GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI
DIRECTORATE OF EDUCATION, EXAMINATION BRANCH
OLD SECRETARIAT, DELHI – 110054

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SUB: Suggested (Must do) topics of Maths and Science for class X and mapping of topics/chapters with chapters of lower classes

Identifying learning gaps and bridging these gaps by providing appropriate support has become the need of the hour. Areas in which the student's performance is low due to the cumulative effect of the weaknesses from the lower classes in Mathematics and Science need to be addressed to get the desired results in the coming CBSE exams.

The subject experts at the Core Academic Unit (CAU) have identified important topics/ chapters based on the report of the question wise analysis of CBSE answer scripts and item wise analysis of Mid Term Exam in subjects Maths and Science. These topics along with some suggested (must do) topics /chapters are enclosed in Annexure I for Science and Annexure II for Mathematics.

Student's performance may be low in certain topics due to learning gaps in the Lower classes. For the convenience of the teachers, topics of class X have been mapped with topics taught in classes 6th to 9th in Annexure III and IV. For a child to perform well in Class X, these learning gaps must be addressed.

All the HOS of Delhi Government schools are hereby directed to download the subject wise list of these mapped topics and suggested (must do) topics and provide the same to the concerned subject teachers of Maths and Science. To achieve the desired level of subject specific competencies for class 10, It must be ensured that a thorough practice of these topics of class 10 along with the topics of lower classes be done .This should finally facilitate the desired results in the forthcoming CBSE Exams.

These topics may be covered during the remedial classes with a special emphasis on individual attention to each and every student.

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Mapping of topics from lower classes (VI, VII, VIII and IX) for improvement of basic competencies for class X students

Subject: SCIENCE

S.No.	VI	VII	VIII	IX	Related Chapters Of Class-X
1	**Ch-6 (Changes around us)** • Changes can be reversed and some cannot. • A change may occur by heating or by mixing it with some other. .	**Ch-6(Physical and chemical changes)** • Changes in the physical properties are reversible. • Introduction of chemical equation in word form. • Rusting of iron.	**Ch- 4 (metal and non metal)** • Chemical reaction in word form and also with chemical formula. • Displacement reaction **Ch-14(chemical effects of electric current)** • passage of electric current through conducting liquid cause **chemical reaction.**	**Ch-3(atom and molecule)** • writing chemical formulas • Ions symbols and their formation. **Ch-2 Is Matter Around Us Pure** • Physical and chemical change	**Ch-1. Chemical Reactions And Equations**
2	---	**Ch-5(acids ,bases and salt)** • Nature of acids and bases (by taste) • Action of acids and bases on litmus papers and other indicators. • Neutralization and its use in daily life.	**Ch-4(Metals and non metals)** • Nature of metallic (basic) and non metallic oxide (acidic). • Chemical properties of metals and non metals	**Ch-2 Is Matter Around Us Pure** • Crystallization	**Ch-2. Acids, Bases And Salts**
3		**Ch- 6(Physical and chemical changes)** • Rusting of iron • Conditions required for rusting • Methods of preventing	**Ch-4(metal and non metal),** • physical and chemical properties of Metals and non metals • more reactive metals displace less reactive metals.	**Ch-2 Is Matter Around Us Pure** • Types of elements as metal and non metals	**Ch-3. Metals And Non Metals**

No.					
		rusting . • crystallisation	**Ch-14(chemical effects of electric current)** • electroplating (depositing a layer of metals on another by electricity)		
4	-------	------	-------	-----	**Ch-4 Carbon and its Compounds** (Though this chapter has no alignment with upper primary classes but being an important chapter some of the important topics has been incorporated in focused part)
5	-----	-----	-----	**Ch.4 (Structure of the Atom)** • Concept of Electron, Proton and Neutron along with Bohr's Model of atom. • Atomic No, Mass No. and Isotops.	**Ch.5 Periodic classification of Elements** •
6	**Ch-7.Getting to know plants** • parts of flower	**Ch-1(nutrition in plants)** • types of nutrition • photosynthesis **Ch2(nutrition in Animals)** • Digestion and digestive system **Ch10 (respiration in organism.** • Breathing • Cellular respiration • Respiratory system **Ch11(transportation in animals and plants),** • Circulation of blood and Circulatory system.	—	**Ch.5 The fundamental unit Cell** • Concept of mitochondria and Chloroplast	**Ch-6. Life Processes**

	• conduction of water • transpiration	• Excretion and Excretory system • Transportation of water, minerals (Xylem) and food (Phloem) in plant. • transpiration			
7	----	------	**Ch-10(Adolescence)** • Only endocrine glands and hormones	**Ch.6 Tissue** • Structure and function of Neuron	**Ch-7. Control And Coordination**
8	**Ch-7.Getting to know plants** Introduction of • Stamens and Pistils • Ovary and ovules in a flower	**Ch-12(Reproduction in Plants)** • **Asexual and Sexual** reproduction. • Pollination • fertilisation	**Ch-9(Reproduction in Animals)** • sexual reproduction process and organs • fertilisation. • Asexual reproduction in animals	**Ch.5 The fundamental unit Cell** • Concept of Nucleus and cell division **Ch13 why do we fall ill?** • STDs	**Ch-8 How Do Organism Reproduce?**
9	----	----	-----	-----	**CH-9 Heredity and Evolution** (Though this chapter has very less alignment with upper primary classes but being an important chapter some of the important topics has been incorporated in focused part)
10	**Ch-11(Light shadow and reflection)** • introduction of reflection	**Ch-15 (light)** • reflection • types of mirror and lens and theiruses • introduction of spectrum and rainbow formation,	**Ch-16(Light)** • laws of reflection of light.	------	**Ch-10. Light-Reflection And Refractions**
11	---	----	**Ch 16 (light)** • Human eye	**Ch-2 Is Matter Around Us Pure** • Tyndall's effect(from colloidal solution)	**Ch-11 Human Eye And Colourful Worlds**

12	Ch-12(electricity and circuit) • conductors and insulators • components of a circuit.	Ch-14 (Electric current and its effects) • Introduction of Circuit diagram. • Heating effect of current	-----		Ch-12 Electricity
13	Ch-13 (fun with magnets) • Type and Properties of magnet • Deflection in Compass needle showing the presence of magnetic field.	Ch14 (Electric current and its effects) • Introduction of electromagnet.	-----	------	Ch-13. Magnetic Effects Of Electric Current
14	------	-----	Ch -5(coal and petroleum) • As fuel and source of energy	Ch11 Work and Energy • Transformation of Energy	Ch-14 Sources Of Energy
15	Ch-9 (living organism and their surroundings) • Biotic and abiotic component	----	------	Ch 14 Natural Resources • Concept of Ozone layer and green house effect	Ch-15 Our Environment
16	Ch-14(water) Ch-15(air round us) • Concept of Natural resources. Ch-16 (garbage in and out) • Solid waste management	Ch-16(water) Ch-17(forest), • Concept of Natural resources Ch18(waste water) • waste water management	Ch-6 Combustion and Flame • Global warming • Acid rain	Ch 14 Natural Resources Concept green house effect	Ch-16 Management Of Natural Resources

Mapping of Topics from Lower Classes for Improvement of Class X Basic Competencies   (Mathematics)

S.N.	Topics				
	VI	VII	VIII	IX	X (Marks Appox.) (%)
1.	Integers	Integers	To Strengthen Calculations		
2.	Fractions	Fraction and Decimals			
3.	Decimals				
4.	Basic Geometrical Ideas	1. Lines and Angles 2. The Triangle and its Properties 3. Congruence of Triangle	Understanding Quadrilateral	1. Lines and Angles 2. Triangles 3. Quadrilaterals 4. Area of Parallelograms and triangles 5. Circles	1. Triangles 2. Circles (11) (13.75%)
5.	Data Handling	Data Handling	Data Handling	1. Statistics 2. probability	1. Statistics 2. probability (11) (13.75%)
6.	Mensuration	Perimeter and Area	Mensuration	1. Surface Area and Volumes 2. Heron's Formula	1.Surface Area and Volumes 2. Area Related to Circles (10) (12.5%)
7.	Practical Geometry	Practical Geometry	Practical Geometry	Constructions	Constructions (04) (05%)
8.	Algebra	Simple Equation	Linear Equation in one Variable	Linear Equation in Two Variables	Pair of Linear Equations in Two Variables (07) (8.75%)
		Algebraic Expressions	1. Algebraic Expressions and Identities 2. Factorization	1.Polynomials	1. Polynomials 2. Quadratic Equations 3. Arithmetic Progressions (13) (16.25%)
9.	-----------		Introduction to Graphs	Coordinate Geometry	Coordinate Geometry (06)
10.	1. Knowing Our Numbers 2. Whole Numbers 3. Playing with Numbers	1. Rational Numbers 2. Exponents and Powers	1. Rational Numbers 2. Squares and Square Roots 3. Cube and Cube Roots 4. Exponents and Powers	Number System	Real Numbers (06) (7.5%)
Total Marks/Maximum Marks					68 /80 ((85%)

Suggested (Must do) Topics for CLASS-X

Subject: Science(Code:086)

Chapter No.	Name of the Chapter	Suggested Topics	Suggested Activities	Marks(%)
1	Chemical Reactions and Equations	i.Balancing a chemical equation. ii.Types of a chemical reaction and their identification iii. Redox reaction	• Activity 1.1 and 1.2 • related activities of 'Types of Chemical Reactions' (including Corrosion and Rancidity)	4(5%)
2	Acids, Bases and Salts	i. Concept of Acids, Bases & Salts-their tests with different indicators. ii. Chemical Prop. of Acids and Bases. iii. Strong and weak acids & bases(H^+/OH^- concentration) iv. pH and its importance in everyday life. **v. 5 Salts-scientific names, chemical formulae, preparation & uses**	• Activity 2.1 • Activities 2.3- 2.9 • Sub-topic 2.3.1 • Fig. 2.8	4(5%)
3	Metals and Non- metals	i. Chemical properties of Metals and Non-metals. ii. Reactions based on Reactivity Series. iii. Formation of Ionic compounds(electron dot structure)and their properties iv. Alloys v. Extraction of mercury, copper, zinc; Calcination, Roasting , Thermit Reaction and Electrolytic Refining	• Activity 3.14 • Table 3.2 • Fig 3.6 • Fig.3.10 –Flow-Chart of Extraction of metals	5(6%)
4	Carbon and its Compounds	i. Catenation and Tetravalency. ii. Formation of Covalent Compounds. iii. Isomers of hydrocarbons iv. Saturated and unsaturated hydrocarbons and their chemical properties v. Identification of functional groups in carbon compounds vi. Homologous series' compounds. vii. Ethanol and Ethanoic acid. viii. Esterification	• Fig 4.1 to 4.7 • Table 4.1 to 4.4	3(3.75 %)
5	Periodic Classification	i. Number of groups and periods in Mendeleev's and modern periodic table.	• Table no 5.4	

	of Elements	ii. Identification of Group and period of an element to which it belongs in Modern periodic table. iii. General formula of Hydride and Oxide of an element. iv. Law of Modern Periodic Table. v. Trends in the Modern Periodic Table : Valency, Atomic Size, Metallic and Nonmetallic nature of an element.	• Activity 5.6 to 5.11	4(5%)
6	Life Processes	i. 3 Steps of Photosynthesis and its reaction ii. Aerobic and Anaerobic Respiration (in mitochondria , muscle and yeast-Breakdown of glucose by various pathways) iii. Digestive, Respiratory , Circulatory and Excretory system through diagram and Flow chart. iv. Transportation of water and translocation of food in plants.	• Page no.96 • Fig 6.8 • Fig 6.5,6.6 and 6.9 ,6.10,6.13	4(5%)
7	Control and Coordination	i. Diagram of neuron . ii. Reflex action and Reflex Arc(with simple flow chart) iii. Tropic and Nastic movements (with Examples) iv. Plant hormones and their function. v. Names of hormones, organs of secretion and their function in human.	• Fig 7.1(neuron) • Fig 7.2 • Activity 7.4 (new edition)	4(5%)
8	How do Organism Reproduce?	i. Asexual reproduction (all methods in brief) ii. Sexual reproduction in plants and animals. iii. Reproductive health (Contraceptive methods and STDs)	• Related diagrams and their labeling.	3(3.75 %)
9	Heredity and Evolution	i. Monohybrid cross and their ratios ii. Sex determination iii. Acquired and inherited traits with examples iv. Homologous and analogous organs with examples	• Fig 9.3 • Fig 9.6	3(3.75 %)
10	Light – Reflection and Refraction	i. Reflection and Refraction ii. Snell's law (Refractive Index) iii. Ray diagrams of Image formation by Spherical mirrors- specifically when object is at C,F, between P& F ;and similar positions for lenses. iv. Uses of mirrors and lenses. v. Mirror and lens formula vi. Power of lens	• Table 10.1 and related diagrams. • Table 10. 4 and related diagrams. (Practice of Ray Diagrams by simple rule)	4(5%)
11	Human Eye and Colourful	i. Parts of Eye and their functions. ii. Defects of eye and their correction.	• Fig 11.1 • Fig.11.2 and 11.3	4(5%)

	World	iii. 5 Natural Phenomenon related to Dispersion, Atmospheric Refraction and Scattering of Light.	• Fig.11.5,11.6,11.8,11.9, 11.10 and 11.12	
12	Electricity	i. Electric Circuit diagram. Identification of series and parallel setup of resistance through circuit diagram. ii. Define potential difference, current and resistance with their SI units. iii. Ohm's law and factors affecting resistance iv. Calculation of voltage, current and equivalent resistance of Resistors in circuits containing Series and Parallel combinations .	• Fig 12.1 • Activity 12.3 and Fig.12.3	4(5%)
13	Magnetic Effects of Electric Current	i. Field lines around a bar magnets, straight current carrying conductor and solenoid. ii. Right hand thumb rule iii. Fleming's Left hand rule , Right hand rule(electromagnetic induction) and their application iv. Electric Fuse	• Fig 13.4 ,13.6,13.10 • Fig 13.7 • Fig 13.13,13.18	4(5%)
14	Sources of Energy	i. Characteristics of good source of Energy. ii. Conventional sources of energy. iii. Bio- gas plant and wind energy iv. Non conventional sources of energy.	• Fig 14.4 ,14.6 • Activity14.6	3(3.75 %)
15	Our Environment	i. Food chain and web ,Biological Magnification ii. Diagram showing flow of Energy among different trophic level in an Ecosystem. iii. 10% law of energy ;Depletion of Ozone layer	• Fig 15.4	
16	Management of Natural resources	i. Concept of 5 R's and Stack holders ii. Concept of dams (problems and advantages) iii. Water harvesting system	• Fig 16.3	
Total				
				Approx 65%

Suggested (Must do) Topics/Chapters of Mathematics Class X

S.N.	Chapter Number	Chapter Name	Marks (Approx,)
1	3	Pair of Linear Equations in Two Variables	10
2	5	Arithmetic Progressions	
3	7	Coordinate Geometry	
4	8	Introduction to Trigonometry	06
5	11	Constructions	08
6	13	Surface Area and Volume	04
7	14	Statistics	05
8	15	Probability	11
Total			44