YEARLY PLAN

2010

SCIENCE FORM 2

PANITIA SAINS SM SAINS KUALA SELANGOR

YEARLY PLAN 2010 FOR FORM 2 SCIENCE

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YEARLY PLAN (2009) FOR FORM 2 SCIENCE

THEME : MANAGEMENT AND CONTINUITY OF LIFE
LEARNING AREA : 1. THE WORLD THROUGH OUR SENSES

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
1 4/1-8/1	1.1 Understanding the sensory organs and their functions.	Carry out activities to make connection between the five senses, the sensory organs and the stimuli.	A student is able to: • identify and relate a sensory organ to its stimulus, • state the pathway from stimulus to response: Stimulus-> Sensory organs -> Nerves-> Brain-> Nerves -> Response	The five sensory organs have been introduced in Primary Science.	brain - *otak* nerve – *saraf* response – *gerakbalas* stimuli - *rangsangan* sensory organ - *organ deria*
	1.2 Understanding the sense of touch.	Discuss what happens in our body after a stimulus is detected. Carry out activities to study the following: a) structure of the human skin involved in stimuli detection, b) sensitivity of the skin at different parts of the body towards stimuli. Discuss the sensitivity of the skin in connection to the following situations: a) receiving an injection, b) using Braille.	A student is able to: • identify the structure of the human skin involved in stimuli detection, • state the function of different receptors - pressure, heat, pain, • draw conclusion on the sensitivity of the skin at different parts of the body towards stimuli.	The structures of the receptors are not required.	cold - *kesejukan* heat - *kepanasan* pain - *kesakitan* pressure - *tekanan* receptor - *hujung saraf* sensitivity - *kepekaan* skin - *kulit* touch – *sentuhan*
2 11/1- 15/1	1.3 Understanding the sense of smell.	Discuss the structure of the nose and the position of the sensory cells using models, charts, computer software and other teaching aids.	A student is able to: • identify the structure of the nose, • identify the position of the sensory cells in the detection of smell.		nose - *hidung* sensory cells - *sel deria*
	1.4 Understanding the sense of taste.	Carry out activities to detect the different areas of the tongue that respond to different tastes. Carry out activities to find how taste is related to smell.	A student is able to: • identify the different areas of the tongue that respond to different taste, • relate the sense of taste with the sense of smell.		bitter - *pahit* salty - *masin* sour - *masam* sweet - *manis*
	1.5 Understanding the sense of hearing.	Observe and identify the structure of the human ear. Discuss the function of each part of the ear.	A student is able to: • identify the structure of the human ear, • explain the function of the different parts of the ear, • describe how we hear.	Teacher is encouraged to use computer simulation to illustrate the hearing mechanism.	taste - *rasa* tongue - *lidah* cochlea - *koklea* ear – *telinga* ear drum - *gegendang telinga*
	1.6 Understanding the sense of sight.	Discuss the hearing mechanism. Examine the cow's eye or model of a human eye.	A student is able to: • identify the structure of the human		

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
		Collect information on structure and function of each part of the eye. Discuss how we see.	eye, • explain the functions of different parts of the eye, • describe how we see.		
	1.7 Understanding light and sight.	Carry out activities to study: a) reflection of light, b) refraction of light between two mediums of different density. Collect information about the types of defects of vision and the contribution/use of technology to rectify them. Carry out activities to show what short sightedness and long sightedness are and how to correct them. Discuss what astigmatism is and the way to correct it. Carry out activities to investigate the following: a) optical illusion, b) blind-spot. Discuss the connection between stereoscopic vision and monocular vision with the survival of animals. Gather information about the device to overcome the limitation of sight.	A student is able to: • describe the properties of light i.e. reflection and refraction, • state the various defects of vision, • explain ways to correct vision defects, • state and give examples of the limitations of sight, • connect stereoscopic and monocular visions with the survival of animals, • identify the appropriate device to overcome the limitations of sight.	Relate the properties of light to natural phenomena and daily usage. Angles of incidence, reflection, refraction and normal are not required. Astigmatism, optical illusions, blind-spot, monocular and stereoscopic visions should be introduced. Microscope, magnifying glass, telescope, binoculars, ultrasound scanning device, X-ray, periscope should be included.	density - *ketumpatan* medium -*bahantara/medium* reflection - *pantulan* refraction - *pembiasan* astigmatism - *astigmatisme* blind spot - *bintik (or titik) buta* long sightedness – *rabun dekat* monocular vision - *penglihatan monokular* optical illusion - *Ilusi optik* periscope - *periskop* short sightedness – *rabun jauh* stereoscopic vision - *penglihatan stereoskopik*
3 18/1- 22/1	1.8 Understanding sound and hearing.	Carry out activities to investigate: a) the production of sound, b) the need of medium for sound to travel, c) the reflection and absorption of sound. Collect information about 1. the defects of hearing, 2. ways to rectify the defects of hearing. Discuss the limitations of hearing and ways of improving it. Carry out activities to investigate the need for stereophonic hearing in determining the direction of sound.	A student is able to: • describe the properties of sound, explain the reflection and absorption of sound, • explain the defects of hearing, explain ways of rectifying the defects in hearing, • state the limitations of hearing, state the device used to overcome the limitations of hearing, • explain stereophonic hearing.	Include devices such as hearing aids and stethoscope.	

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
	1.9 Understanding the stimuli and responses in plants.	Carry out experiments to investigate and identify: a) stimuli detected by plants, b) the parts of the plants sensitive to specific stimulus. Discuss in what ways the response of plants towards stimuli are important for their survival.	A student is able to: • state the stimuli that cause response in plants, • identify the parts of plants sensitive to specific stimulus, • relate the response in plants to their survival.	Responses in plants should include phototropism, geotropism, hydrotropism, nastic movement, tigmotropism.	

LEARNING AREA : 2. NUTRITION

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
4 25/1 - 29/1	2.1 Analysing the classes of food.	Discuss the classes of food i.e. carbohydrate, protein, fats, vitamins, minerals, fibre and water and state their functions. Carry out activities to test for starch (iodine solution), glucose (Benedict solution), protein (Millon's reagent) and fats (alcohol-emulsion test).	A student is able to: • explain through examples the classes of food, • state the function of each class of food, • test for starch, glucose, protein and fats.	Only the major vitamins (A, B, C, D, E and K) and minerals (calcium, sodium, iron, iodine, phosphorus and potassium) are required. Vitamin B need not be classified into BL B_2 and so on. Introduce alcohol-emulsion test for fat.	fats - *lemak* fibre – *pelawas* potassium - *kalium* starch - *kanji* sodium – *natrium*
5 1/2- 5/2	2.2 Evaluating the importance of a balanced diet.	Discuss: a) what a balanced diet is, b) the factors that determine a person's balanced diet: age, size, sex, job, climate, state of health. Collect food wrappers that show calorific value of food and make a list to show the calorific value for each type of food. Discuss to estimate the calories of food taken in a meal. Plan a balanced diet for a day. (breakfast, lunch and dinner)	A student is able to: • state what a balanced diet is, • state the factors that must be considered when planning a balanced diet, • explain how the factors affect a balanced diet, • state the quantity of energy in each gram of carbohydrate, protein and fats, • estimate the calories of food taken in a meal, • plan a balanced diet.	The unit of energy in food can be measured either in joules or calories.	Balanced diet – *gizi seimbang* calorific value - *nilai kalori* climate - *cuaca* food wrapper – *bungkusan makanan*
6 8/2 – 12/2	2.3 Understanding the digestive system in man.	Discuss that digestion is the breakdown of large food molecules into smaller soluble molecules that can be readily absorbed by the body. Identify parts of the digestive system and the flow of food particles in the alimentary canal using model/chart/CD ROM. Discuss the functions of the various organs in the digestive system and the enzymes found.	A student is able to: • explain what digestion is, • identify the parts of the digestive system, • describe the flow of food particles in the alimentary canal, • state the functions of the organs in the digestive system; • describe the process of digestion in the alimentary canal, • list the end products of digestion of carbohydrate, protein and fats.	Enzymes should only include amylase, protease and lipase.	alimentary canal - *salur penghadaman* anus - *dubur* appendix - *umbai usus* bile - *jus hempedu* digestion - *penghadaman* enzyme - *enzim* gall bladder – *pundit hempedu* gut - *salur penghadaman* insoluble - *tidak larut* large intestine - usus*besar* liver - *hati*

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
		Carry out activities to show the action of the enzyme in the saliva on starch.			saliva- *air liur* small intestine - usus *kecil* stomach – perut
7 **15/2 – 19/2**	CUTI SEMPENA TAHUN BARU CINA				
8 22/2 - 26/2	FIRST TERM EXAMINATION / ASSESSMENT 1				
9 1/3 – 5/3	2.4 Understanding the process of absorption of digested food.	Discuss the process of absorption of the products of digestion in the small intestine. Carry out an experiment to show the absorption of glucose through a Visking tube.	A student is able to: • explain the process of absorption of the products of digestion, • make inference about the absorption of glucose through a Visking tube.	The structure of vilus is not required. Need only mention vilus increases the surface area for absorption.	absorption - *penyerapan* analogise - *membuat analogi* blood stream - *aliran darah* diffusion – *resapan*
10 8/3 – 12/3	2.5 Understanding the reabsorption of water and defecation. 2.6 Put into practice the habits of healthy eating.	Discuss the reabsorption of water by the large intestine and the process of defecation. Discuss the importance of good eating habits to avoid constipation. Plan and carry out a healthy eating habit. Discuss the following topics : a) practicing good eating habits i.e. eating nutritious food and eating in moderation, b) the generous distribution of food to the underprivileged / needy, c) cultural practices in dining conforming to sensitivities and religious beliefs.	A student is able to: • state how water is reabsorbed in the large intestine, • explain defecation, • relate the problem of defecation with eating habits. A student is able to: • justify the importance of eating nutritious food, • put in practice good eating habits, • justify the generous distribution of food to the underprivileged / needy, relate the dining culture of different people conforming to sensitivities and religious beliefs.		constipation - *sembelit* defecation - *penyahtinjaan* large intestine - *usus besar* reabsoption - *penyerapan semula* habits - *amalan* needy - *sangat miskin* nutritious food - *makanan berkhasiat* underprivileged - *kurang bemasib baik* religious beliefs -*kepercayaan agama*
15/3 – 19/3	**FIRST TERM SCHOOL HOLIDAY**				

THEME : MAN AND THE VARIETY OF LIVING THINGS

LEARNING AREA : 1. BIODIVERSITY

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
11 22/3 – 26/3	1.1 Understanding variety of living organisms and their classification.	Discuss the diversity in the general characteristics of living organisms. Collect and classify various plants and animals into a system based on common characteristics. - Animal: Invertebrate, vertebrate, mammal, fish, bird, amphibian, reptile. - Plant: Flowering plant, non-flowering plant, monocotyledon, dicotyledon. - Build a concept map on living organisms based on the classification above. Discuss the importance of maintaining the biological diversity as one of the country's natural heritage.	A student is able to: • explain the diversity of living organisms in a habitat, • classify various animals based on common characteristics, • classify various plants based on common characteristics, • explain the importance of biodiversity to the environment.	Basic concept on variety of living organisms has been introduced in primary science. Emphasize only on the classification in the suggested learning activities. Malaysia is one of the twelve mega-biodiversity countries in the world should be highlighted.	amphibian - *amfibia* bird – *burung* dicotyledon - *dikotiledon* diversity - *kepelbagaian* fish - *ikan* flowering plant - *tumbuhan berbunga* invertebrate -*invertebrata* living organism -*organisma hidup* mammal - *mamalia* monocotyledon –*monokotiledon* non-flowering plant -*tumbuhan tidak berbunga* reptile - *reptilia* vertebrates - *vertebrata*

LEARNING AREA : 2. INTERDEPENDENCE AMONG LIVING ORGANISMS AND THE ENVIRONMENT

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
12 29/3 – 2/4	2.1 Analysing the interdependence among living organisms. 2.2 Evaluating the interaction between living organisms.	Carry out a field work to study species, habitat, population, community in an ecosystem. Carry out a discussion on interdependence among living organisms and the environment to create a balanced ecosystem. Collect and interpret data on the types of interactions between living organisms as follows: a) prey-predator, b) symbiosis: commensalism, mutualism and parasitism e.g. remora and shark, algae and fungi, tape worm and man, c) competition. Conduct an activity to show the importance	A student is able to: • state what species, population and community are, • state what habitat and ecosystem are, • identify various habitats in one ecosystem. • • explain through examples the interdependence among living organisms and the environment to create a balanced ecosystem. A student is able to: • list the types of interactions between living organisms, • explain with examples the interactions between living organisms, • justify the importance of interaction between living organisms and the environment, • explain through examples the	Basic concept of habitat has been introduced in primary school. During the field work the concept of ecology will be constructed through contextual learning. Basic concept of prey predator and competition has been taught in primary school. Refer to local issues like the crow problem in Kelang.	community- *komuniti* ecosystem - *ekosistem* environment -*persekitaran* habitat - *habitat* interdependence - *sating bersandaran* predict – *meramal* population - *populasi* species – *sepsis* advantage - *kebaikan* biological control - *kawalan biologi* competition - *persaingan* disadvantage - *keburukan* interaction - *interaksi* parasitism – *parasitisme* pest - *perosak* prey predator -*mangsa pemangsa* regulate - *mengawal* symbiosis – *simbiosis*

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
		of the interaction between organisms and the environment. Discuss the advantages of biological control in regulating the numbers of pests in certain areas.	advantages and disadvantages of biological control in regulating the number of pest in certain areas.		
13 5/4 – 9/4	2.3 Synthesizing food web.	Collect and interpret data on the producer, consumer, decomposer and pyramid number. Construct a food web from a few food chains and identify the producer, consumer and decomposer. Discuss the energy flow in the food web constructed. Conduct a game to show the effects of an increase or decrease in the number of organisms in a pyramid number. Discuss the consequences if a component of living organisms in an ecosystem is missing.	A student is able to: • explain what producers, consumers and decomposers are, • combine a few food chains to construct a food web, • identify the producer, consumer and decomposer in a food web, • construct a pyramid number from a food chain, • relate the food web and the pyramid number to energy flow, • predict the consequences if a certain component of living organisms in the ecosystem is missing.	Food chain has been taught in primary science. Refer to the crown of thorn problem in the coral reef in the marine parks.	Balance in nature-*keseimbangan alam* consumer- *pengguna decomposer-pengurai* food *web-siratan makanan* primary consumer -*pengguna primer* producer- *pengeluar* pyramid number-piramid *nombor* secondary consumer -*pengguna sekunder* tertiary consumer -*pengguna tertier*
14 12/4 - 16/4	2.4 Analysing photosynthesis.	Carry out discussion on what photosynthesis is. Carry out experiments to determine the factors needed for photosynthesis i.e. carbon dioxide, water, light and chlorophyll. Discuss the importance of photosynthesis in maintaining a balanced ecosystem. Discuss the carbon and oxygen cycles.	A student is able to: • state what photosynthesis is, • state the factors required for photosynthesis, • state the products of photosynthesis, • control the variables that are required for photosynthesis, • explain the role of photosynthesis in maintaining a balanced ecosystem.	The carbon and oxygen cycles should be included.	balanced ecosystem - *ekosistem yang seimbang* oxygen cycle - *kitar oksigen* carbon cycle - *kitar karbon* photosynthesis- *fotosintesis*
15 19/4 - 23/4	2.5 Evaluating the importance of conservation and preservation of living organisms.	Collect and interpret data on the conservation and preservation of living organisms. Carry out a field work in a natural forest reserve (wetlands, highland forest or tropical rain forest) or an animal sanctuary to study the conservation and preservation of living organisms. Carry out a discussion on how the improvement in science and technology helps in the conservation and preservation of living organisms. Run a campaign to stress on the importance of conservation and preservation / Carry out a role play involving the parties concerned in solving problems related to the conservation	A student is able to: • explain what conservation and preservation are, • explain the steps taken to preserve and conserve living organisms, • justify the importance of conservation and preservation of living organisms, • Support activities organised by various parties to preserve and conserve the living organisms.	The role of man in conservation and preservation has been highlighted in primary school. Forest is also home to some indigenous people should be included.	conservation-pemuliharaan reserve forest – *hutan simpan* highland forest – *hutan tanah tinggi* indigenous people – *orang asli* preservation-pemeliharaan sanctuary-*santuari* tropical rainforest - *hutan hujan tropika* wetlands - *tanah bencah / lembap*

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
		and preservation of living organisms.			
	2.6 Evaluating the role of man in maintaining the balance in nature.	Carry out a brainstorming session to discuss the environmental issues affecting the balance in nature and how to solve it. Carry out a discussion to justify that man needs stable and productive ecosystem to ascertain a harmonious life.	A student is able to: • explain the effects of human activities on the balance in nature, • describe how man solves problems related to environment, • justify that human need a stable, productive and balanced ecosystem.	Examples of environmental issues: Global climate change, habitat destruction, species extinction, air, soil and water pollution, loss of wetlands, solid waste management, deforestation, land overuse, over fishing, toxin in the environment, (release of excessive chemicals into our environment - includes pesticides, fertilizers and pollutants).	acid rain - *hujan asid* brainstorming - *sumbangsaran* climate change -*perubahan iklim* deforestation -*penebangan hutan* excessive – berlebihan land overuse -*penggunaan tanah yang tidak terkawal* green house effect - *kesan rumah hijau* over fishing -*penangkapan ikan tidak terkawal* pollution - *pencemaran* solid waste management -*pengurusan sisa pepejal* pesticides - *pestisid* species extinction -*kepupusan spesis* toxin - *toksin*

THEME : MATTER IN NATURE
LEARNING AREA : 1.0 WATER AND SOLUTION

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
16 26/4 - 30/4	1.1 Analysing the physical characteristics of water.	Carry out activities to determine the following: • the freezing point of water, • the boiling point of water. Carry out an activity to observe the effects of impurities on the physical characteristics of water.	A student is able to: • state the meaning of the freezing point of water, • state the meaning of the boiling point of water, • describe the physical characteristics of water, • explain through examples the . effects of impurities on the physical characteristics of water.	The Kinetic Theory should be introduced. Relate the freezing and boiling point of water to the Kinetic Theory. The ionic theory on electrolysis is not needed.	boiling point - *takat didih* freezing point - *takat beku* impurities - *bendasing* inference - *inferens*
	1.2 Analysing the composition of water.	Carry out an electrolysis to determine the ratio of hydrogen to oxygen in a molecule of water.	A student is able to: • determine the composition of water, • test the presence of hydrogen and oxygen.	Understanding that hydrogen is discharged at the cathode and oxygen at the anode is adequate. The ratio of gases is required.	physical characteristics -*ciri-ciri fizikal* anode - *anod* cathode - *katod* composition – *komposisi* ionic theory - *teori ionik* electrolysis - *elektrolisis* discharge - *terhasil*
17 3/5- 7/5	1.3 Analysing the process of evaporation of water.	Carry out experiments to study the factors affecting the rate of evaporation of water i.e. humidity, the temperature of the surrounding, surface area and the movement of air. Discuss the factors affecting the rate of evaporation in relation to the Kinetic Theory.	A student is able to: • explain what evaporation is, • explain through examples the factors that affect the rate of evaporation of water with reference to the Kinetic Theory, • compare and contrast between evaporation and boiling, • describe the application of the		agricultural product - *hasil pertanian* evaporation - *penyejatan* evaporation of water -*penyejatan air* humidity - *kelembapan* movement of air - *pergerakan udara* preservation - *pengawetan* processing of food -*pemprosesan makanan* rate of evaporation - *kadar penyejatan* surface area - *luas permukaan*

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
		Discuss the similarities and differences between evaporation and boiling. Gather information on evaporation process and its application in daily life.i.e. drying of clothes, preservation of agricultural products and processing of food.	evaporation of water in daily life.		temperature of the surrounding - *suhu sekeliling*
18 10/5 - 14/5	1.4 Analysing solution and solubility.	Discuss the differences between solute, solvent and solution. Carry out activities to prepare a dilute solution, a concentrated solution and a saturated solution. Discuss the similarities and differences between dilute solution, concentrated solution and saturated solution. Carry out activities to illustrate the differences between a solution and a suspension. Carry out experiments to determine the factors affecting the solubility of a solute. • Nature of solvent, • Nature of solute, • Temperature.	A student is able to: • explain what solute, solvent and solution are, • contrast and compare between dilute solution, concentrated and saturated solution, • explain what suspension is, • explain what solubility is, • explain the factors affecting the solubility of solutes in water, • explain the importance of water as a universal solvent in life, • give examples on the uses of organic solvents in our everyday life.	Introduce insoluble sediments are known as residue.	concentrated solution - *larutan pekat* dilute solution - *larutan cair* nature of solute - *jenis zat pelarut* nature of solvent - *jenis pelarut* organic solvent - *pelarut organik* residue - *baki/sisa* suspension - *bahan terampai* saturated solution - *larutan tepu* sediment - *bahan mendapan* solubility - *kelarutan* solute -*zat pelarut* solution - *larutan* solvent - *pelarut* universal solvent - *pelarut universal* volume of solvent - *isipadu pelarut*
19 17/5 - 21/5	1.5 Analysing acid and alkali.	Carry out activities to study: • the properties of acid in terms of pH value, taste, corrosive nature, effect on litmus paper, reaction with metals such as magnesium and zinc, • the characteristics of alkali in terms of pH value, taste, corrosive nature, effect on litmus paper, • carry out a discussion to define acid and alkali operationally.	A students are able to: • identify the properties of acid, identify the properties of alkali, • state that acid and alkali only show their properties in the presence of water, • explain through examples the definition of acid and alkali,	**<u>Caution:</u>** Chemicals in the laboratory should not be tasted. Use only dilute acid and dilute alkali. Do not use active metals such as Potassium and Sodium in the reaction with acid.	active metal - *logam aktif* alkaline substance -*bahan beralkali* concentration - *kepekatan* concentrated acid - *asid pekat* concentrated alkali - *alkali pekat* corrosive - *mengkakis* dilute acid - *asid cair* dilute alkali - *alkali cair* equation in words - *persamaan perkataan* hydrochloric acid - *asid hidroklorik* litmus paper – *kertas litmus* metal - *logam*

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
					neutralization - *peneutralan* operational definition - *definisi secara operas!*
20 24/5 - 28/5 21 31/5 – 4/6	**The Middle Year Examination**				
7/6 - 18/6	**MIDDLE YEAR SCHOOL HOLIDAY**				
22 21/6- 25/6		Carry out activities to determine the acidic and alkaline substances in daily life. Gather information on the usage of acid and alkali in everyday life such as in agriculture and industry. Discuss on the meaning of neutralisation. Carry out an activity to show neutralisation using the hydrochloric acid and sodium hydroxide of the same concentration. Discuss the application of neutralisation in daily life e.g. using shampoo and conditioner and, insect bite.	A students are able to: • identify the substances which are acidic or alkaline in everyday life, • state the uses of acid and alkali in daily life, • explain the meaning of neutralisation, • write an equation in words to describe the neutralisation process, • explain through examples the uses of neutralisation in daily life.	**Caution:** Chemicals in the laboratory should not be tasted. Use only dilute acid and dilute alkali. Do not use active metals such as Potassium and Sodium in the reaction with acid.	potassium - *kalium* sodium - *natrium* sodium hydroxide - *natrium hidroksida*

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
23 28/6 – 2/7	1.6 Analysing the methods of water purification. 1.7 Analysing the water supply system.	Make a visit to a water purification site. Brainstorming on the following: • natural resources of water, • the reasons for water purification. Discuss the various types of water purification such as filtration, boiling, chlorination and distillation. Carry out activities to study the various types of water purification such as filtration, boiling and distillation. Pupils present their findings to discuss the strengths and weaknesses of the various types of water purification. Make a visit to a water processing plant to study the water supply system and stages involved in water purification. Discuss the ways to save water. Do a project on how much water the average household uses.	A student is able to: • list the natural sources of water, • state the reasons for water purification, • describe the various types of water purification, • compare the strengths and weaknesses of the various types of water purification. A student is able to: • describe how the water supply system works, • explain ways to save water.	The latest developments in water purification e.g. ultra-violet treatment can be discussed.	boiling - *pendidihan* chlorination - *pengklorinan* distillation - *penyulingan* filtration - *penurasan* natural resources -*sumber semula jadi* water purification site - *loji pembersihan air* domestic uses -*penggunaan domestik* usage of water –*penggunaan air* water supply system -*sistem bekalan air*
24 5/7-9/7	1.8 Understanding the preservation of water quality.	Collect and interpret data on types of water pollutants which include: • industrial waste such as chemical and radioactive residues, • domestic waste such as garbage and sewage, • chemicals from the agricultural activities such as fertilisers and pesticides, • siltation caused by constructions and deforestation, • accidental spillage from tankers. Conduct discussion on the effect of water pollution on living things. Generate ideas on ways to control water pollution. Discuss ways to conserve and preserve water and its quality. Run a campaign on 'Love Our Rivers'.	A student is able to: • give examples of water pollutants, • explain the effect of water pollution on living things, • explain ways to control water pollution, • explain ways to preserve water and its quality.		construction - *pembinaan* deforestation - *penebangan hutan* domestic waste - *bahan buangan domestik* fertiliser - *baja* garbage - *sampah-sarap* industrial waste - *bahan buangan industri* pesticide - *pestisid* preservation - *pemeliharaan* radioactive residue - *sisa radioaktif* siltation - *pengelodakan* sewage - *sisa /bahan kumbahan* water pollutant - *bahan cemar air*

LEARNING AREA: 2. AIR PRESSURE

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
25 12/7	2.1 Understanding air pressure.	Carry out an activity to discuss the kinetic theory of gases. Carry out an activity to show that air exerts pressure.	A student is able to: • explain the existence of air pressure with reference to the Kinetic Theory, • explain the factors affecting air		air pressure - *tekanan udara* appliances -*peralatan* existence - *kewujudan* temperature - *suhu*

- 16/7		Carry out activities to show the factors affecting air pressure, i.e. volume and temperature.	pressure.		volume – *isipadu*
26 19/7 – 23/7	2.2 Applying the principle of air pressure in daily life.	Collect and interpret data on appliances that use the principle of air pressure. Gather information and discuss the application of air pressure in syringe, siphon, spraying pump and drinking straw. Discuss ways of using the principle of air pressure to solve daily problems such as blockage in sinks and pouring condensed milk from a can. Gather information on how a gas tank containing gas under high pressure works. Discuss the safety precautions taken when using gas under high pressure.	A student is able to: • explain with examples things that use the principle of air pressure, • generate ideas to solve problems using the principle of air pressure, • relate the safety measures taken when using gas under high pressure.	**<u>Caution:</u>** Do not place tank containing gas under high pressure near heat.	syringe - *picagari* siphon - *sifon* spray - *penyembur* drinking straw - *penyedut minuman* blockage- *tersumbat* gas under high pressure - *gas di bawah tekanan tinggi* safety measures - *langkah keselamatan*

THEME : FORCE AND MOTION
LEARNING AREA : 1. DYNAMICS

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
27 26/7 - 31/7	1.1 Understanding force.	Carry out activities to show pushing and pulling are forces. Carry out activities to show the effects of force (changes in shape, position, speed and direction). Carry out activities to show different types of forces (frictional, gravitational, electrostatic and magnetic force).	A student is able to: • state that a force is a push or a pull, • explain the effects of forces, • explain the various types of forces.		electrostatic force - *daya elektrostatik* frictional force – *daya geseran* gravitational force – *daya graviti* magnetic force – *daya magnetik* speed – *kelajuan*
	1.2 Understanding the measurement of force.	Discuss the unit of force and the principle of a spring balance. Carry out activity to measure the magnitude of force	A student is able to: • state the unit of force, • explain how a spring balance works, • measure the magnitude of force.		magnitude - *magnitud* spring balance - *neraca spring*
28 2/8-6/8	1.3 Application of frictional force.	Discuss with examples to show the existence of frictional force. Carry out activities to identify the direction of frictional force and measure the magnitude of the force. Carry out an experiment to show how different types of surfaces affect the magnitude of frictional force.	A student is able to: • explain with example the existence of frictional force, • state the direction and the magnitude of frictional force, • carry out an experiment to show how different types of surfaces affect frictional force,	Ignore static frictional force.	existence – *kewujudan* surface – *permukaan*

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
		Gather information and discuss the advantages and disadvantages of friction. Carry out activities on ways to a) increase friction, b) reduce friction. Discuss the application of increasing and decreasing friction in our daily life	• explain the advantages and disadvantages of friction, • explain ways to increase friction, explain ways to reduce friction, • explain with examples the application of friction in daily life.		
29 9/8– 13/8	1.4 Application of work. 1.5 Application of power. 1.6 Analysing the importance of force in life.	Discuss with examples to show work is done when an object is moved by a force. Carry out activities to determine the work done by using: Work (J) = Force (N) X Distance (m) Carry out activities to determine power by using: Power (W) = Work (J) / Time (s) Create an activity e.g. drawing a poster, sketching or acting to show how life would be without force.	A student is able to: • explain with examples how work is done, • state the unit of work, • calculate the work done. A student is able to: • state the meaning of power, • state the unit of power, calculate power on the work done. A student is able to: • describe how life will be if force does not exist.		distance – *jarak* work – *kerja* power – *kuasa* sketch – *lakaran*

LEARNING AREA : 2. SUPPORT AND MOVEMENT

30 16/8– 20/8	SECOND TERM EXAMINATION / ASSESSMENT 2				
31 23/8- 27/8	2.1 Understanding the support system in animals.	Gather information and discuss thevarious support system in (a) land and aquatic vertebrate. (b) land and aquatic invertebrate. Carry out discussion on the following: a) similarities and differences between support system in land and aquatic vertebrate b) similarities and differences between support system in land and aquatic invertebrate	• Explain the support system in vertebrate and invertebrate. • Compare and contrast the support system between land and aquatic vertebrate. • Compare and contrast the support system in land and aquatic invertebrate,	For invertebrates introduce exoskeleton, endoskeleton, and hydrostatic skleleton.	

32 30/8– 3/9	2.2 Understanding the support system in plant. 2.3 Appreciating the support system in living things.	Carry out field work to study various support systems in plant. Carry out activities to classify plants based on their support system. Discuss issues e.g a) inability of whales yo move back to see after being washed in ashore, b) a crippled person using crutches for support.	A student is able to: • Explain the various system in woody and non-woody plants. • Classify plants based on their support system. A student is able to: • justify the important of the support system to living things.	Features that help non-woody plants include tendrils, thorn, air sacs in aquatic plants.	Beached whale – paus yang terdampardi pantai Crippled – tempang Crutches – tongkak ketiak
6/9– 10/9	**SECOND TERM SCHOOL HOLIDAY**				

THEME : TECHNOLOGICAL AND INDUSTRIAL DEVELOPMENT IN SOCIETY
LEARNING AREA : 1. STABILITY

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
33 13/9- 17/9	1.1 Understanding that the center of gravity affect stability.	Carry out activities to find the point of equilibrium in regular and irregular shapes. Carry out experiment to find out how the center of gravity affects the stability of an object by manipulating the a) height b) base area Discuss the relationship between the center of gravity and stability.	A student is able to: • determine the point of equilibrium in regular and irregular shapes. • Relate the point of equilibrium as the center of gravity of objects, • Relate the center of gravity to the stability of objects.		
34 20/9- 24/9	1.2 Appreciating the importance of stability.	Carry out a brainstorming session on ways to improve stability. Carry out activities like doing projects or playing games to builds models by applying the concept of stability.	A student is able to: • Suggest ways to improve the stability of objects around them. • Explains with examples the applications of stability in life.		

LEARNING AREA : 2. SIMPLE MACHINE

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
35 27/9- 1/10	2.1 Anylising levers.	Discuss how a small effort can oversome a large load with the use of a lever. Make an observation on devices the use that uses the principles of levers. Identify the load, force and fulcrum, and then classify the system into first, second and third class levers. Discuss how human apply the principles of levers to help them overcome large load.	A student is able to: • List thins around them that use the principle of the lever • State the lever can do, • Identify load, force and fulcrumin the lever, • Classify levera,	When you open the door to use a wrench to loosen a nut, we are applying a force that causes the turning effect to accomplish the desired task. The turning effect is called the moment of force.	*Perpendicular distance – jarak tegak.*

Week	Learning Objectives	Suggested Learning Activities	Learning Outcomes	Notes	Vocabulary
36 4/10- 8/10		Discuss that the moment of force = force X perpendicular distance from the pivot to force. Carry out an activity to show the relationship between and the product of force and distance. Solving problems related to levers using the following formulae: Load (N) X distance of the load from fulcrum (m) = Force X distance of force from the fulcrum (m).	• Explain what is meant by the moment of force, • Solves problems related to levers.		
37 11/10– 15/10	2.2 Appriciating the innovative efforts in the design of machine to simplify work.	Carry out a project to build a device using the principle of a lever.	A student is able to: • Design or improve a device that uses the principle of a lever.		
38 18/10– 22/10	REVISION EXERCISES CLINIC				
39 25/10– 29/10	REVISION EXERCISES CLINIC / FINAL YEAR EXAMINATION				
40 1/11 – 5/11	FINAL YEAR EXAMINATION				
41 8/11– 12/11	**DISCUSSION FORM THREE**				
42 15/11 - 19/11	**DISCUSSION FORM THREE**				
20/11 – 4/1/11	**FINAL YEAR SCHOOL HOLIDAY**				