DEPARTMENT OF SCHOOL EDUCATION

TAMIL NADU

Syllabus

2020-21

STANDARD 9

State Council of Educational Research and Training
Chennai 600 006

SYLLABUS - 2020 - 21

STANDARD : 9 SUBJECT : SCIENCE

Unit	Content
1- Measurement	1.1 Physical Quantities and Units 1.1.1 Physical quantities 1.1.2 Units 1.2 SI System of Units 1.3 Fundamental Units 1.3.1 Length 1.3.2 Mass 1.3.3 Time 1.3.4 Temperature 1.4 Unit Prefixes 1.6 Vernier Caliper and Screw Gauge 1.7 Screw Gauge
2. Motion	2.1 Rest and Motion 2.2 Types of motion 2.2.1 Uniform and non uniform Motion 2.3 Distance and Displacement 2.3.1 Distance 2.3.2 Displacement 2.4 Speed, velocity, acceleration 2.4.1 Speed 2.4.2 Velocity 2.4.3 Acceleration 2.5 Graphical representation of motion along straight line 2.5.1 The distance-time graph for uniform motion 2.5.2 Distance time graph of non-uniform motion 2.5.3 Velocity-time graph

3. Fluids	3.1 Thrust and Pressure 3.2 Pressure in Fluids 3.2.1 Pressure due to liquids 3.2.2 Factors determining liquid Pressure in liquids 3.2.3 Pressure due to a liquid Column 3.3 Atmospheric pressure 3.4 Pascal's Law 3.5 Density 3.5.3 Floating and Sinking 3.5.4 Application of Principle of Floatation 3.6 Buoyancy 3.7 Archimedes principle
4. Electric Charge and Electric Current	4.1 Electric charges 4.1.1 Measuring electric charge 4.1.2 Electric force 4.1.3 Electric field 4.1.4 Electric potential 4.2 Electric current 4.2.1 Direction of current 4.2.2 Measurement of electric current 4.2.3 Electromotive force (e.m.f) 4.2.4 Potential difference (pd) 4.2.5 Resistance 4.5 Types of current 4.5.1 Direct current 4.5.2 Alternating current
5. Magnetism & Electromagnetism	5.1 Magnetic field 5.2 Magnetic field lines 5.2.1 Magnetic flux 5.2.2 Properties of magnetic lines of Force 5.3 Magnetic effect of current 5.4 Force on a current carrying conductor in a magnetic field

	5.5 Force on parallel current carrying conductors, Connection between electricity and magnetism 5.6 Electric motor 5.7 Electromagnetic Induction 5.8 Electric generator
6. Light	6.1 Reflection of Light 6.1.1 Laws of reflection 6.4 Concave Mirror 6.4.1 Image Formation 6.4.2 Sign convention for measurement of distances 6.4.3 Mirror equation 6.4.4 Linear Magnification 6.5 Convex Mirror 6.5.1 Image formation 6.6 Speed of light 6.7 Refraction of light
7. Heat	7.1 Effects of Heat 7.2 Transfer of Heat 7.2.1 Conduction 7.2.2 Convection 7.2.3 Radiation 7.6 Change of state
8. Sound	8.1 Production of sound 8.2 Propagation of sound waves 8.2.1 Sound needs a medium for Propagation 8.3 Characteristics of a sound Wave 8.5 Speed of sound 8.9 Ultrasonic Sound 8.9.1 Applications of Ultrasonic Waves
9. Universe	9.5 Kepler's Laws 9.6 International Space Station 9.6.1 Benefits of ISS 9.6.2 ISS and International cooperation

10. Matter Around Us	10.1 Classification of Matter 10.1.1 Elements 10.1.2 Compounds 10.1.3 Mixtures 10.1.4 Differences between compounds and mixtures 10.2 Types of mixtures 10.2.1 Homogeneous and Heterogeneous mixtures
11. Atomic Structure	11.5 Atomic number and Mass number 11.5.1 Electronic configuration of atoms 11.5.2 Valence electrons 11.5.3 Valency 11.6 Isotopes, Isobars and Isotones 11.6.1 Isotopes 11.6.2 Isobars 11.6.3 Isotones 11.7 Laws of chemical combinations 11.7.1 Law of multiple Proportions 11.7.2 Law of reciprocal Proportions 11.7.3 Gay Lussac's law of combining Volumes
12. Periodic Classification of Elements	12.1 Early concepts of classification of elements 12.1.1 Dobereiner's triads 12.1.2 Newland's law of octaves 12.1.3 Mendeleev's periodic table 12.3 Metals, non-metals and metalloids 12.3.1 Metals 12.3.2 Non-metals 12.3.3 Metalloids
13. Chemical Bonding	13.3 Types of chemical bond 13.3.1 Ionic or electrovalent bond 13.3.2 Covalent bond 13.3.3 Co-ordinate covalent bond

14. Acids, Bases and Salts	14.1 Acids 14.1.1 Classification of acids 14.1.2 Properties of acids 14.1.3 Uses of acids 14.2 Bases 14.2.1 Classification of base 14.2.2 Properties of bases 14.2.3 Uses of bases 14.3 Tests for acids and bases
15. Carbon and its Compounds	15.1 Discovery of Carbon – Milestones 15.2 Compounds of Carbon – classification 15.2.1 Organic compounds of Carbon 15.2.2 Inorganic compounds of Carbon 15.3 Special features of Carbon 15.3.1 Catenation 15.3.2 Tetravalency 15.3.3 Multiple bonds 15.3.4 Isomerism 15.7 Plastics – Catenated long chain carbon compounds 15.7.1 Drawbacks of plastics 15.8 New rules to make Tamilnadu plastic free 15.8.1 Banned items 15.9 Role of students in the prevention of plastic pollution 15.9.1 What can you do to prevent plastic pollution? 15.9.2 Practice in your daily life

16. Applied Chemistry	16.2 Pharmaceutical Chemistry 16.2.1 Drugs 16.2.2 Characteristics of drugs 16.3 Electrochemistry 16.3.1 Electrochemical cell 16.4 Radiochemistry 16.4.1 Applications of Radio chemistry
17. Animal Kingdom	17.1 Classification of living Organisms 17.1.1 Basis for classification 17.2 Invertebrata 17.2.1 Phylum Porifera 17.2.2 Phylum Coelenterata 17.2.3 Phylum Platyhelminthes 17.2.4 Phylum Aschelminthes 17.2.5 Phylum Annelida 17.2.6 Phylum Arthropoda 17.2.7 Phylum Mollusca 17.2.8 Phylum Echinodermata 17.2.9 Phylum Hemichordata
18. Organization Of Tissues	18.1 Plant Tissues 18.1.1 Meristematic Tissues 18.1.2 Permanent Tissues 18.2 Animal Tissues 18.2.1 Epithelial Tissue 18.2.2 Connective tissue 18.2.3 Muscular tissue 18.2.4 Nerves tissue
19. Plant Physiology	19.1 Tropism in plants 19.1.1 Types of tropism 19.2 Nastic movements
21. Nutrition and Health	21.1 Classes of nutrients 21.2 Protein Energy Malnutrition (PEM)

22. World of Microbes	22.3 Microbes and Diseases 22.4 Airborne Diseases 22.5 Waterborne Diseases 22.6 Vector Borne Diseases 22.7 Diseases Transmitted by Animals 22.8 Sexually Transmitted Diseases 22.9 Immunization
23. Economic Biology	23.1 Horticulture 23.2 Manuring 23.4 Medicinal Plants 23.9 Dairy Farming 23.13 Vermitechnology 23.14 Apiculture
24. Environmental Science	24.1 Biogeochemical Cycles 24.3 Adaptations of Animals
Practicals	1. Vernier Caliper 2. Screw gauge 4. Measurement of volume of liquid. 5. Identification of adaptation in animals. 6. Identification of plant and animal tissues.