

Akal Academy



The Real Education

Subject : Science
Grade : III to VIII

2019 - 2020

CLASS: III

SUBJECT: Science

Name of the books : Frank Experience Science

Name of the publisher : Franks Brother

Duration	Content	Subject Enrichment Activity
01/04/2019 To 17/05/2019	Ch 1 : What Do Animal Ch 2 : Safety	
Pre Mid- Term Exam (18/05/2019 – 27/05/2019)		
Unit II (Mid-Term)		
Duration	Content	Subject Enrichment Activity
01/07/2019 To 03/09/2019	Ch 3 : Soil Ch 4 : Living and Non Living things Ch 5 : Parts of a plant (Project work)	
Mid- Term Exam (4/09/2019 - 14/09/2019)		
Unit III (Post Mid-Term)		
Duration	Content	Subject Enrichment Activity
21/09/2019 to 10/12/2019	Ch 6 : Bird Ch 7 : The Human Body Ch 8 : Measurement (Project)	
Post Mid- Term Exam(11/12/2019-20/12/2019)		
Duration	Content	Subject Enrichment Activity
21/12/2019 to 20/02/2020	Ch 9 : Light and Sound Ch 10: The Earth and her Neighbours Ch 11: Water and Weather	
20/02/2020 – 01/03/2020	Conducting of oral (Practical) examinations and revision for final exams	
Final Exam (4/3/2020 to 15/3/2020)		

CLASS: IV

SUBJECT: Science

Name of the books : Frank Experience Science

Name of the publisher : Franks Brother

Duration	Content	Subject Enrichment Activity
01/04/2019 To 17/05/2019	Ch 1 : Food and Digestion Ch 2 : Teeth and Microbes	
Pre Mid- Term Exam (18/05/2019 – 27/05/2019)		
Unit II (Mid-Term)		
Duration	Content	Subject Enrichment Activity
01/07/2019 To 03/09/2019	Ch 3 : Safety in First aid (Project) Ch 4 : Clothes we wear Ch 5 : Solid, Liquid and Gases Ch 6 : How Plants make and store food	
Mid- Term Exam (4/09/2019 - 14/09/2019)		
Unit III (Post Mid-Term)		
Duration	Content	Subject Enrichment Activity
21/09/2019 to 10/12/2019	Ch 7 : How do Plants survive Ch 8 : Animal and their young ones Ch 9 : How do Animals survive	
Post Mid- Term Exam(11/12/2019-20/12/2019)		
Duration	Content	Subject Enrichment Activity
21/12/2019 to 20/02/2020	Ch 10: Force, work and energy (Project) Ch 11: The earth and its neighbour Ch 12 : Air, Water and Weather Ch 13 : Our Green World	
20/02/2020 – 01/03/2020	Conducting of oral (Practical) examinations and revision for final exams	
Final Exam (4/3/2020 to 15/3/2020)		

CLASS: V

SUBJECT: Science

Name of the books : Frank Experience Science

Name of the publisher : Franks Brother

Duration	Content	Subject Enrichment Activity
01/04/2019 To 17/05/2019	Ch 1 : How Plants increase in number Ch 2 : Food and health Ch 3 : First Aid (Project)	
Pre Mid- Term Exam (18/05/2019 – 27/05/2019)		
Unit II (Mid-Term)		
Duration	Content	Subject Enrichment Activity
01/07/2019 To 03/09/2019	Ch 4 : Houses Around us Ch 5 : Matter Ch 6 : Solid erosion and conservations Ch 7 : Rocks and minerals (Project)	
Mid- Term Exam (4/09/2019 - 14/09/2019)		
Unit III (Post Mid-Term)		
Duration	Content	Subject Enrichment Activity
21/09/2019 to 10/12/2019	Ch 8 : The Worlds of Animals (Project) Ch 9 : The skeletal system Ch 10: Nervous System Ch 11: Force and energy	
Post Mid- Term Exam(11/12/2019-20/12/2019)		
Duration	Content	Subject Enrichment Activity
21/12/2019 to 20/02/2020	Ch 12 : Air and Water Ch 13 : The Earth Satellites (Project) Ch 14 : Natural Disasters Ch 15 : Our Environment	
20/02/2020 – 01/03/2020	Conducting of oral (Practical) examinations and revision for final exams	
Final Exam (4/3/2020 to 15/3/2020)		

Name of the book: Basic Science 5

Name of the publisher: Bharti Bhawan

Unit I (Pre Mid-Term)

Revisit – Basics in English and Mathematics/Identification of learning gap areas(21/02/2019 – 28/02/2019)			
Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity
01/04/2019 To 17/05/2019	<p>Physics Measurement</p> <p>Motion</p> <p>Chemistry Matter and its nature</p> <p>Biology Food</p>	<p>How to measure Standard units. Measuring length. Use of Ruler & measurement of curved lines. Types of motion-linear, Rotational, Circular and Periodic.</p> <p>Digital content is available in class IX Chapter 1(Matter in our surroundings).</p> <p>Food from plants & Animals Food habits of Animals Constituents of food Balanced Diet & deficiency diseases</p>	<p>Physics To measure common classrooms objects using cubit, palm, length etc.</p> <p>To identify motion of a given objects.</p> <p>Biology To check the presence of starch, fat and proteins.</p>
Pre Mid- Term Exam (18/05/2019 – 27/05/2019)			
Unit II (Mid-Term)			
Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity
01/07/2019 To 03/09/2019	<p>Chemistry Clothes and fibres</p> <p>Separation of mixtures</p> <p>Physics Light</p> <p>Biology Air – The Breath of life</p>	<p>How cloth is made? Kinds of Fibres- Cotton, Jute and their uses</p> <p>The Need for separation Methods of separation- Handpicking Winnowing, sieving, magnetic, sedimentation & decantation, evaporation Churning, filtration, Distillation.</p> <p>How light travels. Transparent, translucent & opaque objects, Shadow & its nature Eclipse, Pinhole camera, Images Reflection</p> <p>Presence of Air, Soils &</p>	<p>Chemistry An activity to compare burning of different types of clothes.</p> <p>Experiments to show: handpicking, magnetic separation of mixture.</p> <p>Physics To show rectilinear propagation of light.</p> <p>Biology To show air contains $1/5$ O₂ and</p>

		water contains air, Displacement of Air by water, composition of Air. O ₂ -CO ₂ balance and uses of air.	4/5 N ₂ and other gases.
Mid- Term Exam (04/09/2019 – 14/09/2019)			
Unit III (Post Mid-Term)			
Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity
21/09/2019 to 10/12/2019	<p>Chemistry Classification of material</p> <p>A Study of Changes</p> <p>Biology The Living and the Non- living</p> <p>Habitat and Adaptation</p> <p>Physics Electric Circuit</p>	<p>Importance of classification How to classify materials</p> <p>How to study changes Types of changes – Physical, Chemical, Slow & Fast. Reversible & Irreversible changes</p> <p>Types of habitat, Adaption in different organisms like Fish, Cactus, Camel and Aquatic plants</p> <p>The Cell, Bulb, Circuit, torch, conduction & Insulators</p>	<p>Chemistry Collecting and grouping things on the basis of physical properties.</p> <p>Experiment to study: (a) Charring of sugar (b) Exothermic changes.</p> <p>Biology To observe cheek cell, onion cell and stomata under microscope.</p> <p>Physics Project/Model based on the Chapter Electricity on any one of the following topics: (a) To make an electric circuit using switch, bulb, wire and battery. (b) To make a project on conductors and insulators. (c) To make a model of switch using drawing pins, block of wood and paper clips</p>
Post Mid- Term Exam(11/12/2019-20/12/2019)			
Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity
21/12/2019 to 20/02/2020	<p>Physics Magnetism</p> <p>Biology Water</p>	<p>Properties of Magnet. Magnetic poles and their nature, magnetic compass. Use of magnet, storing a magnet safely.</p> <p>Water is essential for life. Use of water, states of water, water cycle.</p>	<p>To show a suspended bar magnet always points in north south direction.</p> <p>Assignment: To draw water cycle.</p>
21/2/2020 – 01/03/2020	Conducting of oral (Practical) examinations and revision for final exams		
Final Exam (04/03/2020 -15/03/2020)			

Name of the book: Basic Science 7

Name of the publisher: Bharati Bhawan

Unit I (Pre Mid-Term)

Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity
01/04/2019 To 17/05/2019	<p>Physics Heat</p> <p>Chemistry Language of Chemistry</p> <p>Supplementary material: Structure of an atom & Valency chart.</p> <p>Biology Obtaining and Utilizing food</p>	<p>Physics Hot and cold, Measuring Temperature, Types of heat, Conduction, convection and radiation</p> <p>Digital content is available in class IX Chapter 3(Atoms and molecules).</p> <p>Digital content is available in class IX Chapter 4.</p> <p>Stomata structure and functions, Transport of water in plants, Saprophytes, Photosynthesis, Insectivorous, Parasites, Food, Digestion in humans, Grass eating animals and Nutrition in Amoeba.</p>	<p>Physics</p> <ul style="list-style-type: none"> To show expansion in different objects <p>Chemistry Assignment:</p> <ul style="list-style-type: none"> To prepare a table showing atomic no, symbol, electronic configuration, atomic mass of different elements. Worksheet based on formula making by using valency chart. <p>Biology</p> <ul style="list-style-type: none"> Activity:-Green plants cannot make food without chlorophyll.
Pre Mid- Term Exam (18/05/2019 – 27/05/2019)			
Unit II (Mid-Term)			
Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity

<p>07/07/2019 To 03/09/2019</p>	<p>Physics Electricity Supplementary Material: Electricity & Charges in motion.</p> <p>Chemistry Acids, bases and salts</p> <p>Fibres from animals</p> <p>Biology Transport and Excretion</p>	<p>Electric components, Heating effect of electric current, Magnetic effect of electric current, Electromagnet, Electric bell</p> <p>Acids, Bases, Indicators, Neutralization, Salts, Classification of Acids, Uses of Acids, Reaction of Acids with metal, Uses of Bases</p> <p>Blood, Blood vessels, Heart Excretion, Transportation in plants, Circulatory system and excretory systems in humans</p>	<p>Physics:</p> <ul style="list-style-type: none"> To show electric components and to draw their symbols. To construct a simple circuit. Open circuit and closed circuit. Magnetic effects and strength of electromagnet. <p>Chemistry: Assignment: To show lemon juice causes effervescence with baking soda.</p> <ul style="list-style-type: none"> Activity: To show that acid turns blue litmus red and base turns red litmus blue. Activity: To study absorption capacity of fabric. <p>Biology</p> <ul style="list-style-type: none"> Activity: To show function of xylem. Assignment: Draw well labeled diagram of excretory system.
<p>Mid- Term Exam (04/09/2019 – 14/09/2019)</p>			
<p>Unit III (Post Mid-Term)</p>			
<p>Duration</p>	<p>Content</p>	<p>Digital Contents available in Smart class</p>	<p>Subject Enrichment Activity</p>
<p>21/09/2019 to 10/12/2019</p>	<p>Physics Light Supplementary Material: Light</p> <p>Chemistry Changes and reactions</p> <p>Biology Reproduction in plants. Respiration in plants and animals.</p>	<p>Light travels along straight line, Reflection of light Lateral inversion Playing with spherical mirrors, Images formation by lenses, Sunlight: white or coloured.</p> <p>Types of changes , Physical changes, Characteristics of physical changes, Example of physical changes, Chemical reactions , Characteristics of chemical changes, Rusting of iron, Galvanization, Crystal Subject Enrichment Activity</p> <p>Respiration, Breathing Breathing in other animals Breathing in plants, Reproduction, Sexual reproduction, Fruits and seeds formation, Seed dispersal</p>	<p>Physics Converging action of lens. Dispersion of light.</p> <p>Chemistry</p> <ul style="list-style-type: none"> Lab activity to study <ul style="list-style-type: none"> Combination reaction Displacement reaction Sublimation Charring of sugar <p>Biology Activity</p> <ul style="list-style-type: none"> To show budding in yeast To show that roots also breathe.

Post Mid- Term Exam(11/12/2019-20/12/2019)			
Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity
21/12/2019 to 20/02/2020	Physics Time, Motion and speed Biology Soil Note : Project based on Chapter 18 'Waste Management' Revision	Measurement of time Motion: slow or fast Speed, Graph and its types Soil: Natural resources Soil profile, Types of soil, Soil and crops, Properties of soil, Soil erosion, Preparing soil for pottery	Physics: Distance-Time graph for uniform motion and non- uniform motion. Biology: Activity: To show water holding capacity of sandy and clayey soil.
21/2/2020 – 01/03/2020	Conducting of oral (Practical) examinations and revision for final exams		
Final Exam (04/03/2020 -15/03/2020)			

Name of the Books: Basic Science – 8

Name of the Publisher: Bharati Bhawan

Unit I (Pre Mid-Term)

Revisit – Basics in English and Mathematics/Identification of learning gap areas(21/02/2019 – 28/02/2019)			
Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity
01/04/2019 To 17/05/2019	<p>Physics</p> <ul style="list-style-type: none"> - Force and Pressure - Earthquake <p>Chemistry</p> <ul style="list-style-type: none"> - Synthetic material - Structure of atom (Supplementary Material) <p>Biology</p> <ul style="list-style-type: none"> - Food Production - The Cell (upto Cell structure) 	<p>Push and pull , contact and non-contact forces, friction & its effects, increasing & reducing friction pressure & examples variation of pressure with depth.</p> <p>Earthquake, cause, focus, epicenter, protection against earthquake.</p> <p>Polymerization, synthetic fibers & uses, thermosetting plastics, thermoplastics, nylon, properties of synthetic fibers and environmental effects.</p> <p>Digital content is available in class IX Chapter 4.</p> <p>Manures, fertilizers, tools for agriculture, agricultural practices and irrigation.</p> <p>Overview of animal cell, microscope and chloroplast.</p>	<p>Physics</p> <ul style="list-style-type: none"> • To show that force of friction depends on the nature of surface in contact. • To show rolling friction is less than sliding friction. • To show that pressure increases with depth. <p>Chemistry</p> <ul style="list-style-type: none"> • To design poster on the theme 'say no to plastics to discourage people from using plastic bags. <p>Biology</p> <ul style="list-style-type: none"> • To show the root nodules present in the leguminous plants . • Prepare slides of onion peel and cheek cells and observe it under microscope.
Pre Mid- Term Exam (18/05/2019 – 27/05/2019)			
Unit II (Mid-Term)			
Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity

<p>01/07/2019 To 03/09/2019</p>	<p>Physics - Sound</p> <p>- Electricity & Lightning</p> <p>Chemistry - Combustion and fuels</p> <p>Supplementary: Some important chemical compounds and their formulae.</p> <p>Biology - The Cell (contd...)</p> <p>- Microorganisms</p>	<p>Propagation of sound & its characteristics, bell jar exp. , human ear, percussion, wind & string instruments, sound produced by humans.</p> <p>Like charges repel each others, unlike attract each others, gold leaf electroscope conduction, lightning & safety measures.</p> <p>Oxygen is essential for burning, types of fuels, petroleum refining</p> <p>Digital contents of supplementary material are available in class (X) Chapter 1 (Chemical equations and reactions).</p> <p>Human cheek cells onion peel exp. , animal cell: nucleus</p> <p>Nitrogen cycle, saprophytes, communicable diseases, AIDS, prokaryotic cell, useful microorganisms, and biogas.</p>	<p>Physics</p> <ul style="list-style-type: none"> • Assignment: To draw a structure of human ear. • Assignment: Hot questions based on topic “Electricity & lightning”. <p>Chemistry Activity: To study the boiling of water in paper cup.</p> <p>Biology</p> <ul style="list-style-type: none"> • Activity: To see the bacteria that help in yoghurt formation. • Assignment: Draw diagram of E.coli, AIDS Virus, and Euglena.
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Mid- Term Exam (04/09/2019 – 14/09/2019)

Unit III (Post Mid-Term)

Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity
<p>21/09/2019 to 10/12/2019</p>	<p>Physics - Light and Vision</p> <p>- Light (Supplementary material)</p> <p>Chemistry - Metals and non metals. - Supplementary: Chemical reactions.</p> <p>- Biology - Natural Resources</p> <p>- Conservation</p>	<p>Converging and diverging action of convex and concave lens, human eye & defects, multiple reflections, dispersion of light</p> <p>Spherical mirrors.</p> <p>Rust, displacement reactions, reaction of metals with acids, ductility, malleability, hardness, luster, sonorous, non-metals</p> <p>Natural resources, alternative energy resources, destructive distillation of coal, harmful effects of carbon and deforestation.</p> <p>Global warming, Forest ecosystem, deforestation and its consequences.</p>	<p>Physics Assignment:</p> <ul style="list-style-type: none"> • Draw a labelled diagram of human eye and describe how it works. • Ray diagrams related to concave and convex mirror. <p>Chemistry Activity:</p> <ul style="list-style-type: none"> • To show reaction of most reactive metals like sodium and potassium with cold water. • To show displacement of hydrogen from acids. <p>Biology Activity: To show how waste paper is recycled.</p> <ul style="list-style-type: none"> • Assignment: Some endangered animals and their habitat in India.

Post Mid- Term Exam (11/12/2019-20/12/2019)

Unit IV

Duration	Content	Digital Contents available in Smart class	Subject Enrichment Activity
21/12/2019 to 20/02/2020	<p>Physics - Electricity (supplementary material)</p> <p>Chemistry - Chemical effects of electric current</p> <p>Biology - Pollution of air and water</p>	<p>Digital contents of supplementary material are available in class (X) Chapter 12(Electricity).</p> <p>Good & poor conductors of liquids, electroplating.</p> <p>Water pollution and its conservation, air pollution, its effects & reduction.</p>	<p>Physics Assignment :</p> <ul style="list-style-type: none"> Numerical related to electricity(supplementary material) <p>Activity:</p> <ul style="list-style-type: none"> To show how bodies are getting charged. <p>Chemistry Activity:</p> <ul style="list-style-type: none"> To show electroplating of coin with copper. <p>Biology Assignment:</p> <ul style="list-style-type: none"> Draw diagram of showing operation at water works.
21/02/2020 to 01/03/2020	Conduction of Oral(Practical) Examination & Revision for Final Exam		
Final Exam (04/03/2020 -15/03/2020)			

Internal Assessment (For Grade VI to VIII)

Sl. No.	Description	M.M.: 20
1	Paper Pencil Test	5 marks
2	Assessment using multiple strategies; eg: Quiz, Debate, Role play, group discussion etc.	5 marks
3.	Portfolio (Notebook, Assignment)	5 marks
4.	Subject Enrichment Activity (Project)	5 marks