



# Syllabus Breakdown Grade 7

SCIENCE 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

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

### SECOND TERM: OCTOBER – MARCH

Expected Teaching Weeks

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



## Teaching weeks per annum

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

### FIRST TERM: AUGUST – DECEMBER

Expected Teaching Weeks

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

### SECOND TERM: OCTOBER – MARCH

Expected Teaching Weeks

<b>January</b>	Teaching Week 16	Teaching Week 17	Teaching Week 18	Teaching Week 19
<b>February</b>	Teaching Week 20	Teaching Week 21	Teaching Week 22	<b>Second Midterm Exam</b>
<b>March</b>	Teaching Week 23	Teaching Week 24	Teaching Week 25	Teaching Week 26
<b>April</b>	Teaching Week 27	Teaching Week 28	Teaching Week 29	Teaching Week 30
<b>May</b>	<i>Revision Work</i>	<b>Annual Examination</b>	<b>Annual Examination</b>	<i>PTM &amp; 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 <sup>1</sup>	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 <sup>2</sup>	4	4	4	4	4	4	4	4	
10	Geography	-	-	-	-	-	3	3	3	90
11	Computer Science	3 SRM <sup>3</sup>	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		<b>37</b>	<b>37</b>	<b>37</b>	<b>37</b>	<b>37</b>	<b>37</b>	<b>37</b>	<b>37</b>	

<sup>1</sup> In Sindh Region only

<sup>2</sup> In all regions except Sindh

<sup>3</sup> SRM: (Supplementary Reading Material)



WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
1 /30	1.	<b>Unit# 01, Scientific Process Skills</b> Reading and Explanation page: 1 & 2		
	2.	Evidence & sources of Evidence page: 2 to 4 Reading and Explanation		
	3.	Evidence & sources of Evidence page: 4 to 5 Reading and Explanation		
	4.	Testing predictions with respect to evidence page: 6-8		
	5.	Activities page: 8		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
2 /30	6.	BIOLOGY: CHAPTER 1: Plant System Root & shoot System, Internal structure of dicot stem. page: 10-12		
	7.	Transport System in plants page: 12-14		
	8.	Photosynthesis page: 14-16		
	9.	Plants leaves are adapted for photosynthesis page: 16-17		
	10.	Transpiration page: 18-19		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
3 /30	11.	Importance of Transpiration page: 19-20		
	12.	Nutrients of Plants page: 20-21		
	13.	Exercises: Q 1 to 3. page: 22		
	14.	Exercises: Q 4. page: 22		
	15.	Exercises: Q 5 (parts i to iv). page: 22-23		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
4 /30	16.	Exercises: Q 5 (parts vi to viii). page: 22-23		
	17.	Think about it and activities. page: 23		
	18.	Projects. page: 23		
	19.	Unit:2 Human Respiratory System Respiration page: 24-25		
	20.	How we Breath page: 25-27		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
5 /30	21.	Types of Respiration, The Human Transport System, The Heart and Exercise page: 27-28		
	22.	The Heart page: 29-31		
	23.	The Blood Circulation, Arties, veins and capillaries page# 31-33		
	24.	The Blood Circulation, Arties, veins and capillaries page# 31-33		
	25.	Blood, Red Blood cells page# 34-36		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
6 /30	26.	Blood, Red Blood cells page# 34-36		
	27.	Exercises: Q 1 to 3 page: 37-38		
	28.	Exercises: Q 4 page: 38		
	29.	Exercises: Q 5 page: 38		
	30.	Exercises: Q 5 page: 38		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
7 /30	31.	Think about it, Activities page: 39		
	32.	Projects page: 39		
	33.	Chemistry: Chapter 4: Structure of an Atom to concept check page: 53-55		
	34.	Mass number, Difference between atomic number and mass number to “The arrangement of electrons in shells of elements”. page: 55-56		
	35.	Filling Electron levels & Structure of an atom. Concept Check page: 57-58		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
8 /30	36.	Recognize periods and groups in the periodic table page; 59-60		
	37.	Recognize periods and groups in the periodic table page; 59-61		
	38.	Exercises: Q 1 to 4 page: 62-63		
	39.	Exercises: Q 5 page: 63		
	40.	Exercises: Q 6 page: 63		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
9 /30	41.	Think about it, Activities page: 63-64		
	42.	Projects page: 64		
	43.	Chapter: 5 Physical and Chemical Changes page: 65-66 Physical Changes:		
	44.	Chemical Changes, difference between physical and chemical changes & Concept check page: 67-68		
	45.	Examples of Chemical Changes page: 68-70		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
10/30	46.	Physical and Chemical properties of matter & properties of material and their uses Concept Map page: 71-72		
	47.	Exercises: Q 1 to 3 page: 73		
	48.	Exercises: Q 4 page: 74		
	49.	Exercises: Q 5 & 6 page: 74		
	50.	Activities & Projects page: 74		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
11/30	51.	Chapter: 5 Physical and Chemical Changes      page: 65-66 Physical Changes:		
	52.	Chemical Changes, difference between physical and chemical changes & Concept check      page: 67-68		
	53.	Examples of Chemical Changes      page: 68-70		
	54.	Chapter 8: Forces and Motion      page: 99-101 Force, Some effects of force, Measuring forces, Balanced and Unbalanced Forces		
	55.	Speed, Average Speed, Activity Measuring Speed      page: 102-103		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
12/30	56.	Distance Time Graphs, Interpreting Graphs page: 103-104		
	57.	Distance Time Graphs, Interpreting Graphs page: 103-104		
	58.	Types of Forces page: 105-106		
	59.	Gravitational Force or Gravity page: 106-108		
	60.	Exercises: ( Q 1 to 3) page; 109-110		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
13/30	61.	Exercises: ( Q 4) page; 109-110		
	62.	Exercises: ( Q 5) page; 110		
	63.	Think about it & Activities page: 110-111		
	64.	Projects page: 111		
	65.	Chapter# 09, Waves and Energy page: 112-113 Mechanical Waves, Longitudinal waves, Transverse waves		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
14/30	66.	Chapter# 09, Waves and Energy page: 112-113 Mechanical Waves, Longitudinal waves, Transverse waves		
	67.	Difference between Longitudinal waves and Transverse waves. Electronic waves and Sound Waves. page: 114-115		
	68.	The Properties of waves till Pitch to loudness and amplitude page: 115-118		
	69.	Factors affecting pitch and Loudness of sound. page: 118-121		
	70.	Exercises: ( Q 1 to 3) page: 122-123		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
15/30	71.	Exercises: (Q 4) page: 123		
	72.	Exercises: (Q 4) page: 123		
	73.	Exercises: (Q 5) page; 124		
	74.	Think about it & Activities page: 124-125		
	75.	Projects page: 125		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
16/30	76.	BIOLOGY: CHAPTER 3: Immunity and Diseases      page:40-41 Pathogen, Viruses and Fungi		
	77.	How Pathogens cause disease? How are Pathogens spread?      page: 41-42		
	78.	Types of immunity.      page: 42-43		
	79.	Adaptive immunity & Types of Adaptive immunity      page: 44-45		
	80.	Ways to add additional layers of defense.      page: 46-47		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
17/30	81.	Exercises: (Q 1 to 2 & 2a (short questions) page: 48		
	82.	Exercises: (Q 3(Long questions) page: 48		
	83.	Activities page: 49		
	84.	Projects page: 49		
	85.	Test Yourself Chapter: 1 , 2 & 3 page: 50-51		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
18/30	86.	CHEMISTRY: CHAPTER 6: Chemical Bonds page:75-77 Valency, Valence Number of different Groups, Discuss and Answer		
	87.	Ions, Cations, Anions page: 77-78		
	88.	Chemical Formulae, Concept Check page: 78-80		
	89.	Chemical Bonds, Concept Check and Map page: 80-81		
	90.	Exercises (Q 1 to 3) page: 82		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
19/30	91.	Exercises (Q 4 ) page: 82		
	92.	Exercises (Q 5 & 6) page: 82-83		
	93.	Activities page: 83		
	94.	Projects page: 83		
	95.	CHAPTER 7: Solutions Solution, Solute, Solvent, Soluble and Insoluble substances page: 84-85		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
20/30	96.	Saturated Solutions, Dilute and Concentrated Solutions, Solubility Page: 85-87		
	97.	Factors affecting Solubility                      page: 87-88		
	98.	Different solvents are needed to dissolve different solutes, Effectiveness of various cleaning solutions, Concept Map                      page: 88-89		
	99.	Exercises (Q 1 to 3)                                      page: 90-91		
	100.	Exercises (Q 4)    page: 91		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
21/30	101.	Exercises (Q 5) page: 91		
	102.	Exercises (Q 5) page: 91		
	103.	Exercises (Q 6) & Activities page: 91-92		
	104.	Projects page: 92		
	105.	Test Yourself (Chapter 4 to 6) page: 93-95		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
22/30	106.	Test Yourself (Chapter 7 ) page: 96-97		
	107.	PHYSICS: Chapter 10: Heat and Temperature. The Celsius Scale, The Absolute Zero and The Kelvin Scale page: 125-127		
	108.	PHYSICS: Chapter 10: Heat and Temperature. The Celsius Scale, The Absolute Zero and The Kelvin Scale page: 125-127		
	109.	Heat on the move, Concept Check, modes of Heat transfer page: 127-128		
	110.	Modes of Heat transfer page: 129-130		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
23/30	111.	Land Breeze to Ocean currents page: 131-132		
	112.	Radiation to Thermal insulation in buildings. page: 133-135		
	113.	Exercises (Q 1 to 3) page: 136		
	114.	Exercises (Q 3) page: 136		
	115.	Exercises (Q 4) page: 137		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
24/30	116.	Exercises 6 & Activities page: 137		
	117.	Projects page: 137		
	118.	SPACE SCIENCES: Chapter 11: Earth and Space page: 138-139 What is gravity? To The Gravity keeps planets in their orbits.		
	119.	Weightlessness on the Moon to High and low tides. page: 140-141		
	120.	Movement of Earth and Seasons to Constellations visible at different times of the year. page: 141-142		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
25/30	121.	Seasons on the Earth page: 143-144		
	122.	Exercises ( Q 1to 2) page: 145		
	123.	Exercise ( Q 3) page: 145-146		
	124.	Exercise ( Q 4) page: 146		
	125.	Exercise ( Q 5) page: 146		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
26/30	126.	Activities page: 146		
	127.	Activities page: 146		
	128.	Projects page: 146		
	129.	CHPATER 12: Technology in Everyday Life. Water Conservation while irritating plants. page: 147		
	130.	Experient (A Simple Drip System) page: 148		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
27/30	131.	Experiment (Sprinkler Irrigation) page: 149		
	132.	Food Preserving Techniques to How to make and preserve pickles? page:150		
	133.	How to make and Preserve Jam? page: 151		
	134.	Making and Preserving Juices page: 152		
	135.	How make a simple stethoscope? page: 153-154		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
28/30	136.	Experiment (How to make a hand sanitizer?) page: 154		
	137.	Making Sanitizer at Home (Experiment) page: 155		
	138.	Test Yourself: Chapter 8: Forces and Motion page: 156-157		
	139.	Test Yourself: Chapter 8: Forces and Motion page: 156-157		
	140.	Test Yourself: Chapter 9: Waves and Energy page: 157-158		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
29/30	141.	Test Yourself: Chapter 10: Heat and Temperature page: 159		
	142.	Test Yourself: Chapter 11: Earth and Space page: 160-161		
	143.	Test Yourself: Chapter 12: Technology in Everyday Life page: 161		
	144.	Test: BIOLOGY: Chapter 1 to 3. page: 10 to 52		
	145.	Test: CHEMISTRY: Chapter 4 to 5. page: 53 to 74		

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WEEK	[150]	UNIT & TOPIC CONTENT INCLUDING PAGE NUMBER	SIGN CR/CT	DATE
30/30	146.	Test: CHEMISTRY: Chapter 6 to 7. page: 75 to 98		
	147.	Test: PHYSICS: Chapter 8 to 9. page: 99 to 124		
	148.	Test: PHYSICS: Chapter 10 page: 125 to 137		
	149.	Test: SPACE SCIENCES: Chapter 11 page: 138-146		
	150.	Test: SPACE SCIENCES: Chapter 12 page: 147-161		

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