

YEARLY PLAN

2010

SCIENCE FORM 1

THEME: INTRODUCING SCIENCE

Learning Area: 1.0 Introduction to Science

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
2 11.01 – 15.01	Introducing the content of Science Curriculum for Form 1.				
3 18.01 – 22.01	1.1 Understanding that science is part of everyday life.	Describe examples of natural phenomena that students see around them: a) Growth of human from a baby to an adult. b) Fall of a ball to the ground. c) Melting of ice. Discuss the uses and benefits of science in everyday life. Attend talks on careers in science.	A student is able to: <ul style="list-style-type: none"> • List what he sees around him that is related to science. • Explain the importance of science in everyday life. • Name some careers in science such as: a) Science teachers. b) Doctors. c) Engineers. 	During the learning activities, bring out the science concepts	benefit – faedah careers – kerjaya discuss – bincangkan educators – pendidik importance – kepentingan professionals – profesional related – berkaitan role play – main peranan talks – ceramah natural phenomena - fenomena alam.
4 25.01 – 29.01	1.2 Understanding the steps in scientific investigation.	Carry out a scientific investigation/experiment, e.g. "To find out what affect the number of times the pendulum swings back and forth (oscillations) during the given time" The student will be: a) Determining 'what I want to find out' (identifying the problem). b) Making a smart guess (forming a hypothesis). c) planning how to test the hypothesis (planning the experiment): <ul style="list-style-type: none"> • Identify the varieties. • Determine the apparatus and materials required. 	A student is able to: <ul style="list-style-type: none"> • State the steps in scientific investigation/experiment. • Carry out is scientific investigation. 	Scientific investigation involves the use of science process skills.	affect – mempengaruhi conditions – keadaan determine - menentukan emphasizes – menekankan hypothesis – hipotesis identify – mengenal pasti investigation – penyiasatan involves – melibatkan measure – ukur observe – memerhati oscillation - ayunan lengkap swings back and forth – berayun pergi dan balik

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		<ul style="list-style-type: none"> Determine the procedure to carry out the experiment, method to collect and analyze data. d) Carrying out the experiment e) Writing down what has been observed (collecting data). f) Finding the meaning for what has been observed (analyzing and interpreting data). g) Deciding whether the hypothesis is true (making conclusions). h) Writing a report on the investigation (reporting). Student can be asked to be report on their investigations to the class. Students emphasize the steps they have taken: what they have changed, what they have kept the same and what they have measured.		This helps the teacher to identify the student's capability to carry out a scientific investigation.	pendulum – bandul variable – pemboleh ubah
5 01.02 – 05.02	1.3 Knowing physical quantities and their units.	Identify physical quantities (length, mass, time, temperature and electric current, their values and units found on product descriptions.	A student is able to: <ul style="list-style-type: none"> State physical quantities: length, mass, time, temperature and electrical current. State the S.I units and the corresponding symbols for these physical quantities. 	Product descriptions can be found on labels, boxes of electrical appliances, food packets, etc. S.I is an abbreviation for the French term <i>System International of Unites</i> which means international system for unit i.e. meter, kilogram, second, etc.	abbreviation – singkatan appropriate – sesuai corresponding symbols – simbol berpadanan electric current – arus elektrik length – panjang mass – jisim measurement – ukuran physical quantities – kuantiti fizikal prefixes - imbuhan symbol –simbol value – nilai
		Find word with the prefixes used in measurements	<ul style="list-style-type: none"> State the symbols and values of 		

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		such as kilo-, centi-, and mili-. Find the symbols used for these units of measurement. Find the value of these prefixes.	prefixes for units of length and mass: mili-, centi-, and kilo-. • identify and use appropriate prefixes in the measurement of length and mass		
6 08.02 – 12.02	1.4 Understanding the use of measuring tools.	Measure the length of straight lines, curves and the diameter of objects using rulers, thread and calipers. Estimate the area of regular and irregular shapes using graph paper. Measure volume of liquids using measuring cylinder, pipette and burette. Determine the volume of regular Dan irregular solids using the water displacement method. Measure the body temperature and temperature of water. Discuss the right choice of tool in making measurements. Apply the above measurement skills in the context of experiment	A student is able to: • Choose the right tool and measure length in the context of an experiment. • Estimate area of regular and irregular shapes using graph paper in the context of an experiment. • Choose the right tool and measure the volume the liquid in the context of an experiment. • Choose the right tool and measure the body temperature and temperature of a liquid. • Determine the volume of solids using water displacement method in the context of an experiment.	Make sure students take measurements correctly and accurately.	calipers – angkup curve – garis lengkung displacement – sesaran estimate – mengaanggarkan irregular – tidak sekata regular – sekata volume – isipadu
7 15.02 – 19.02	1.5 Understanding the concept of mass.	Finds the weight of different objects using a spring balance. Discuss weight as the pull of the earth (gravitational force) on an object. Discuss mass as quantity of matter. Find the mass of different objects using	A student is able to: • Determine the weight of an object. • Explain the concept of weight. • Explain the concept of mass. • Determine the mass of an object. • Explain the difference between mass and weight. • Apply the use of spring and beam/lever balance in the context	Unit for weight ; Newton Unit for mass ; kilogram Carry out an experiment where students have to apply the	beam balance – neraca slot determine – menentukan difference – perbezaan force – daya lever balance –neraca tuas mass – jisim pull – tarikan spring balance – neraca spring weight – berat

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		<p>beam/lever balance or lever balance.</p> <p>Discuss the difference between mass and weight.</p> <p>Apply the skills of using the spring balance and beam/lever balance in the context of an experiment.</p>	of an experiment.	measurement skills of mass or weight.	
8 22.02 – 26.02	1.6 Realizing the importance of standard units in everyday life.	<p>Discuss the various units of measurements, e.g. units for length (feet, yard, chain, mile, meter, and kilometer), units for weight (pound, ounce, kati, tahl, gram, and kilogram).</p> <p>Act out a scene to show the problem caused by not using standard units e.g. buying things at the market.</p> <p>Discuss the advantages and disadvantages of using different units of measurement.</p>	<p>A student is able to:</p> <ul style="list-style-type: none"> Give examples of problems that may arise if standard units are not used. 	Get assistance from English Language teachers in preparing the script for the act.	<p>act out – lakonkan</p> <p>advantages – kebaikan</p> <p>arise – timbul</p> <p>disadvantages – keburukan</p> <p>realizing – menyedari</p> <p>standard – piawai</p> <p>scene – babak</p> <p>various – pelbagai</p>

THEME: MAN AND THE VARIETY OF LIVING THINGS

Learning area: 2.0 Cell as a unit of life

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
9 01.03 – 05.03	2.1 Understanding cells.	<p>Gather information on living organisms and identify the smallest living unit that makes up the organism.</p> <p>Prepare slides of cheek cells and onion cells.</p> <p>Study the general structure of cheek cells and onion cells under a microscope, using the correct procedure.</p>	<p>A student is able to:</p> <ul style="list-style-type: none"> Identify that cell is the basic unit of living things. Prepare slides following the proper procedures. Use a microscope properly. Identify the general structure of an animal cell and a plant cell. Label the general structure of an animal and a plant cell. 	<p>General structure of a cell includes cell wall, cell membrane, protoplasm (cytoplasm and nucleus), chloroplast and vacuole.</p> <p>The usage and handling of a</p>	<p>Animal cell – sel haiwan</p> <p>Cell wall – dinding sel</p> <p>Cheek cell – sel pipi</p> <p>Chloroplast – kloroplas</p> <p>Cytoplasm – sitoplasma</p> <p>Handling – mengendalikn</p> <p>General – umum</p> <p>Microscope – mikroskop</p> <p>Nucleus – nukleus</p> <p>Onion – bawang merah</p>

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		<p>Draw and label the different structure of an animal cell and a plant cell.</p> <p>Compare an animal cell and a plant cell.</p> <p>Gather information on cell structure and discuss their functions.</p>	<ul style="list-style-type: none"> State the function of each cell structure. State the similarities and differences between the two cells. 	<p>microscope is introduced here.</p> <p>Remind pupils of the safety precautions to be taken when preparing samples of cheek cells.</p>	<p>Plant cell – sel tumbuhan</p> <p>Precautions – langkah berjaga</p> <p>Prepare – sediakan</p> <p>Protoplasm – protoplasma</p> <p>Remind – ingatkan</p> <p>Sample – sampel</p> <p>Slide – slaid</p> <p>Structure – struktur</p> <p>Vacuole - vakuol</p>
10 08.03 – 12.03	ASSESSMENT 1				
11 22.03 – 26.03	2.2 Understanding unicellular organism and multi cellular organism	<p>Gather information about unicellular organisms and multi cellular organisms.</p> <p>Provide students with picture cells, name cards, unicellular and multi cellular cards.</p> <p>Students use reference materials and/or information to match the three cards for each organism.</p> <p>Observe examples of unicellular organism and multi cellular organism under a microscope.</p>			
12 29.03 – 02.04	2.3 Understanding that cells form tissues, organs and systems in the human body.	<p>Gather information and discuss the following:</p> <p>a) types of human cells</p> <p>b) functions of different types of human cells</p> <p>Use a graphic organizer (e.g.: ladder of hierarchy) to show the organization of cells: Cell → tissue → organ → system → organism</p>	<p>A student is able to:</p> <ul style="list-style-type: none"> Name the different types of human cells. State the function of different types of human cells. Arrange sequentially cell organization from simple to complex using the terms cell, tissue, organ, system and organism. 		<p>Arrange sequentially – susun mengikut urutan</p> <p>Cell – sel</p> <p>Function – fungsi</p> <p>Human being – manusia</p> <p>Ladder – tangga</p> <p>Organ – organ</p> <p>Organization of cells – organisasi sel</p> <p>System – sistem</p> <p>Simple – mudah</p> <p>Tissues – tisu</p>

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
	2.4 Realizing that humans are complex organism.	Discuss why human beings are complex organism.	A student is able to: <ul style="list-style-type: none"> Explain why human beings are complex organism. 		Complex organism – organisasi kompleks

THEME: MATTER IN NATURE

Learning area: 3.0 Matter

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
13 05.04 – 09.04	3.1 Understanding that matter has mass and occupies space.	Through activities, show that thing such as book, air, water, soil and living thing have mass and occupy space. Discuss what matter is. List examples of matter.	A student is able to: <ul style="list-style-type: none"> State that thing has mass and occupy space. Explain what matter is, and to relate things and matter. Carry out activities to show that air, water, soil and living things have mass and occupy space. 		Air – udara Living things – benda hidup Mass – jisim Matter – jirim Occupies – memenuhi Water – air Soil – tanah
	3.2 Understanding the three state of matter	Gather information and discuss: a) what matter is made up of b) What the three state of matter are. Compare the three states of matter in term of: a) The arrangement of particles. b) The movement of particles. Simulate the arrangement and movement of particles in the three states of matter.	A student is able to: <ul style="list-style-type: none"> State the matter is made up of particles. State the three state of matter. State the arrangement of particles in the three state of matter. State the differences in the movement of particles in the state of matter. 		Particle – zarah Simulate – membuat simulasi Arrangement – susunan Movement – gerakan State of matter – keadaan jirim

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
14 12.04 – 16.04	3.3 Appreciating the use of properties of matter in every day life.	Gather information and discuss: a) Man uses his knowledge of different state of matter to store and transport gases and liquid. b) Man uses the concept of density in making rafts, floats etc. Carry out an activity to explore the applications of the concept of floating and sinking related to density.	A student is able to: • Describe how man uses the different state of matter. • Describe how man applies the concept of density. • Carry out an activity to explore the applications of the concept of floating and sinking related to density.		Application – aplikasi Appreciating – menghargai Applies – mengaplikasi Built – bina Floats – pelampung Gases – gas Properties – sifat Raft – rakit Store - menyimpan

Learning area: 4.0 The variety of Resources of Earth

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
15 19.04 – 23.04	4.1 Knowing the different resources on earth. 4.2 Understanding elements, compounds and mixtures	Gather information about the resources on earth, i.e. water, air, soil, minerals, fossil fuels and living things. Gather information and discuss a) what elements, compounds and mixture are, b) what metals and non-metals are, c) examples of elements, compounds and mixture, metals and non-metals, Compare and contrast the properties of elements, compounds and mixture.	A student is able to: • list the resources on earth needed to sustain life, • List the resources on earth used to everyday life. A student is able to: • state that elements, compounds and mixture are, • give examples of elements, compounds and mixture, • state the differences between elements,		life – kehidupan knowing – mengetahui Resources – sumber to sustain life – menyokong kesinambungan kehidupan appearance – rupa characteristic – ciri classify – mengelaskan compound - sebatian components –

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
			compounds and mixture		komponen conductivity – kekonduksian electricity – elektrik element – unsur harness – kekerasan heat – haba mixture – campuran separate – mengasingkan understanding – memahami
16 26.04 – 30.04		Carry out activities to compare the properties of metals and non-metals in terms of appearance, hardness, conductivity of heat and conductivity of electricity. Carry out activities to separate the component of mixture e.g.: a) mixture of iron things and sulphur powder, b) mixture of sand and salt	A student is able to: <ul style="list-style-type: none"> • carry out activities to compare the properties of different metal and non-metals, • classify elements as metals and non-metals based on their characteristics, • Give examples of metals and non-metals. • Carry out activities to separate the component of a mixture. 		

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
<p>17 03.05 – 07.05</p>	<p>4.3 Appreciating the importance of the variety of earth's resources to man.</p>	<p><i>Discuss the importance of earth's resources (water, air, soil, mineral, fossil fuels and living things) to man.</i></p> <p>Draw a concept map to show the relationship between these resources to the basic needs of life.</p> <p>Gather information on the preservation and conservation of resources on earth.</p> <p>Discuss the importance of the preservation and conservation of resources on earth (e.g.: recycling of paper will help reduce the cutting of trees, conserving clean water prevents water shortage).</p> <p>Carry out a project/campaign/ competition on the reusing and recycling of materials.</p>	<p>A student is able to:</p> <ul style="list-style-type: none"> • explain the importance of variety of earth' resources to man, • state the meaning of the preservation and conservation of resources on earth, • state the importance of the preservation and conservation of resources on earth, • practice reusing and cycling of materials e.g, using old unfinished exercise books as note books and collecting old newspapers for recycling. 		

Learning area: 5.0 The air around us

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
18 10.05 – 14.05	5.1 Understanding what air is made up of (the composition of air).	Gather information on: a) the composition of air, b) the percentage of nitrogen, oxygen and carbon dioxide in air.	A student is able to: • state what air is made up of, • explain why air is a mixture, • state the average percentage of nitrogen, oxygen and carbon dioxide in air,	Air is a mixture of nitrogen, oxygen, carbon dioxide, inert gases, water vapour, microorganism and dust.	carbon dioxide – karbon dioksida composition – komposisi dust – habuk microorganism – mikroorganisma nitrogen – nitrogen oxygen – oksigen inert gas – gas nadir water vapour – wap air
		Carry out activities to show: a) the percentage of oxygen in air, b) that air contains water vapour, microorganism and dust	• carry out activities to show: a) the percentage of oxygen in air, b) that air contains water vapour, microorganism and dust.		
19 17.05 – 21.05	MID YEAR EXAMINATION				
20 24.05 – 28.05	MID YEAR EXAMINATION				
21 31.05 – 04.06	5.2 Understanding the properties of oxygen and carbon dioxide.	Gather information on the properties of oxygen and carbon dioxide.	A student is able to: • List the properties of oxygen and carbon dioxide.		

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		e) the steps needed to control air pollution, Carry out a project to study: a) air pollution in an are around the school, b) The effect of air pollution			pollutant – bahan pencemar sources – sumber
24 05.07 – 09.07	5.5 Realizing the important of keeping the air clean.	Gather information and discuss: a) how life would be without clean air, b) ways to keep the air clean, c) habits that keep the air clean Carry out an activity to show the pollutants in cigarette smoke.	A student is able to: • describe how life would be without clean air, • suggest ways to keep the air clean, • practice habits that keep the air clean		describe – perihalkan habits – amalan suggest – cadangkan

THEME: ENERGY

Learning area: 6.0 Sources of energy

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
25 12.07 – 16.07	6.1 Understanding various forms and sources of energy.	Gather information about the various forms and sources of energy and energy changes. Discuss the sun and the primary source of energy. Carry out activity to see the energy change • from potential to kinetic energy for example a ball rolling down an inclined slope, • from kinetic energy to potential energy for example the winding of a coil in a toy car	A student is able to: • list the various forms of energy, • list the various sources of energy, • identify energy changes, • identify the sun as primary source of energy, • carry out an activity from potential to kinetic energy and vice versa.		coil - spring energy changes – perubahan bentuk tenaga form – bentuk inclines slope – satah condong kinetic energy – tenaga kinetik potential energy – tenaga keupayaan primary source – sumber utama various – pelbagai vice versa – sebaliknya

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
	6.2 Understanding renewable and non-renewable energy.	Gather information and discuss the meaning of renewable and non-renewable energy sources: Carry out a project on: a) renewable and non-renewable energy sources, b) the uses of solar energy, c) the ways to increase efficient use of energy	A student is able to: <ul style="list-style-type: none"> define renewable and non-renewable sources of energy, group the various sources of energy into renewable and non-renewable, explain why we need to conserve energy, suggest ways to use energy efficiently 	Project includes of making scrap books, models and posters.	efficient – cekap conserve – memelihara non-renewable – tidak boleh diperbaharui renewable – boleh diperbaharui solar energy – tenaga suria.
	6.3 Realizing the importance of conserving energy sources.	Discuss the importance of conserving energy sources. Discuss the use and management of energy sources.	A student is able to: <ul style="list-style-type: none"> describe the importance of conserving energy sources, explain the use and management of energy sources.	Discussion can be in the form of forums, brainstorming etc.	management – pengurusan

Learning Area: 7.0 Heat

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
26 19.07 – 23.07	7.1 Understanding heat as a form of energy.	Carry out activities to show: a) the sun give out heat, b) ways to produce heat, c) heat and temperature are not the same (Ask student to predict and observe how the temperatures change, e.g. when they mix volumes of hot and cold water).	A student is able to: <ul style="list-style-type: none"> state that the sun give out heat, state other sources of heat, state that heat is a form of energy, give examples of the uses of heat, 		daily life – kehidupan harian difference – perbezaan examples – contoh gives out – mengeluarkan heat – haba meaning – maksud temperature – suhu

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
		Discuss: a) that heat is a form of energy, b) the uses of heat in our daily life, c) what temperature is d) the difference between temperature and heat	A student is able to: • state the meaning of temperature, • state the difference between heat and temperature		
27 26.07 – 30.07	7.2 Understanding heat flow and its effect.	Carry out activities to know that heat causes solids, liquids and gases to expand and contract.(ball and ring, mercury in thermometer and air in round-boomed flask) Carry out activities to show how heat flows by conduction and radiation.	A student is able to: • state that causes solids, liquids and gases to expand and contract • State that heat flows in three different ways (conduction, convection and radiation). • State that heat flows from hot to cold,	Explain the effect of heating and cooling on the volumes of solids, liquids and gases.	conduction – konduksi contract – menegcut convection – perolakan expand – mengembang flow – mengalir gas – gas insulator – penebat land breeze – bayu darat liquid – cecair natural phenomena – fenomena alam radiation –sinaran sea breeze – bayu laut solid – pepejal
28 02.08 – 06.08	ASSESSMENT 2				
29 09.08 – 13.08		Carry out group activities to discuss: a) natural phenomena such as land breeze, sea breeze and the warming of earth by the sun, b) how building can kept cool, c) what is heat conductor is, d) what is heat insulator is, e) the uses of heat conductors and heat insulators in daily life	A student t is able to: • give examples of heat flow in natural phenomena, • state what is heat conductor is, • state what is heat insulator is, • list uses of heat conductors and heat insulators in daily life, • carry out an experiment to investigate different materials as heat insulator		

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
		Carry out an experiment to investigate different materials as heat insulators.			
30 16.08 – 20.08	7.3 Analyzing the effect of heat on matter.	Carry out activities to show the change in state of matter in physical processes. Discuss: (i) the effects of heat on the state of matter, (ii) examples of daily observation which shows a change in state of matter	A student is able to: <ul style="list-style-type: none"> state the change in state of matter in physical processes, explain that change in state of matter involves absorption and release of heat, give examples of daily observation which show a change in state of matter 	Physical processes include melting, boiling, freezing, evaporation, condensation and sublimation.	Boiling – pendidihan condensation – kondensasi evaporation – penyajatan freezing – pembekuan melting – peleburan process – proses reference – rujukan sublimation – pemejalwapan
31 23.08 – 27.08	7.4 Applying the principles of expansion and contraction of matter.	Discuss the uses of expansion and contraction of matter in the following: a) mercury in a thermometer, b) the bimetallic strip in a fire alarm, c) gaps in railway tracks, d) roller in steel bridges Discuss the use of expansion and contraction of matter to solve simple problems.	A student is able to: <ul style="list-style-type: none"> explain with examples the use of expansion and contraction of matter in daily life, apply principle of expansion and contraction of matter in solving simple problems 		bimetallic strip - jalur dwi logam expansion – Pengembangan contraction – pengecutan fire alarm – penggera kebakaran rollers – penggolek steel bridge – jambatan logam
32 30.08 – 03.09	7.5 Understanding that dark, dull objects absorb and give out heat better.	Carry out experiment to show that: a) dark, dull object heat better than white, shiny object, b) dark, dull object give out heat better than white, shiny object.	A student is able to: <ul style="list-style-type: none"> state that dark, dull object absorb heat better than white, shiny object. State that dark, dull object gives out heat better than white, shiny object. Carry out experiment to investigate heat absorption and heat release. 		

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
	7.6 Appreciating the benefit of heat flow.	Discuss and put practice activities such as opening of windows in the classroom or laboratory to improve air circulation.	A student is able to <ul style="list-style-type: none"> Put into practice the principle of heat flow to provide comfortable living. 		Improve air circulation <ul style="list-style-type: none"> Memperbaiki pengudaraan. Comfortable living – kehidupan yang selesa.
34 13.09 – 17.09	REVISION CHAPTER 1 : INTRODUCTION TO SCIENCE				
35 20.09 – 24.09	REVISION CHAPTER 2 : CELL AS A UNIT OF LIFE				
36 27.09 – 01.10	REVISION CHAPTER 3 : MATTER				
37 04.10 – 08.10	REVISION CHAPTER 4 : THE VARIETY OF RESOURCES ON EARTH				
38 11.10 – 15.10	REVISION CHAPTER 5 : AIR AROUND US				
39 18.10 – 22.10	REVISION CHAPTER 6 : SOURCES OF ENERGY				
40 25.10 – 29.10	REVISION CHAPTER 7 : HEAT				
41 01.11 – 05.11	FINAL YEAR EXAMINATION				

Week	Learning Objective	Suggested Learning Activities	Learning Outcome	Notes	Vocabulary
42 08.11 – 12.11	FINAL YEAR EXAMINATION				
43 15.11 – 19.11	DISCUSING EXAMINATION PAPER				