

Dawood Public School
Course Outline 2017-2018
Science
Class V

Book and Work book:

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

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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.theteachersguide.com/plantsflowers.htm ✓ Pollination <ul style="list-style-type: none"> http://www.neok12.com/Pollination.htm 	

<ul style="list-style-type: none"> ✓ Seed dispersal <ul style="list-style-type: none"> • http://theseedsite.co.uk/dispersal.html ✓ Interactive activities on life cycles of plants <ul style="list-style-type: none"> • http://www.crickweb.co.uk/ks2science.html#lcycles5b ✓ Germination video <ul style="list-style-type: none"> • http://www.teachersdomain.org/asset/lsp07-int-plantmovies/
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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