

DAWOOD PUBLIC SCHOOL
Course Outline for the year 2011-2012
Science
Class-IV

Book:

Rinda Yeo, et al.2008. Let's Learn Science (Standard 4); Marshall Cavendish Education

Syllabus Aims and Assessment:

Aims:

These are not listed in order of priority. The aims are to:

1. Provide, through well designed studies of experimental and practical science, a worthwhile educational experience for all students, whether or not they go on to study science beyond this level and, in particular, to enable them to acquire sufficient understanding and knowledge too.
 - 1.1 Become confident citizens in a technological world, able to take or develop an informed interest in matters of scientific import;
 - 1.2 Recognize the usefulness, and limitations, of scientific method and to appreciate its applicability in other disciplines and in everyday life;
2. Develop abilities and skills that
 - 2.1 Are relevant to the study and practice of science;
 - 2.2 Are useful in everyday life;
 - 2.3 Encourage efficient and safe practice;
 - 2.4 Encourage effective communication.

Monthly Syllabus:

August	<ul style="list-style-type: none"> • Flowers
September	<ul style="list-style-type: none"> • Wastes in our body
October	<ul style="list-style-type: none"> • Wetlands • Ozone layer
November	<ul style="list-style-type: none"> • Revision for Mid Term Exams
December	<ul style="list-style-type: none"> • MID TERM EXAM
January	<ul style="list-style-type: none"> • HEAR! HEAR!
February	<ul style="list-style-type: none"> • Forces at work
March	<ul style="list-style-type: none"> • Sounds • Light and shadow
April/ May	<ul style="list-style-type: none"> • Revision For Final Exams • Final Exams

Syllabus Content:

1. August:

FLOWERS

Chap No.2, Pg No.(16-26)

Contents	Learning outcomes	Activities
2.1 Variety of flowers	Students will be able to Identify different types of flowers and understand the importance of National flower of Pakistan.	To identify the various types of flowers in the school garden. Activity no. 2.1 and 2.2 wk bk pgs no 9-12
2.2 Pollination and its two types. Self pollination and Cross pollination.	.Understand the process of Pollination and its types. Self and cross pollination.	To identify the various parts of a flower.

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2.3 Parts of a flower	.identify different parts of a flower and their functions.	To identify the various parts of a flower and their operational definitions. Activity no.2.4 and 2.5 pgs no.15-20
2.4 Process of fertilization (bisexual and unisexual flowers)	.understand the process of fertilization in unisexual and bisexual flowers.	Different types of unisexual and bisexual flowers will be given to differentiate between them.
2.5 Dispersal of seeds and fruits	. Explain seed dispersal and ways of dispersal.	
2.6 Germination	. Explain germination and will be able to infer that seed leaves are required for germination.	Students will be given different seeds to germinate with the co-ordination of the gardening teacher.

Teaching Aids:

A flower (Hibiscus), a pair of tweezers, a pen knife, a ruler, a box of colour pencils, a magnifier.

2. September

WASTES IN OUR BODY

Chap No.4, Pg No.(43-54)

Contents	Learning outcomes	Activities
4.1 Our digestive system	. Student will be able to: .Understand that the food we eat does not mix directly in the blood, it has to be digested first.	To identify parts of the alimentary canal and their main functions in the digestion of food. Activity no. 4.1 pgs no. 28-32
	. Digestive system consists of different organs which makes our alimentary canal. . Identify different parts and functions. . How undigested food (faeces) are produced and removed from the body. . Identify the waste products of the human body.	
4.2 Our respiratory system (Other kinds of wastes in our body)	To recognize that respiration is the process in which energy is made available to the body cells and CO ₂ (as a waste product) is removed through it.	1. To draw the respiratory system and label the main parts in the system. Activity no 4.2 pg. no. 33-34 2. To find out whether carbon dioxide is present in the air we breathe out. Activity no. 4.3 pg.no 35-36
4.3 Other ways of removing waste in our body. <ul style="list-style-type: none">• Our skin• Our Kidneys	. Understand that how we can get rid of excess water in the form of sweat through skin and urine through kidneys from our body.	To identify the different types of wastes in our body. Activity no. 4.5 pg.no 39-40

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Teaching Aids:

A pair of scissors, glue stick, a test tube, a drinking straw, lime water.

3. October:

WET LANDS

Chap No.5, Pg No.(55-70)

OZONE LAYER

Chap No.6, Pg No.(71-83)

Contents	Learning outcomes	Activities
5.1 Habitat and community	Students will be able to: .Understand the terms Habitat (a place organisms live) Community (it is made up of different populations of organisms living together)	Students will be asked to collect information and pictures of different wetlands (mangroves in coastal areas of Karachi)
5.2 What is Wetland and its major types	Identify wetland and its types according to set characteristics	1.Classify different animals according to their feeding habits and construct 3 food chains and form a food web.
5.3 .A wetland community <ul style="list-style-type: none"> • Food chains • Food webs 	1. State that wetlands provide food for their inhabitants. 2. A food chain shows the food relationship between different organisms. 3. A food web is made up of two or more food chains which are interconnected to show the relationship between the organisms in an ecosystem.	To study the interdependent relationships among the living organisms in a food web. Activity no.5.3 pg no. 48-49

Teaching Aids:

Multimedia presentation on wetlands, pictures of different animals found in wetlands.

Contents	Learning outcomes	Activities
6.1 The Sun is the main source of energy	Students will be able to: Understand that the Sun is the main source. It gives out heat, light and UV rays which has harmful effects on living things.	
6.2 What is the Ozone layer?	Describe the ozone layer and explain the importance of the ozone layer.	To identify the ozone layer. Activity no. 6.1 pg.no 53-54
6.3 Depletion of the ozone layer	State the causes of the depletion of the ozone layer.	1.Students will be asked to search for the possible causes and effects of the depletion of the ozone layer

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		2.To identify some of the objects that uses CFCs. Activity no. 6.2 pg.no 55-56
6.4 Harmful effects of UV rays	Understand that some of the harmful effects due to excessive exposure to UV rays can cause sunburns, skin and eye diseases.	To design a poster to promote awareness of protecting the ozone layer. Activity no. 6.4 pg no. 60
6.5 Ways to prevent further damage to the ozone layer	They will realize that the effective way to protect the ozone layer is to use products that are CFCs free.	They will ask to collect some labels, wrappers or photographs of the products that are CFCs free. Activity no. 6.2 (5) pg no.57
6.6 What are the other ways to protect the Earth?	We can protect the Earth from further damage by using recycled materials or biodegradable products.	Students will be asked to act a role play on global warming.

Teaching Aids:

Some objects that contain CFCs, some CFCs free objects.

November:

Revision For Mid Term Exams

December:

Mid Term Exams

4. January:

HEAR! HEAR

Chap No.3, Pg No.(27-42)

Contents	Learning outcomes	Activities
3.1 Ears	Students will be able to identify the different types of ears that animals have and compare the parts with their ears.	
3.2 Inside the human ears	They will identify different parts of the human ear and the functions of those parts.	Students will be given the worksheet to label the different parts of the human ear and write their functions.
3.3 Sound travels in a medium and in a direction to reach our ears	Able to explain how sound travels to the ears through a medium and in a direction.	To find out if the length of strings effects the quality of sound received through a tin-can telephone. Activity no. 3.2 pg no.23-24.To investigate if sound travels in a direction. pg no 25-26
3.4 Why do we have two ears?	Understand that we need two ears to hear well and properly.	To find out if we can hear better with both ears. Activity no. 3.3 pg no.27 Students will play blindfold with the co-ordination of PT teacher.

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Teaching Aids:

2 similar tin cans without lids, 2 pieces of strings of different lengths, 2 pieces of short wooden sticks, a piece of colored cloth, a glass bottle, a metal spoon.

5. February:

FORCES AT WORK

Chap No.8, Pg No.(103-120)

Contents	Learning outcomes	Activities
8.1 Force is	<ol style="list-style-type: none"> 1. Students will understand that a force is a push or pull. 2. That forces applied to an object can cause different effects on it. 3. Identify forces in everyday life. 	<ol style="list-style-type: none"> 1. Students will play Tug of War in their PT period with the co-ordination of PT teacher to practice push or pull. 2. To identify push or pull by given different objects. Activity no. 8.1 pg no.73-75
8.2 Strength and force	That a great force is needed to penetrate a strong surface. Similarly a small force is required to penetrate a weak surface.	To compare forces needed to penetrate through objects of different thickness. Activity no. 8.4 pg. no 82-83
8.3 Tension and compression	Students will understand that compression occurs when an object is forced in to a less space or pressed together and tension occurs when an object is stretched by a force.	Students will be asked to bring a piece of sponge and draw lines on the sponge. Then squeezed the sponge with both hands to find compression and tension.
8.4 Simple machines	Simple machines are devices or tools that help us to do work more easily in our daily activities.	They will be asked to remove the nail from a small wooden piece with bare hands and then they will do the same with a hammer.
8.5 Types of simple machines <ul style="list-style-type: none"> • Lever • Wheel and axle • Inclined plane • Pulley • gears 	Different types of simple machines are able to make work easier for us by reducing the force we need to use or by changing the direction of force.	<ol style="list-style-type: none"> 1. Students will be given a nut cracker and walnut to apply force at different positions to find out how to crack nuts with less or more force. 2. They will be asked to turn the screw into the nut directly with hands and then with a screwdriver. 3. Collect pictures of different simple machines they are using everyday and paste them in their scrap books.

Teaching Aids: Different simple machines e.g screwdriver, hammer, nuts, etc

6. March:

SOUNDS

Chap no9,Pg no.(121-134)

LIGHT AND SHADOWS

Chap no10,Pg no.(135-149)

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Contents	Learning outcomes	Activities
9.1 Sound and our ears	Sound is produced when an object vibrates. The sound travels through a medium from the vibrating source to our ears.	To demonstrate that sound is produced by the vibration of an object. Activity no. 9.1 (pg no. 84-86)
9.2 Sound can travel in different mediums.	Sound can travel through solid, liquid and air.	They will ask to make a drum using a paper, rubber bands and empty tin can to find out that sound travels through solids.
9.3 Undesirable sounds	1. Unpleasant sounds that come to our ears are called "noise". It is measured in decibels dB. 2. Constant exposure to loud noise can have harmful effects on our hearing.	1. To identify the sources of noise and devise plans to control noise. (Student will take a round of different places in the school.) Activity no. 92 pg no. 89-90 2. To make a model of stethoscope. Activity no. 9.3 pg .no. 92-93

Teaching Aids:

A tuning fork, a ping pong ball, a dish of water, a ruler. Plastic tubing, balloons, small funnels, aluminium, plastic glass.

Contents	Learning outcomes	Activities
10.1 Light sources	. Light travels from a source.	To study the effects of distance of light source on shadows. Activity no 10.1 pg.no 97-100
10.2. Shadows	. Shadows are formed when an object block out light because light cannot bend around the object. It travels in straight lines.	They will be given different materials and light source to observe different shapes and sizes of the shadows.
10.3. Transmission of light through different materials.	Shadows of different shapes and sizes can be formed from the same object. The type of light source will effect the sharpness of the shadows formed.	To make a sundial. To investigate which type of light source forms the sharpest shadow. Activity no. 10.3 pg no. 104

Teaching Aids:

A torch, a wooden ruler, a screen, different mathematical shapes etc

April:

Revision for final exams

May:

Final Examinations

Teaching Support:

Documentaries, multimedia, presentations, slides, lab will be used.

Resource List:

My Pals are here, oxford primary science, science success.

Assessment method:

We will assess students by class test, work sheets, class presentation and different group activities.