 24	Teaching Week 25	Teaching Week 26
April	Teaching Week 27	Teaching Week 28	Teaching Week 29	Teaching Week 30
May	<i>Revision Work</i>	Annual Examination	Annual Examination	<i>PTM & Annual Day</i>



Allocation of periods

Subjects and period distribution for preparing timetable, syllabus breakdown, lesson plans etc.

SN	SUBJECT	JUNIOR			PRIMARY		SECONDARY			EACH SUBJECT PER ANNUM
		GRADE – 1	GRADE – 2	GRADE – 3	GRADE – 4	GRADE – 5	GRADE – 6	GRADE – 7	GRADE – 8	
1	English Language	5	5	5	5	5	5	5	5	150
2	Urdu Language	5	5	5	5	5	5	5	5	
3	Mathematics	5	5	5	5	5	5	5	5	
4	Science	-	-	-	5	5	5	5	5	
5	General Knowledge	5	5	5	-	-	-	-	-	
6	Sindhi Language ¹	4	4	4	4	4	4	4	4	120
7	Social Studies	-	-	-	4	4	-	-	-	
8	Islamiyat	4	4	4	4	4	4	4	4	
9	Nazra-e-Quran ²	4	4	4	4	4	4	4	4	
10	Geography	-	-	-	-	-	3	3	3	90
11	Computer Science	3 SRM ³	3 SRM	3 SRM	3 SRM	3 SRM	3	3	3	
12	Life Skills	3 SRM	3 SRM	3 SRM	-	-	-	-	-	
13	Artwork	3 SRM	3 SRM	3 SRM	-	-	-	-	-	
14	History	-	-	-	-	-	2	2	2	60
15	Life Skills & Art	-	-	-	2 SRM	2 SRM	-	-	-	
		-	-	-	-	-	1 SRM	1 SRM	1 SRM	30
PERIODS PER WEEK		37	37	37	37	37	37	37	37	

¹ In Sindh Region only

² In all regions except Sindh

³ SRM: (Supplementary Reading Material)



WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
1 /30	1.	Unit 1: SETS What is Set? How is set represented? Venn Diagrams (example 1 & 2) Page: 4 to 6		
	2.	Sets of Numbers (Natural Numbers, Whole Numbers, Integers Numbers, Rational Numbers, Even and Odd numbers, Prime Numbers) Subsets and Supersets (Example 3) Page: 7		
	3.	Proper Subset, Improper Subset, Power Set, Equivalent sets Page: 8 to 10		
	4.	Types of Sets, Operations of Sets (Union of Sets, Intersection of Sets) (Example 4 to 6) Page: 10 to 11		
	5.	Difference of Sets, Universal Set, Complement of a Set (Example 7 to 9) Page: 10 to 11		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
2 /30	6.	Properties of the Complement set: Example 10 &11 Page: 13 to 14		
	7.	EXERCISE 1: (Q 1 to 3) Page: 14-15		
	8.	EXERCISE 1: (Q 4 to 6) Page: 15		
	9.	EXERCISE 1: (Q 7) Page: 15		
	10.	EXERCISE 1: (Q 8) Page: 15		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
3 /30	11.	EXERCISE 1: (Q 9 to 10) Page: 15-16		
	12.	EXERCISE 1: (Q 11 to 13) & MULTIPLE-CHOICE QUESTIONS 1 Page: 16		
	13.	Unit 2: RATIONAL NUMBERS (Rational numbers and Rational Numbers on the Number Line) Example 1 to 3 Page: 20 to 22		
	14.	EXERCISE 2A: (Q 1 to 3) Page: 22		
	15.	EXERCISE 2A: (Q 4 to 6) Page: 22		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
4 /30	16.	EXERCISE 2A: (Q 7 to 9) Page: 22		
	17.	Standard form, Comparing Rational Numbers (Example 4 & 5) Page: 23-24		
	18.	Steps of Comparing of two Rational Numbers, Ordering Rational Numbers, Reciprocal of a Rational Number, Rounding Off Rational Numbers (Example 6 & 7) EXERCISE 2B: (Q 1) Page: 25-26		
	19.	EXERCISE 2B: (Q 2 to 5) Page: 26		
	20.	EXERCISE 2B: (Q 6 to 9) Page: 26		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
5 /30	21.	Operations on Rational Numbers: Addition, Subtraction, Additive Identity (Example 8) Page:27-29		
	22.	Multiplication, Multiplication Identity (Examples 9 & 10) Page:29-32		
	23.	Division, Absolute Value of Rational Numbers (Examples 12) EXERCISE 2C: Q 1 to 3 Page# 31-33		
	24.	EXERCISE 2C: Q 4 to 7 Page# 31-33		
	25.	EXERCISE 2C: Q 8 to 10 Page# 33		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
6 /30	26.	EXERCISE 2C: Q 11 to 12 & MULTIPLE-CHOICE QUESTIONS 2 Page# 33-34		
	27.	UNIT 3: DECIMAL NUMBERS Decimal Representation, Conversion of fraction into decimal numbers Page# 38-39		
	28.	Conversion of percentages into decimal numbers Conversion of decimal numbers into percentages Conversion of decimal numbers into fractions (Examples 3 to 8) Page# 40-41		
	29.	Terminating and non-terminating Decimals (Examples 9) Page# 41-42		
	30.	Comparing and ordering decimal numbers, Properties of decimal numbers (Examples 10 to 12) Page:44 to 46		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
7 /30	31.	Approximation and rounding off (Examples 13 to 18) Page:46-48		
	32.	EXERCISE 3: (Q 1 to 3) Page:48-49		
	33.	EXERCISE 3: (Q 4 & 5) Page:49		
	34.	EXERCISE 3: (Q 6 to 8) Page:49-50		
	35.	EXERCISE 3: (Q 9 to 11) Page:50		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
8 /30	36.	EXERCISE 3: (Q 9 to 11) & MULTIPLE-CHOICE QUESTION 3 Page:50-51		
	37.	UNIT 4: SQUARES AND SQUARE ROOTS Perfect squares, Testing a perfect square (examples 1 & 2) Page: 54-56		
	38.	Properties of perfect square of a number, Square roots of positive integers. Page: 56-58		
	39.	Steps to determine the square root of a number (Examples 4 to 9) Page: 59-61		
	40.	EXERCISE 4: Q 1 to 4 Page: 61-62	t	

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
9 /30	41.	EXERCISE 4: Q 5 to 9 Page: 62		
	42.	EXERCISE 4: Q 10 to 13 Page: 62-63 MULTIPLE-CHOICE QUESTIONS 4		
	43.	REVISION 1 Page: 64-65		
	44.	UNIT 5: RATE, RATIO AND PROPORTION Rate and average rate, Increasing and Decreasing Ratios, Proportions, Time and Distance, Direct and Inverse Variation (Examples 1 &2) Page: 68-72		
	45.	Inverse Variation (Example 3 to 6) Page: 73-74		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
10/30	46.	Inverse Variation & Using Proportions (Example 7 to 10) Page: 75-77		
	47.	EXERCISE 5: Q 1 to4 Page: 78		
	48.	EXERCISE 5: Q 5 to 8 Page: 78-79		
	49.	EXERCISE 5: Q 9 to 12 Page: 79		
	50.	EXERCISE 5: Q 13 to 16 MULTIPLE-CHOICE QUESTIONS 5 Page: 79-80		

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12 /30	56.	EXERCISE 6B : Q 1 to 3 Page: 92		
	57.	EXERCISE 6B : Q 4 to 6 Page: 92		
	58.	Taxes Examples 12 & 13 Page: 92-94		
	59.	Examples 14 & 15 Page: 95-96		
	60.	Property Tax, General Sales Tax Examples 16 to 18 Page: 96-98		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
13/30	61.	Value-added Tax (Examples 20 &21) Commission (Example 22) Page: 98-99		
	62.	Zakat (Examples 23 to 26) Page: 99-100		
	63.	EXERCISE 6C : Q 1 to 4 Page: 101		
	64.	EXERCISE 6C : Q 5 to 9 Page: 101		
	65.	EXERCISE 6C : Q 10 to 17 Page: 101-102 MULTIPLE-CHOICE QUESTIONS 6 Page: 102		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
14/30	66.	REVISION 2 Page: 104-105		
	67.	UNIT 7: ALGEBRIAC POLYNOMIALS Number Sequence (Example 1 & 2) Page: 108-111		
	68.	Inequality, Exponents (Examples 3 to 11) Page: 112-113		
	69.	Algebraic Polynomials (Monomial, binomial, trinomial) (Examples 12 to 16) Page: 114-116		
	70.	EXERCISE 7A: Q 1 TO 6 Page:116-117		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
15/30	71.	EXERCISE 7A: Q 8 to 10 Page:118-119		
	72.	Multiplication of Algebraic Polynomials (Examples 17 to 27) Page: 118-119		
	73.	(Examples 28 to 39) Page: 120-122		
	74.	EXERCISE 7A: Q 1 to 7 Page:122-123		
	75.	EXERCISE 7A: Q 8 to 11 MULTIPLE-CHOICE QUESTIONS 7 Page: 123-124		

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17 /30	81.	EXERCISE 8: Q 7,10 & 11 Page:132		
	82.	EXERCISE 8: Q 12 to 14 MULTIPLE-CHOICE QUESTIONS 8 Page: 132-133		
	83.	UNIT 9: FACTORIZATION OF ALGEBRAIC EXPRESSION Factorization of using common factors (Examples 1 to 3) Page: 136-138		
	84.	EXERCISE 9A: Q 1 to 7 Page: 138		
	85.	EXERCISE 9A: Q 8 to 11 Page: 138		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
18/30	86.	Factorization by breaking middle term & making groups (Examples 4 to 6) Page: 138-140		
	87.	EXERCISE 9B: Q 1 to 7 Page: 140		
	88.	EXERCISE 9B: Q 8 to 14 Page: 140		
	89.	EXERCISE 9B: Q 15 to 20 MULTIPLE-CHOICE QUESTIONS 9 Page: 140-141		
	90.	UNIT 10: LINEAR EQUATIONS Algebraic Linear Equations, Equation and Identity Page: 144-145		

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19/30	91.	Linear Equation and Its Solution Transposition (Examples 1 to 5) Page: 145-148		
	92.	EXERCISE 10A: Q 1 to 8 Page: 149		
	93.	EXERCISE 10A: Q 8 to 16 Page: 149		
	94.	EXERCISE 10A: Q 17 to 24 Page: 149		
	95.	Problems on Linear Equations (Examples 6 to 8) EXERCISE 10B: Q 1 to 4 Page: 149-151		

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20/30	96.	EXERCISE 10B: Q 5 to 10 Page: 151		
	97.	EXERCISE 10B: Q 11 to 16 Page: 151		
	98.	Linear Equation in two variables (Examples 9 to 11) Page: 152-153		
	99.	Coordinate Plane, Graph of Linear Equation, Gradient and Y-Intercept Page: 154-159		
	100.	EXERCISE 10C: Q 1 TO 4 Page: 159		

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21/30	101.	Simultaneous Linear Equations (Examples 13 to 16) Page: 160-163		
	102.	EXERCISE 10D: Q 1 to 3 MULTIPLE-CHOICE QUESTIONS 10 Page: 164-165		
	103.	REVISION 3 Page: 166-169		
	104.	UNIT 11: LINES AND ANGLES Triangle, Properties of Triangle, Finding unknowns angles in a triangles (Examples 1 to 3) Page: 172-173		
	105.	Polygons, Elements and types of polygons, Interior and exterior angles of a polygon Sum of Interior and exterior angles of a polygon Page: 174-176		

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22 /30	106.	Calculating sum of Interior and exterior angles of a polygon Examples 4 to 6. Page: 177-178		
	107.	EXERCISE 11: Q 1 to 5 Page:178-179		
	108.	EXERCISE 11: Q 6 to 8 MULTIPLE-CHOICE QUESTIONS 11 Page:179-180		
	109.	UNIT 12: PRACTICAL GEOMETRY Bisecting a line segment and an angle (Example 1 & 2), Types of triangles Classification of a triangles by the sides and angles Page:184-185		
	110.	Constructing a scalene triangle when the length of three sides a given, constructing an equilateral triangle when the base is known, constructing an equilateral triangle when the base is known, constructing an equilateral triangle when the altitude is known, constructing an isosceles triangle when a base and base angle is known, Examples 3 to 6 page: 186-188		

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23/30	111.	Constructing given triangles given on page: 188-189 EXERCISE 12A: Q 1 to 4		
	112.	EXERCISE 12A: Q 1 to 4 Page: 190		
	113.	EXERCISE 12A: Q 5 to 8 Page: 191		
	114.	EXERCISE 12A: Q 9 to 14 Page: 191		
	115.	Quadrilaterals, Properties of Quadrilaterals, Sum of the angles of Quadrilateral, constructing Quadrilaterals Page:191-194		

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24/30	116.	Constructing a Parallelogram, constructing a Rectangle, constructing a Rhombus Constructing a kite Page:195-197		
	117.	Constructing a Trapezium, Symmetry (Example 21 to 25) Page:198-200		
	118.	EXERCISE 12B: Q 1 to 8 Page: 201		
	119.	EXERCISE 12B: Q 9 to 13 MULTIPLE-CHOICE QUESTIONS 12 Page: 202-204		
	120.	UNIT 13: CIRCLES Pair of compasses, Elements of circles Page: 208-210		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
25/30	121.	Interior and Exterior of a Circle, constructing a Circle, constructing a semi-circle Page: 211-212		
	122.	EXERCISE 13A: Q 1 to 6 Page: 213		
	123.	EXERCISE 13A: Q 7 to 11 Page: 213-214		
	124.	Properties of a circle 1 to 5 Page: 214-216		
	125.	EXERCISE 13A: Q 1 to 6 MULTIPLE-CHOICE QUESTIONS 13 Page: 217-218		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
26/30	126.	REVISION 4: Page: 220-223		
	127.	UNIT 14: PERIMETER AND AREA Conversion of units (mm^3 , cm^2 , and m^2) (Examples 1 to 4) Page: 226-227		
	128.	Time, Distance and Space, Relationship between Speed, Time and Distance Examples 3 to 6 Page: 228-231		
	129.	Perimeter and Area of Geometrical Figures Page: 232-233		
	130.	Perimeter and Area of shaded and unshaded region Page: 234-236		

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27 /30	131.	EXERCISE 14A: Q 1 to 10 Page: 237		
	132.	EXERCISE 14A: Q 11 to 19 Page: 237-238		
	133.	Circumference of a Circle and Area of Circular Region Page:238-241		
	134.	EXERCISE 14B: Q 1 to 5 Page: 241		
	135.	EXERCISE 14B: Q 6 to 9 Page: 241-242 MULTIPLE-CHOICE QUESTIONS 14		

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28/30	136.	UNIT 15: VOLUME AND SURFACE AREA (Standard units of volume and Surface Area) Examples 1 to 4 Page:246-248		
	137.	Prism, Right Circular Cylinder and Surface Area and volume of Cylinder (Example 5) EXERCISE 15: Q 1 & 2 Page: 248-251		
	138.	EXERCISE 15: Q 3 to 7 Page: 252		
	139.	EXERCISE 15: Q 8 to 12 Page: 252		
	140.	EXERCISE 15: Q 13 to 15 MULTIPLE-CHOICE QUESTIONS 15 Page: 252-253		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
29/30	141.	REVISION 5: Page: 254-257		
	142.	UNIT 16: DATA HANDLING Data Presentation, Discrete and Continuous data, Ungrouped and grouped data Page: 260-263		
	143.	Bar Graphs, Line Graphs, Pie Charts Page: 263-268		
	144.	EXERCISE 16A: Q 1 to 7 Page: 268-269		
	145.	EXERCISE 16A: Q 8 to 11 Page: 269-270		

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30/30	146.	Measures of Central Tendency Page: 271-274		
	147.	EXERCISE 16B: Q 1 to 10 Page: 275-276		
	148.	Probability, The scale of probability Page: 276-279		
	149.	EXERCISE 16C: Q 1 to 5 Page: 279		
	150.	EXERCISE 16C: Q 6 to 9 MULTIPLE-CHOICE QUESTIONS 16 Page: 280		

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