

Dawood Public School
Course Outline 2017-2018
Science
Class V

Book and Work book:

- International Primary Science-5 (Ho Peck Leng)
- Marshall Cavendish Education

Months	Contents	Page #
August	Gases All Around	29-51
September	Changing States of Matter	55-73
October	Discovering Plants	81-117
November	Revision for Mid-Term Exams	-
December	Mid- term Exams	-
January	Electricity	141-151
February	Sounds All Around	119-139
March	Keeping Healthy	1-26
April	Revision for Final Exams	-
May	Final Exams	-

Syllabus Content

August

Chapter: Gases all around

Pg # 29-51

Contents	Learning Objectives
<p>Properties of matter. Matter is anything that has mass and occupies space. It exists in three states as;</p> <ul style="list-style-type: none"> • Solid • Liquid • Gas <p>Properties of solids, liquids and gas.</p>	<ul style="list-style-type: none"> • Define 'matter'. • List the properties of solids, liquids and gases. • Differentiate between solids, liquids and gases on the basis of their properties. • Draw the particle arrangement model of solids, liquids and gases.
<p>Atmosphere and gases around us. 'The atmosphere is a thin layer of gases that surrounds the Earth'. It consists of several different gases like;</p> <ul style="list-style-type: none"> • Oxygen • Carbon dioxide • Nitrogen • Noble gases 	<ul style="list-style-type: none"> • Define the term 'atmosphere' • Identify the composition and percentage of different gases in the atmosphere. • List the uses of different gases present in atmosphere. • Identify the pictures showing multiple uses of different gases.
<p>Global warming and its multiple effects on the environment. 'Global Warming is the increase of Earth's average surface temperature'.</p>	<ul style="list-style-type: none"> • Define 'global warming'. • List the harmful effects of global warming.
<p>Air content in soil. Air is trapped within the spaces between soil particles and is essential for the survival of organisms living in the soil.</p>	<ul style="list-style-type: none"> • Explain the benefits of air content in soil. • State the ways animals survive in the soil.
<p>Soil and types.</p> <ul style="list-style-type: none"> • Loamy • Clayey • Sandy 	<ul style="list-style-type: none"> • List the different types of soil • State the variations in air content in each type of soil.
<p>Key Words: matter, space, volume, solid, liquid, gas, atmosphere, oxygen, carbon dioxide, extinguish, nitrogen, helium, neon, argon, aerate, sandy, clayey, loamy garden, conductor, insulator.</p> <p>Types of questions:</p> <ul style="list-style-type: none"> • Multiple Choice questions • Differences • Short reasoning questions • Experimental questions <p>Workbook activities:</p> <ul style="list-style-type: none"> • Activity 2.1, 2.2, 2.3, 2.4, 2.5 <p>Activities/Experiments:</p> <ul style="list-style-type: none"> • Students will observe the uses of different gases • Power point presentation on Gases All Around. <p>Surf I.T:</p> <ul style="list-style-type: none"> ✓ Gases <ul style="list-style-type: none"> • http://www.sciencekids.co.nz/gamesactivities/gases.html • http://www.chem4kids.com/files/matter-gas.html ✓ Air <ul style="list-style-type: none"> • http://www.eo.ucar.edu/kids/sky/air1.htm • http://www.clean-air-kids.org.uk/globalwarming.html 	

Contents	Learning Objectives
Changes of state	<ul style="list-style-type: none"> Understand that heating or cooling is needed for a change of state to take place from one state of matter to another state. Recognize that water exists in three interchangeable states of matter.
When water loses heat <ul style="list-style-type: none"> Freezing Condensation 	<ul style="list-style-type: none"> Define 'freezing'. Define 'condensation'. Identify the pictures showing process of condensation.
When water gains heat <ul style="list-style-type: none"> Melting Boiling 	<ul style="list-style-type: none"> Define 'boiling'. Define 'melting'.
Evaporation	<ul style="list-style-type: none"> Explain the process of evaporation. List the factors affecting the rate of evaporation.
The water cycle	<ul style="list-style-type: none"> List the steps involved in the process of water cycle. Describe the importance of water cycle.
Purifying and treating water <ul style="list-style-type: none"> Distillation Filtration 	<ul style="list-style-type: none"> Differentiate between the filtration and distillation processes. List the steps involved in the water purifying processes : <ul style="list-style-type: none"> ➤ Distillation ➤ Filtration
Water borne diseases Causes of water pollution.	<ul style="list-style-type: none"> State the importance of clean water. List the ways of keeping water clean. List the types of impurities found in water. Name some water borne diseases.
<p>Key Words: freezing, condensation, melting, boiling, evaporation, variable, temperature, humidity, condense, distillation, distilled, filtration, filtrate, residue.</p> <p>Types of questions:</p> <ul style="list-style-type: none"> Multiple Choice questions Differences between different processes. Questions with illustrations Descriptive questions Labeling of diagrams <p>Workbook activities:</p> <ul style="list-style-type: none"> Activity 3.1, 3.2, 3.3, 3.5, 3.6 <p>Activities/Experiments: Students will:</p> <ul style="list-style-type: none"> Be engaged in Mirror activity. Make popsicles. Visit the laboratory for boiling water activity. Make a virtual water cycle. Be engaged in particle formation activity. <p>Surf I.T:</p> <ul style="list-style-type: none"> ✓ Changing states <ul style="list-style-type: none"> http://www.bbc.co.uk/schools/scienceclips http://www.crickweb.co.uk/ks2science.html ✓ The water cycle <ul style="list-style-type: none"> http://www.crickweb.co.uk/ks2science.html ✓ Water treatment, pollution and conservation <ul style="list-style-type: none"> http://pulitzercentre.org/downstream 	

Contents	Learning Objectives
Reproduction of flowering plants Parts of flower	<ul style="list-style-type: none"> • Name different processes involved in the reproduction of flowering plant. • Label, draw and write the function of different parts of flower. • Differentiate between male and female parts of flower.
Pollination and its types Pollinators	<ul style="list-style-type: none"> • Explain the process of pollination. • Differentiate between self and cross pollination with their respective illustrations. • List some pollinators and identify the flowers' pollinator on the basis of their specific features.
Fertilization	<ul style="list-style-type: none"> • List the steps involved in the process of fertilization with their respective illustrations.
Fruits and their types	<ul style="list-style-type: none"> • Identify the fruits on the basis of their specific characteristics. • State the importance of fruits in plant growth.
Seed dispersal and their methods	<ul style="list-style-type: none"> • Express in detail the different methods of seed dispersal with examples of fruits.
Germination Structure of bean and maize seed Life cycle of plant	<ul style="list-style-type: none"> • List the necessary conditions required for seed germination and plant growth. • Label, distinguish and state the functions of bean and maize seeds. • List the stages involved in plant's life cycle.
<p>Key Words: reproduction, pollination, fertilization, seed dispersal, germination, nectar, pollinators, nutrients, overcrowding, dicotyledonous, monocotyledon.</p> <p>Types of questions:</p> <ul style="list-style-type: none"> • Multiple Choice questions • Differences between different processes • Questions with illustrations • Descriptive questions • Labeling and drawing of diagrams • Short reasoning questions <p>Workbook activities:</p> <ul style="list-style-type: none"> • Activity 3.1, 3.2, 3.3, 3.5, 3.6 <p>Activities/Experiments: Students will:</p> <ul style="list-style-type: none"> • Identify different parts of a flower. • Be engaged in 'Cheetos' pollination activity with finger puppets. • Have fun with fruits and vegetables. • Play Sultana game in school garden. • Sow seeds. <p>Surf I.T:</p> <ul style="list-style-type: none"> ✓ Plants and flowers <ul style="list-style-type: none"> • http://www.the teachersguide.com/plantsflowers.htm ✓ Pollination <ul style="list-style-type: none"> • http://www.neok12.com/Pollination.htm 	

- ✓ **Seed dispersal**
 - <http://theseedsite.co.uk/dispersal.html>
- ✓ **Interactive activities on life cycles of plants**
 - <http://www.crickweb.co.uk/ks2science.html#lcycles5b>
- ✓ **Germination video**
 - <http://www.teachersdomain.org/asset/lsp07-int-plantmovies/>

November: Revision for Mid Term Examination 2017

December: Mid Term Examination 2017

January

Chapter: Electricity

Pg # 98-113

Contents	Learning Objectives
Atom and its sub atomic particles	<ul style="list-style-type: none"> • Define 'atom'. • Draw the arrangement of the sub atomic particles in an atom. • Identify the location and charges present on the sub atomic particles. • Describe how atom becomes an ion (negatively charge or positively charge). • Draw the structure of atom.
Static electricity	<ul style="list-style-type: none"> • Define 'static electricity'. • Describe how things get charged up. • State the law of electric charges. • Observe the occurrence of static electricity through different experiments. • Explain scientific reasons for occurrence of static electricity during winter. • Enlist the different uses of static electricity in our daily life.
Conductors and insulators	<ul style="list-style-type: none"> • Differentiate between conductors and insulators. • Identify the materials as insulator and conductor.
Using and Saving Electricity	<ul style="list-style-type: none"> • List the different ways of using and saving electricity.
Renewable and non renewable resources.	<ul style="list-style-type: none"> • Name the non renewable and renewable energy resources. • Differentiate between renewable and non renewable energy resources.
<p>Key Words: atom, proton, electron, neutron, nucleus, negatively charged, positively charged, neutral, attract, repel, humidity, energy resources, fossil fuels, renewable .</p> <p>Types of questions:</p> <ul style="list-style-type: none"> • Multiple Choice questions • Differences • Short reasoning questions • Experimental questions • Drawing structure of atom <p>Workbook activities:</p> <ul style="list-style-type: none"> • Activity 6.1, 6.2, 6.3, 6.4, 6.5. 	

Activities/Experiments:

- Model of atom will be made with the help of ping pong balls of different colors representing arrangement of electrons, protons and neutrons in an atom.
- Show the phenomenon of attraction or repulsion with the help of different objects.

Surf I.T:

- <https://www.youtube.com/watch?v=G-vX4GHNEuo>
- <https://www.youtube.com/watch?v=wMOpMka6PJI>
- <https://www.youtube.com/watch?v=8eKxgRnRRug>
- <https://www.youtube.com/watch?v=G-vX4GHNEuo>

February**Chapter** Sounds all around

Pg # 119-139

Contents	Learning Objectives
Sounds around us	<ul style="list-style-type: none"> • State that sound is a form of energy. • Recognize that sounds are all around us. • Explain that sounds are used for communication and to express emotions.
Sounds are produced by vibrations	<ul style="list-style-type: none"> • Describe how sound is produced. • Describe different type of sounds. • Differentiate between the energy levels of different sounds. • Define 'frequency'.
Travelling sound	<ul style="list-style-type: none"> • Describe the process of sound travel.
How our ears hear sounds?	<ul style="list-style-type: none"> • Identify the organ which detects sound. • Identify the different parts of a human ear and relate these parts to their functions. • Label the internal structure of human ear.
Sound needs a medium to travel.	<ul style="list-style-type: none"> • Define 'sound waves'. • Explain how sound uses a medium to travel. • Describe the role of 'vacuum' in sound travel.
Reflecting sound.	<ul style="list-style-type: none"> • Define 'echo'. • Explain the occurrence of echo. • State that hard surfaces can reflect sound better than soft surfaces.
Pitch	<ul style="list-style-type: none"> • Define 'pitch'. • Differentiate between low pitched and high pitched sounds.
Pleasant and unpleasant sounds	<ul style="list-style-type: none"> • Differentiate the wave patterns for pleasant and unpleasant sounds. • Identify and list the pleasant and unpleasant sounds. • Draw the wave pattern of: <ul style="list-style-type: none"> ➤ pure note ➤ pleasant sound ➤ unpleasant sound ➤ noise

Key Words:

communication, expression, tuning fork, frequency, Hertz, vibration, vacuum, ripples, ear canal, ear drum, hammer, anvil, stirrup, semi circular canal, cochlea, auditory nerve, echo, pitch, oscilloscope

Types of questions:

- Multiple Choice questions
- Differences
- Short reasoning questions
- Experimental questions
- Drawing of sound waves
- Labeling of structure of human ear.

Workbook activities:

- Activity 5.1, 5.2, 5.3, 5.4, 5.6

Activities/Experiments:

- Students will be taken to a room having plastic chairs on one side and having no object on another side, to hear the reflecting sounds.
- Role play on different parts and function of the ear.

Surf I.T:

- <https://www.youtube.com/watch?v=AGjxfx8sy6s>
- <https://www.youtube.com/watch?v=HMx0HKwWmU8>

March

Chapter: Keeping HealthyPg # 1-26

Contents	Learning Objectives
<p>Circulatory system in human body.</p> <ul style="list-style-type: none"> • Blood • Blood vessels • Heart 	<ul style="list-style-type: none"> • Describe the main components of blood. • Relate the adaptation of blood cells with its functions • Name the different types of blood vessels present in the human body • Describe the function and adaptations of arteries, veins and capillaries. • Differentiate between arteries, veins and capillaries. • Identify the location of heart in the body. • Explain the structure and function of the different parts of human heart. • Distinguish between the parts which carry oxygenated and deoxygenated blood. • Draw the pathway of blood from the heart throughout the body. • Describe how respiratory system is interlinked with circulatory system. • Compare the transport system in man with the city transport system.
<p>Contagious and non-contagious diseases</p>	<ul style="list-style-type: none"> • Define contagious and non-contagious diseases. • Classify diseases as contagious and non-contagious. • Describe how contagious diseases are transmitted. • State the causes, symptoms, preventions and cures of common contagious and non-contagious diseases.

<p>Useful and harmful drugs</p> <ul style="list-style-type: none"> • Medicinal drugs • Drug abuse 	<ul style="list-style-type: none"> • Define the term 'drug'. • List some harmful and useful drugs. • Classify medicinal drugs based on their uses. • Recognize that drugs, even medicinal drugs, can be abused or misused.
<p>Tobacco</p>	<ul style="list-style-type: none"> • Describe the harmful effects of drugs in tobacco. • List the harmful effects of tobacco on human health.

April: Revision for Final Examination 2017-18

May: Final Examination 2017-18