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NSES CURRICULUM: MIDDLE SCHOOL SCIENCE

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CATEGORY	TOTAL TOPIC	TOTAL DURATION
Physical Science	263	14.18.10
Life Science	139	06.15.15
Earth and Space Science	68	03.59.17
Science in Personal and Social Perspectives Standard	15	00.49.24
Add-On Category	7	00.18.37
TOTAL	**492**	**25.40.43**

SUBCATEGORY	TOTAL TOPIC	TOTAL DURATION
Physical Science	**263**	**14.18.10**
Properties and changes of properties in matter	142	06.40.52
Motions and forces	16	01.01.01
Transfer of energy	105	06.36.17
Life Science	**139**	**06.15.15**
Structure and function in living systems	102	05.14.38
Reproduction and heredity	23	00.36.55
Regulation and behavior	4	00.05.20
Populations and ecosystems	7	00.14.50
Diversity and adaptations of organisms	3	00.03.32
Earth and Space Science	**68**	**03.59.17**
Structure of the earth system	38	02.07.05
Earth's History	3	00.13.30
Earth in the solar system	27	01.38.42
Science in Personal and Social Perspectives Standard	**15**	**00.49.24**
Personal Health	7	00.18.03
Natural Hazards	2	00.07.52
Risks and Benefits	6	00.23.29

SUBCATEGORY	TOTAL TOPIC	TOTAL DURATION
Add-On Category	**7**	**00.18.37**
Basics of Life	3	00.09.29
Human Body	3	00.06.48
Heat and Thermodynamics	1	00.02.20
TOTAL TOPICS	**492**	**25.40.43**

Physical Science

Topic Name	Duration	Sim	Int

Properties and changes of properties in matter

- **Core Topics**

1.	Distinguishing Between a Mixture and a Compound	00.00.00	√
2.	Distinguishing Between Solutions	00.00.00	√
3.	Separation of Solid-Liquid Mixtures	00.03.43	
4.	Separation of Liquid-Liquid Mixtures	00.04.43	
5.	Separation of Solid-Solid Mixtures	00.05.00	
6.	Desalination of Water (Simple Distillation)	00.03.28	√
7.	Separation of a Liquid-Gas Mixture	00.01.59	
8.	Steam Distillation	00.00.00	√
9.	Separation of a Mixture	00.00.00	√
10.	Physical Properties of Metals	00.04.34	
11.	Chemical Properties of Sulphur	00.03.47	
12.	Physical Properties of Ammonia	00.03.47	
13.	Physical Properties of Acids	00.03.39	
14.	Chemical Properties of Bases	00.02.34	
15.	Physical Properties of Alkali Metals	00.03.13	
16.	Physical Properties of Aldehydes and Ketones	00.05.58	
17.	Physical Properties of Amines	00.03.22	
18.	Physical Properties of Ethanol	00.06.41	

Physical Science

	Topic Name	Duration	Sim	Int
19.	Physical Properties of Bases	00.02.23		
20.	Physical Properties of Water	00.04.01		
21.	Melting and Boiling Point of Water	00.02.47		
22.	Physical and Chemical Changes	00.03.26		
23.	Determining Melting and Boiling Points	00.00.00	√	
24.	States of Matter	00.03.16		
25.	States of Matter (Part-II)	00.02.45	√	
26.	Effect of Temperature on the Solubility of Gases and Thermal Pollution	00.04.49		
27.	Factors Affecting Pressure of the Gas	00.04.01	√	
28.	Effect of Temperature on the Liquid State of Matter	00.03.36	√	
29.	Effect of Pressure on the Gaseous State of Matter	00.02.45	√	
30.	Physical Nature of Matter	00.02.19		
31.	Crystallization	00.01.51	√	
32.	The Relative Reactivities of Metals	00.03.19		
33.	Sublimation	00.01.52		
34.	Distillation	00.02.49		
35.	Fractional Distillation in Laboratory	00.00.00	√	
36.	Chromatography	00.00.00	√	
37.	Thin Layer Chromatography	00.00.00		√
38.	Water as a Solvent	00.00.00	√	
39.	Deionization Process	00.00.00	√	

Physical Science

	Topic Name	Duration	Sim	Int
40.	Colloids and their Properties	00.04.34		
41.	Factors Affecting the Rate of Evaporation of Water	00.03.28		
42.	Rate of Evaporation Surface Area and Air Movement	00.02.54		
43.	Formation of a Solution	00.03.36		
44.	Properties of Sulphur	00.03.04		
45.	Crystal Hydrate	00.03.46		
46.	Hydrometer	00.03.41		
47.	Density (Part-1)	00.05.09	√	
48.	Density (Part-2)	00.04.21	√	
49.	Does Mass Change in a Chemical Reaction?	00.01.26		
50.	Changes accompanying Chemical Reactions	00.02.24		
51.	Chemical Reactions and their Characteristics	00.02.24		
52.	Metallic and Non-metallic Properties in a Period	00.02.19		
53.	Introduction to Modern Periodic Table	00.00.00	√	
54.	General Characteristics of Groups	00.01.23		
55.	General Characteristics of Periods	00.03.49		
56.	Origin of the Modern Periodic Table	00.00.00	√	
57.	Chemical Equations	00.06.10		
58.	The Law of Conservation of Mass	00.01.26		

Physical Science

	Topic Name	Duration	Sim	Int
59.	Chemical Properties of Carbon	00.02.19		
60.	Chemical Properties of Iron	00.03.19		
61.	Chemical Properties of Sulphur Dioxide - I	00.06.05		
62.	Chemical Properties of Sulphur Dioxide-II	00.06.31		
63.	Chemical Properties of Conc. Sulphuric Acid	00.03.43		
64.	Chemical Properties of Dilute Sulphuric Acid	00.02.04		
65.	Chemical Properties of Carbon Dioxide	00.04.33		
66.	Chemical Properties of Phosphorus	00.03.34		
67.	Chemical Properties of Alkali Metal Elements and their Uses	00.04.04		
68.	Chemical Properties of Alkaline Earth Metals	00.02.58		
69.	Metals and Non Metals (Reaction with Oxygen)	00.03.44	√	
70.	Chemical Properties of Phenol - I	00.03.57		
71.	Chemical Properties of Phenol - II	00.03.12		
72.	Physical Properties of Non-metals	00.04.21		
73.	Malleability in Metals	00.02.38		
74.	Natural Indicators	00.04.02		
75.	Functioning of Human Body and pH	00.03.26		
76.	Elements, Compounds and Mixtures	00.06.43		
77.	Reaction of Metals with Water	00.00.00	√	
78.	Reaction of Metals with Acids	00.04.41		

Physical Science

	Topic Name	Duration	Sim	Int
79.	Reaction of Metal Oxides with Acid	00.01.20		
80.	Reaction of Metal Carbonates with Acid	00.02.31		
81.	Chemical Properties of Ethanol	00.00.00	√	
82.	Sulphur	00.02.22		
83.	Laboratory Preparation of Sulphur Dioxide	00.03.05	√	
84.	Laboratory Preparation of Hydrogen Gas	00.01.27	√	
85.	Laboratory Preparation of Ammonia	00.03.55	√	
86.	Preparation of Oxygen	00.03.17		
87.	Law of Definite Proportions or Constant Composition	00.04.51	√	
88.	Law of Multiple Proportions	00.05.02		
89.	Molecular Formula	00.02.22	√	
90.	What are Acids and Bases?	00.02.56		
91.	The Common Component of all Acids	00.03.00		
92.	Reaction of Alkali Metals with Liquid Ammonia	00.03.00		
93.	Oxides of Alkali Metals	00.04.42		
94.	Halides of Phosphorus	00.03.03		
95.	Law of Conservation of Mass	00.00.00	√	
96.	Action of Natural Indicators	00.00.00	√	
97.	Preparation of Hydrogen Peroxide	00.03.48		
98.	Preparation of Phosphine	00.04.41		
99.	Preparation of Ethers by Dehydration of Alcohols	00.04.35		

Physical Science

Topic Name	Duration	Sim	Int
100. Addition of Ammonia to Aldehydes and Ketones	00.05.22		
101. Acidity of Alcohols and Phenols	00.06.05		
102. Dehydration of Alcohols	00.04.32		
103. Preparation of Phenol from Haloarenes	00.00.00	√	
104. Preparation of Alcohols from Alkenes	00.00.00	√	
105. Carboxylic Acid: Preparation From Grignard Reagents	00.00.00	√	
106. Carboxylic Acid: Preparation From Nitrile and Amide-I	00.00.00	√	
107. Preparation of Alcohols from Grignard Reagents	00.00.00	√	
108. Carboxylic Acid: Preparation From Nitrile and Amide-II	00.00.00	√	
109. Balancing of Equations	00.02.40	√	
110. Preparation of Oxygen from Hydrogen Peroxide	00.01.15	√	
111. Laboratory Preparation of Chlorine	00.02.02	√	
112. Preparation of Carbon Dioxide	00.01.28		√
113. Haber Process (Manufacture of Ammonia)	00.00.00	√	
114. Chemical Bonding	00.05.11	√	
115. Atoms, Molecules and Ions	00.07.04		
116. Reaction of Metals with Oxygen	00.04.34		
117. Reaction of Metals with Hydrogen	00.01.08		

Physical Science

Topic Name		Duration	Sim	Int
118.	Reactions of Metals with Chlorine	00.00.00	√	
119.	Combination Reactions	00.02.11		
120.	Decomposition Reactions	00.01.39		
121.	Cationic and Anionic Displacement Reactions	00.00.00	√	
122.	Double Displacement Reactions	00.04.56		
123.	Relative Reactivity of Metals	00.00.00	√	
124.	Reaction of metals with sodium hydroxide	00.00.00	√	
125.	Decomposition Reaction	00.00.00	√	
126.	Corrosion	00.04.08		
127.	Galvanization	00.07.15		
128.	Reaction of Sulphur with Metals	00.03.43		
129.	Hydrogen Peroxide: Storage and Physical Properties	00.04.03		
130.	Hofmann Bromamide Degradation Method	00.01.43		
131.	Physical Properties of Ethers	00.05.00		
132.	Physical Properties of Carboxylic Acids	00.02.13		
133.	Electronic Structure of Carboxylic Acids	00.03.23		
134.	Acidity of Carboxylic Acids	00.03.34		
135.	Chemistry of Metals	00.05.40		

Physical Science

Topic Name		Duration	Sim	Int
•	**Suggested Topics**			
1.	Application and Explanation of Henry's Law	00.00.00	√	
2.	Separating the Components of a Mixture	00.00.00	√	
3.	Formation of a Solution	00.03.36		
4.	Specific Heat	00.06.10	√	
5.	Specific Heat Capacity of liquids	00.06.05		
6.	Thermal Expansion in Solids	00.00.00	√	
7.	Volume Expansion of Solids	00.00.00	√	

Motions and forces

•	**Core Topics**			
1.	Distance-Time Graph	00.04.57	√	
2.	Position, Distance, and Displacement	00.00.00	√	
3.	Graph (Introduction)	00.02.28		
4.	Measurement of speed	00.00.00	√	
5.	Uniform and Non-Uniform Motion	00.07.49		
6.	Relative velocity	00.06.22		
7.	Relative velocity in two dimension	00.05.10		
8.	Acceleration	00.08.49		
9.	Inertia	00.03.48		
10.	Newton's First Law of Motion	00.03.10		

Physical Science

Topic Name		Duration	Sim	Int
11.	Momentum and Newton's Second Law of Motion	00.07.07		
12.	Effects of Force	00.03.07		
13.	Balanced Forces	00.04.26		
14.	Newton's Third Law of Motion	00.03.48		
15.	To Investigate the relationship between the force exerted on an object and its change of momentum	00.00.00	√	
16.	Third Law of Motion using Two Spring Balances	00.00.00	√	

Transfer of energy

- **Core Topics**

1.	Heat Change During Chemical Reactions	00.01.30		
2.	Changes Around Us - I	00.04.40		
3.	Changes Around Us - II	00.03.08		
4.	Classifying Changes Around Us	00.00.00	√	
5.	Electrolysis of Water	00.03.58		
6.	Water Energy	00.01.44		
7.	Solar Concentrator	00.02.19		
8.	Work and Energy	00.02.18		
9.	Renewable Resources of Energy	00.04.35		
10.	Heat and Temperature: The Concept	00.06.55		

Physical Science

	Topic Name	Duration	Sim	Int
11.	Sound	00.03.53		
12.	Sound Propagation in Air	00.02.42		
13.	Kinetic Energy	00.05.17		
14.	Potential Energy	00.07.17		
15.	Transformation of Energy	00.08.02		
16.	Hydroelectric Power	00.05.47		
17.	Energy Released in Nuclear Fission	00.05.07		
18.	Nuclear Fusion	00.04.06		
19.	Solar Energy (Passive Solar Heating and Photovoltaic Devices)	00.05.55	√	√
20.	Transfer of Heat (Conduction)	00.04.41	√	
21.	Heat Conduction and Steady State	00.05.20	√	
22.	Thermal Conductivity	00.06.35	√	
23.	Kinetic Theory of Matter-1 (SOLID)	00.05.27		
24.	Emission Spectra and the Flame Test	00.06.02	√	
25.	Light	00.04.28		√
26.	Transparent, Translucent, and Opaque Objects	00.03.51		
27.	Pinhole Camera	00.01.44		
28.	Mirror and Reflection	00.02.43		
29.	Reflection of Light and its Laws	00.05.07	√	
30.	Laws of reflection of light	00.00.00	√	√
31.	Image Formation in a Plane Mirror	00.03.54	√	

	Topic Name	Duration	Sim	Int
32.	Formation of Images by a Smooth Plane Mirror	00.01.33		
33.	Effects of Rotation of a Plane Mirror	00.00.00	√	
34.	Two Plane Mirrors Parallel to Each Other	00.01.51		
35.	Real and Virtual Images	00.07.21		
36.	New Cartesian Sign Convention (Spherical Mirrors and Lenses)	00.06.11		
37.	Curved Mirrors	00.03.24	√	
38.	Images Formed by a Convex Mirror	00.04.43	√	
39.	Images Formed by a Concave Mirror	00.05.38	√	
40.	Focal Length of a Concave Mirror	00.00.00	√	
41.	Refraction of Light through a Prism	00.04.56	√	
42.	Refractive Index of a Glass Slab	00.00.00	√	
43.	Refractive Index of Water Using a Concave Mirror	00.00.00	√	
44.	Refractive Index of Water Using a Convex Lens and a Plane Mirror	00.00.00	√	
45.	Total Internal Reflection (Part-2)	00.04.08	√	
46.	Angle of Minimum Deviation	00.00.00	√	
47.	Snell's law	00.08.05		
48.	Total Internal Reflection in a Prism	00.02.51		
49.	Applications of Total Internal Reflection	00.03.10		
50.	Lenses	00.05.53	√	
51.	Converging Lenses	00.07.36	√	

Physical Science

	Topic Name	Duration	Sim	Int
52.	Diverging Lenses	00.06.27	√	
53.	Lenses in Contact	00.00.00	√	
54.	Images Formed by a Convex Lens (Part-2)	00.04.34		
55.	Focal length of Convex Lens	00.00.00	√	
56.	Focal Length of a Concave Lens using a Convex Lens	00.00.00	√	
57.	Focal Length of a Convex Lens by Removing Parallax	00.00.00	√	
58.	Focal length of a Concave Mirror Removing Parallax	00.00.00	√	
59.	Focal Length of a Convex Mirror using a Convex Lens	00.00.00	√	
60.	Defects of Vision and their Correction	00.07.45		
61.	Compound Microscope	00.03.35	√	√
62.	Camera (Part-1)	00.06.00		
63.	Projector	00.06.40		
64.	Fresnel lens and Overhead Projector	00.05.53		
65.	Prism Binoculars	00.02.58		
66.	Telescope	00.00.00	√	
67.	Reflecting Telescope	00.04.28	√	√
68.	Atmospheric Refraction	00.07.03		
69.	Examples of Refraction	00.03.27		
70.	Colour of Objects	00.05.20	√	
71.	Primary Colours of Light	00.04.02	√	

Physical Science

Topic Name		Duration	Sim	Int
72.	Dispersion of White Light	00.02.47	√	
73.	Diffraction of Light	00.06.51		
74.	Electrolysis	00.05.38		
75.	Application of Electrolysis-I	00.03.50		
76.	Electroplating Activity	00.00.00	√	
77.	Electric Bulb	00.01.07		√
78.	Bulb Connected to a Cell	00.03.35	√	
79.	Electric Fuse	00.04.24		
80.	Connections in a Simple Electric Circuit	00.00.00	√	
81.	Assembling Basic Electric Circuit	00.00.00	√	
82.	Electric circuit	00.00.00	√	
83.	Electric Power	00.08.45		
84.	Series and Parallel Connection	00.03.44		
85.	Electric Bell	00.03.30	√	√
86.	Galvanometer	00.09.04		√
87.	Moving Coil Loudspeaker	00.02.53		√
88.	Electroplating	00.02.52		
89.	Radioactivity and Group Displacement Law	00.00.00	√	
90.	Heat of Solution	00.03.40	√	
91.	Electric Cell	00.02.30		
92.	Cells in Series	00.01.34		
93.	Fundamentals of a DC Motor	00.07.33	√	√

Physical Science

Topic Name	Duration	Sim	Int
94. DC Motor	00.04.01		
95. AC Motor	00.05.14		√
96. AC Generator	00.06.05	√	√
97. Nuclear Chain Reaction	00.06.37		
98. Electromagnetic Spectrum (Part - 1)	00.05.19	√	
99. Electromagnetic Spectrum (Part - 2)	00.03.58		
100. Temperature of the Earth	00.04.22		
101. The Sun (Part-1)	00.05.15		√
102. The Sun (Part-2)	00.05.25		√
103. Solar Energy (Active Solar Systems)	00.04.48	√	√
104. Radiation	00.03.04		
105. Thermal Radiation	00.03.15		
TOTAL TOPIC IN PHYSICAL SCIENCE – 263	**14.18.10**		

Life Science

Topic Name	Duration	Sim	Int
Structure and function in living systems			
• **Core Topics**			
1. Levels of Organization (Anatomy)	00.03.12		
2. Cells to organism	00.02.52		
3. Protists in Water	00.00.00	√	
4. Compound Microscope	00.02.02	√	
5. Eukaryotic cell	00.03.02	√	
6. Amoeba	00.01.16		√
7. Animal cell	00.05.10	√	
8. Plant Cell	00.06.38		
9. Cell structure (Plant cell)	00.02.04	√	√
10. Number and size of cells	00.03.36		
11. Cell (shapes and functions)	00.04.05		√
12. Nucleus	00.00.00		√
13. Structure of Mitochondria	00.02.38	√	
14. ATP as energy currency	00.04.25		
15. Cell structure specialization	00.03.25		
16. Diffusion in living systems	00.03.47		
17. Imbibition and Endosmosis	00.00.00	√	
18. Cell cycle-Interphase stage	00.00.00	√	
19. Cell division (Mitosis)	00.04.15	√	

Life Science

Topic Name		Duration	Sim	Int
20.	Meiosis	00.06.12		
21.	Crossing over (Meiosis)	00.03.10		
22.	Epithelial tissue	00.04.31		√
23.	Connective tissues	00.02.08		
24.	Areolar connective tissues	00.02.52		
25.	Muscle tissues and nervous tissues	00.04.13		
26.	Structure of the bone	00.03.17		
27.	Structure of Bone	00.00.00	√	√
28.	Plant tissue system	00.03.33		
29.	Simple tissues	00.02.33		√
30.	Plant tissues (Meristematic tissues)	00.01.57		
31.	Plant tissues (Permanent tissues I)	00.02.37		
32.	Complex tissues (Xylem and phloem)	00.00.00	√	
33.	Support system in herbaceous & woody plants	00.03.15		
34.	Support in aquatic plants	00.01.18		√
35.	Support system in aquatic and terrestrial plants	00.02.02		√
36.	Permanent Slides - Animal tissues	00.00.00	√	
37.	Digestive and excretory system	00.02.33	√	
38.	Respiration	00.03.18		
39.	Respiratory system	00.03.47	√	√
40.	Structure of the lungs	00.02.07		

Life Science

Topic Name		Duration	Sim	Int
41.	Mechanism of breathing in man	00.02.20	√	√
42.	Respiratory and circulatory systems	00.02.24	√	√
43.	Exchange of Gases	00.04.16		
44.	Effect of Carbon monoxide on Oxygen transport	00.03.02		
45.	Tidal volume	00.02.49		
46.	Muscular system	00.02.41		
47.	Muscles (Voluntary and Involuntary)	00.03.46		
48.	Role of Muscles in Bone Movement	00.03.39		
49.	Skeletal muscles and bones	00.03.03		
50.	The skeletal system	00.02.25		
51.	Fixed joints and muscles	00.05.17		√
52.	Axial skeleton (Ribs and sternum)	00.02.20		
53.	Excretory system	00.03.50	√	
54.	Structure of kidney	00.03.59		
55.	Urine formation	00.06.13	√	
56.	Filtration rate (Kidney)	00.04.16		
57.	Nervous system	00.03.13	√	
58.	The eye	00.03.41	√	
59.	The Ear (Anatomy)	00.00.00	√	
60.	Exocrine glands and Endocrine glands	00.05.07	√	
61.	Male reproductive system (Anatomy and physiology)	00.04.14	√	

Life Science

Topic Name	Duration	Sim	Int
62. Female reproductive anatomy	00.03.29	√	
63. Embryonic development	00.04.21		
64. Skin	00.03.08	√	
65. Bacteria and Virus	00.03.38		
66. Cholera (Cellular damage)	00.02.39		
67. Diarrhoea	00.03.11		
68. Viral diseases (Influenza and polio)	00.03.20		√
69. Chickenpox	00.03.35		√
• **Suggested Topics**			
1. Body organization (Levels)	00.03.32		
2. Detailed digestive system II	00.01.53	√	
3. Teeth	00.04.00	√	√
4. Physiology of digestion	00.03.44	√	
5. Gallbladder	00.03.03		√
6. Gaseous transport	00.06.33	√	√
7. Exhalation of CO_2 During Respiration	00.00.00	√	
8. Experiments on respiration	00.05.53		
9. Blood Composition	00.06.13	√	
10. Blood - The RBC Story	00.03.42		
11. Blood corpuscles (Human blood)	00.03.24	√	
12. Study of WBCs	00.03.22		
13. Functions of leucocytes	00.02.28	√	

Life Science

Topic Name		Duration	Sim	Int
14.	Blood clotting	00.02.31	√	
15.	Arteries and veins	00.04.59	√	
16.	Blood Vessel Networking	00.04.59		
17.	Heart	00.01.59	√	
18.	Components of circulatory system	00.00.00	√	
19.	Anatomy of heart	00.04.32	√	
20.	Heart and blood circulation	00.03.35	√	
21.	Cardiac Pacemaker	00.04.03	√	
22.	Types of muscle fibers	00.04.15		√
23.	Bones	00.03.44	√	√
24.	The skull	00.01.19	√	√
25.	Girdle bones	00.02.46	√	
26.	Vertebral column	00.01.36	√	√
27.	Appendicular skeleton (Forelimbs and Hind limbs)	00.03.26	√	
28.	Joints	00.03.14		√
29.	Fracture	00.02.46		
30.	Organs of excretory system	00.03.41	√	
31.	Harmful micro-organisms	00.00.00	√	
32.	Mycoplasma	00.02.10		
33.	Haemoglobin and Sickle cell anaemia	00.03.30		√

Life Science

Topic Name		Duration	Sim	Int
Reproduction and heredity				
•	**Core Topics**			
1.	Types of Reproduction (Asexual Reproduction)	00.02.34		
2.	Reproduction in fungi (Sexual)	00.03.34		
3.	Plant reproduction	00.05.05		
4.	Male reproductive system	00.02.56	√	
5.	Female reproductive system	00.02.48	√	
6.	Oogenesis	00.00.00		√
7.	Fertilization	00.03.16	√	
8.	Sexual reproduction in flowering plants	00.00.00	√	
9.	Bacterial transformation and conjugation	00.02.47		
10.	Chromosomes, genes and DNA	00.03.50		√
11.	DNA and Chromosomes	00.00.00	√	
12.	Karyotype	00.02.21	√	
13.	Chromosomal sex determination	00.00.00	√	
14.	Inherited traits	00.00.00	√	
15.	Pedigree analysis I	00.00.00	√	
16.	Pedigree analysis II	00.00.00	√	

Life Science

Topic Name		Duration	Sim	Int
•	**Suggested Topics**			
1.	Fertilization and implantation in humans	00.03.44	√	
2.	Twins	00.04.00		
3.	Mendel's monohybrid cross	00.00.00	√	
4.	Sex-linked Inheritance: Haemophilia	00.00.00	√	
5.	Colour blindness	00.00.00	√	
6.	Law of Independent Assortment	00.00.00	√	
7.	Multiple alleles (Blood group)	00.00.00	√	

Regulation and behavior

•	**Core Topics**			
1.	Importance of water for plant and animal population	00.00.00	√	
2.	Forest ecosystem	00.02.12		
3.	Thermoregulation by the skin	00.03.08	√	√
4.	Mangrove	00.00.00		√

Populations and ecosystems

•	**Core Topics**			
1.	Forest ecosystem	00.02.12		
2.	Population attributes	00.00.00	√	

Life Science

Topic Name	Duration	Sim	Int
3. Aquatic ecosystem	00.02.30		
4. Food chain	00.02.52		
5. Food Web	00.00.00	√	
6. Energy flow in an ecosystem	00.03.48		
7. Pond - The Underwater Ecosystem	00.03.28		

Diversity and adaptations of organisms

- **Core Topics**

1. Symbiotic associations and biofertilizers	00.00.00	√	
2. Origin of life (Biological)	00.03.32		
3. Types of fossils	00.00.00	√	

TOTAL TOPIC IN LIFE SCIENCE – 139 **06.15.15**

Earth and Space Science

Topic Name		Duration	Sim	Int
	Structure of the earth system			
•	**Core Topics**			
1.	Hotspot Volcanism (Formation of the Hawaiian Islands)	00.03.40		
2.	Fold and Fault-Block Mountains	00.03.41		
3.	Earthquake	00.04.12		
4.	Structure of the earth	00.02.03		
5.	Chemical Weathering	00.03.42		
6.	Physical Weathering	00.03.14		
7.	Biological Weathering	00.03.11		
8.	Erosion	00.03.15		
9.	Rock Cycle	00.03.57		
10.	What are Rocks ?	00.03.27		
11.	Importance of Soil and its Formation	00.04.44		
12.	Properties of Soil and its Uses	00.05.41		
13.	Composition of Soil	00.04.38		
14.	Constituents of soil	00.00.00	√	
15.	Soil Horizons	00.05.17		
16.	Soil (Profile & Composition)	00.00.00	√	
17.	Experiment to check water holding capacity of soil	00.00.00	√	
18.	Soil Testing (Water Holding Capacity)	00.00.00	√	

Earth and Space Science

Topic Name		Duration	Sim	Int
19.	Magic of Water	00.02.44		
20.	Water: A Precious Resource	00.00.00	√	
21.	Water cycle	00.00.00	√	
22.	Physical Properties of Water	00.04.01		
23.	Layers of the Earth's Atmosphere	00.06.00	√	
24.	Composition and Importance of Air	00.04.26		
25.	Temperature and Surface Tension	00.00.00	√	
26.	Layers of the Earth's Atmosphere	00.00.00	√	
27.	Formation and Types of Clouds	00.04.12	√	
28.	What is Weather?	00.05.56	√	
29.	Fronts and Weather Conditions	00.05.11		
30.	Air Masses	00.04.27		
31.	What is Climate?	00.05.37		
32.	Climate Change	00.05.20		
33.	What Influences Climate?	00.04.47		
34.	Oxygen	00.01.36		
35.	Chemical and Organic Sedimentary Rocks	00.06.09		
36.	Clastic Sedimentary Rocks	00.04.44		
37.	Igneous Rocks	00.04.05		
38.	Metamorphic Rocks	00.03.08		

Earth and Space Science

Topic Name	Duration	Sim	Int
Earth's History			
• **Core Topics**			
1. Fold and Fault-Block Mountains	00.03.41		
2. Erosion	00.03.15		
3. Fossils	00.06.34		
Earth in the solar system			
• **Core Topics**			
1. Evolution of Solar System	00.01.56	√	
2. Solar System (The Inner Planets)	00.06.22	√	
3. Solar System (The Outer Planets)	00.04.42	√	
4. The Sun (Part-1)	00.05.15		√
5. The Sun (Part-2)	00.05.25		√
6. Planetary orbits	00.00.00	√	
7. Satellites	00.03.37		
8. Eclipse	00.00.00	√	
9. Solar Eclipse	00.06.04		
10. Lunar Eclipse	00.05.26		
11. Eclipse	00.02.49		
12. Phases of the Moon	00.00.00	√	
13. Satellites in Orbits	00.05.12		

Earth and Space Science

Topic Name		Duration	Sim	Int
14.	Kepler's First Law of Planetary Motion	00.03.47	√	
15.	Kepler’s Second Law of Planetary Motion	00.04.22		
16.	Kepler's Third Law of Planetary Motion	00.05.15	√	
17.	Centripetal Force	00.00.00	√	
18.	Gravitation	00.00.00	√	
19.	Mass and Weight	00.05.01		
20.	Energy of an orbiting satellite	00.00.00	√	
21.	Latitude and Longitude	00.07.17	√	
22.	Application of Latitude and Longitude	00.00.00	√	
23.	Radio telescope	00.05.15		√
24.	Time Zones	00.07.10		
25.	Solar Energy (Active Solar Systems)	00.04.48	√	√
26.	Solar Energy (Passive Solar Heating and Photovoltaic Devices)	00.05.55	√	√
27.	Radiation	00.03.04		
TOTAL TOPIC IN EARTH AND SPACE SCIENCE – 68		**03.59.17**		

Science in Personal and Social Perspectives Standard

Topic Name		Duration	Sim	Int
	Personal Health			
•	**Core Topics**			
1.	Smoking and Emphysema	00.04.21		
2.	Drug abuse and its adverse effects	00.00.00	√	
3.	Food: Where does it come from?	00.00.00	√	
4.	Vitamins- their importance and sources	00.05.29		
5.	AIDS	00.05.41	√	√
6.	Air pollution	00.02.32	√	
7.	Cleaning the environment	00.00.00	√	
	Natural Hazards			
•	**Core Topics**			
1.	Earthquake	00.04.12		
2.	Hotspot Volcanism (Formation of the Hawaiian Islands)	00.03.40		

Science in Personal and Social Perspectives Standard

Topic Name	Duration	Sim	Int
Risks and Benefits			
• **Core Topics**			
1. Earthquake	00.04.12		
2. Environmental pollution	00.02.06		
3. Air pollution	00.02.32	√	
4. Photochemical smog	00.03.44		
5. Smoking - A dangerous habit	00.05.30		
6. Effect of drug and alcohol on the nervous system	00.05.25		
TOTAL TOPIC IN SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES STANDARD – 15	**00.49.24**		

Add-On Category

Topic Name	Duration	Sim	Int
Basics of Life			
1. Nutrition	00.02.39		
2. Parasitic nutrition in fungus	00.03.16		
3. Reproduction in fungi (Sexual)	00.03.34		
Human Body			
1. Transport of oxygen	00.03.32		
2. The appendicular skeleton	00.03.16		
3. Nails	00.00.00	√	
Heat and Thermodynamics			
1. Balance Wheel	00.02.20		
TOTAL TOPIC IN ADD-ON CATEGORY – 7	**00.18.37**		
TOTAL TOPICS IN MIDDLE SCHOOL SCIENCE – 492	**25.40.43**		

*Sim = Simulation
*Int = Interactive