**SIR APOLLO KAGGWA SCHOOLS**

**P.3 LITERACY I LESSON NOTES 2019**

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| Theme  Sub-theme  Content | **Our environment in Sub-County/ Division**  **Soil**  Reading descriptions of words   * Air - living organisms - rot/decay * Water - arrangement - vertical * humus (dead plants and animals) - mineral salt * particles - profile - layer * rocks - fastest - moisture * clay - slowly - steam * sand - moderate - mixture * Loam - drain - vapour * Decay - erosion * Weathering - earthquake * Temperature - wind * Floods - earthworm * Aerate - deforestation * Afforestation - forest * Mulching - slope * Terraces - grazing * Soil - dissolve   **Soil** : is the top layer on earth or Soil is a medium on which plants grow and animals live.  Composition / components / constituents of soil.  Soil is made up of Air , water , humus , particles of rocks, mineral salts and living organisms.  **Uses of Air in the soil**  Oxygen supports the life of living organism in the soil.  **Uses of water in the soil.**   * Helps plants to grow * Keeps the soil moist   How can we keep water in the soil  By mulching  3. Living organisms  Examples of living organisms : Earth worm termites , rates , red ants, snakes etc.  Importance of living organism in the soil  Helps in aeration of the soil.  Ways of keeping soil fertile   * By mulching * By adding manure * By bush farrowing   Experiments on what makes up soil  1. Soil contains air  Container    Water  Bubbles  Dry soil  Bubbles show the air coming from the soil  2. Soil contains water  Cover  Water droplets  Steam/ vapor  **HEAT** Soil  Humus : Humus is formed when dead plants and animals decay  3. Soil contains humus (dead plants and animals)    Humus floating on water  Mixture of water and soil  Humus floats on water  NB: Humus makes the soil fertile.  **Uses of soil**  To man  Man uses soil in many ways such as growing crops, building houses, painting, making pots, making bricks, for sale, constructing roads, making glass.  To plants  Plants get water and mineral salts from soil using roots, soil holds plants upright.  To other animals  Some animals live in soil like; rats, snakes, snails, mole, rats , squirrels, termites etc. Animals also get warmth and protection from the soil. The above animals can live in soil because there is air for breathing.  Soil texture: Is the roughness or smoothness of soil particles or it refers to different sizes of soil particles.  **Soil structure**  Is the arrangement of particles in soil.  **Types of soil and their texture**  Soil is made up of sand, clay and loam soil.   |  |  | | --- | --- | | Type | Texture | | Sand soil | * Its rough * Has the biggest particles | | Clay soil | * Its smooth * Has the smallest particles | | Loam soil | * It’s a mixture of sand, clay and humus * It has moderate texture |   **Soil particles**  Clay soil loam soil sand soil  **Characteristics of clay soil**   * It has the smallest particles. * Its sticky * Its particles are closely packed * It has little humus * It drains water slowly   NB:  Clay soil is commonly used for modeling.  **Characteristics of sand soil**   * It has the biggest particles * It has rough particles * Particles are loosely packed (far apart) * It has big/large air spaces * It drains water quickly   NB: Sand soil is used to make glasses  **Characteristics of loam soil**   * It’s a mixture of sand and clay * It has a lot of humus * Its dark in colour   NB: Loam soil is good for crop growing because  i) It is well Aerated  ii) It contains a lot of humus  **Movement of water through the soil**  Soil  Cotton  Water  A B C container  A -Clay soil B - loam soil C - Sand soil  **Observations and deductions**   1. Clay soil allows little water to go through. Why?   It has the smallest air spaces or it has the finest soil particles.   1. Sand soil allows water to pass through fastest. Why?   It has the largest air spaces or it has the biggest soil particles.   1. Loam soil allows water to go through moderately.   **Soil formation**  Soil formation is the process by which soil is formed.  Soil is formed in two ways.   * Decomposition * Weathering   **Decomposition**: is when organic matter rot or decay. NB Bacteria help in decomposition (decaying)  Weathering: is the process by which rocks break down into small particles to form soil  **Agents of weathering**   * Running water * Animals * Strong wind * Earth quake * Plants   **Soil profile** : Is the vertical arrangement of soil layers or is the arrangement of soil layers from top to bottom.  Top soil    Sub soil  Parent rocks (gravel and stones)  **Uses of soil (practical work)**   * Making pots, cups, plates, glasses, bricks (clay soil) * For building – sand soil * For growing crops (loam)   **NATURAL CHANGES IN OUR SURROUNDING**  These are changes made by God (God made changes)  **Examples of natural changes in the animals**  Growth, death, reproducing , sweating , digestion , excretion  **Natural changes in plants**   * Growth of plants * Germination * Drying plants / wilting * Ripening of fruits   Germination in seeds  Germination : Is the growing of a seed into a seedling.  **Natural changes around us**  Floods, drought, earthquakes, land slides, storms, lightning, thunder, hail storms, soil erosion, weather changes, seasonal changes rusting  **More about changes around us**  Floods – Are heavy rains overflowing in a place.  Drought – Is a long period of too much sunshine.  Hail storm – Are small droplets of ice falling from the sky.  Earth quake – a sudden violent movement of the earth’s surface.  Landslides – Sliding down of a heavy part of the earth or rocks from a side of a hill or mountain.  Soil erosion – Is the removal of top soil by running water, strong wind, animals, man (agents)  **Changes in the sky**   * Formation of rain * Movement of clouds * Rising and setting of the sun * Changes in the moon shapes * Changes in weather   **Effects of changes**   * Floods, earthquakes and landslides cause destruction of homes and property, plants and animals. * Drought – causes hunger, diseases * Storms cause soil erosion   **Managing changes**  Floods - control   * Digging trenches * Avoiding clearing swamps * Avoid building in drainage systems, swamps   Causes , danger and control of floods  Drought   * Planting trees * Avoid clearing swamps * Digging valley dams   Desert plants sisal , cactus  **Rusting**  Rust is a reddish brown substance that forms on metal when a metal is exposed to oxygen and water.  Note: Oxygen and water are conditions needed for rusting  **Examples of metals**   * Iron , steel , Aluminum , copper   **Ways of controlling rusting**   * By painting * By greasing / oiling * By enameling * By galvanizing * By keeping metals in cool and dry places.   **Dangers of rusting**   * It weakens metals * It makes metals blunt * It makes water in metallic tanks poisonous * It spoils and changes the colour of metal.   **Soil erosion** : Soil erosion is the removal of top soil by its agents.  **Agents of erosion**   * Running water * Strong wind * Animals   **Types of erosion**   * Rill erosion * Gulley erosion * Splash erosion   **Causes of soil erosion**   * Over stocking * Mono cropping * Bush burning * Deforestation   **Ways of controlling soil erosion**  **a) Compound**   * By planting grass in the compound * By planting trees (Afforestation)   In the garden   * By mulching * By crop rotation * Afforestation * Bush farrowing * Contour ploughing * Mulching * Planting trees/ grass * Crop rotation * Planting cover crops * Intercropping * Agro forestry * Bush farrowing   c) In hilly areas   * By terracing * By contour ploughing   Terraces    Contours  Mulching : Mulching is the covering of top soil with dry plant materials ( mulches)  Mulches: are materials used in mulching.  **Examples of mulches.**   * Dry banana leaves * Coffee husks * Dry grass * Saw dust * Dry banana fibre   **Advantages of mulching**   * It keeps the soil fertile * It keeps moisture in the soil * It controls soil erosion * It controls weeds in the garden   **Disadvantages of mulching**   * Mulches are fire hazards * Mulches hides pests * Some mulches are sources of weeds * **Note** : Pests are living organisms that spoil farmers crops. Eg monkeys , birds , rats , weevils, caterpillars. * **Weeds**: are unwanted plants in the garden.   **Examples of weeds**   * Black jack * Star grass * Nut grass * Milk grass * Pig weed   **Ways if controlling weeds**   * By spraying * By mulching * By slashing   **Crop rotation**  **Crop rotation** : is the growing of different types of crops on the same piece of land seasonally  **Illustration**  1st season 2nd season  Beans maize  4th season 3rd season  Cabbages Groundnuts.    **Importance (advantages ) of crop rotation**   * It makes the soil fertile * It controls soil erosion * It controls crop pests * It controls crop diseases * NOTE: Crop rotation , monocropping and mixed farming are examples of farming practices.   **Man made changes (ARTIFICIAL CHANGES)**  These are changes made by man.,  **Examples of man made changes**   * Planting trees * Cutting down tree * Growing crops * Killing animals * Accidents * Painting buildings * Building * Construction of roads   **Effects of man made changes**   |  |  | | --- | --- | | Good effects | Bad effects | | * People get shelter * Easy transport * Houses look good | Drought  Causes floods  Causes soil erosion  Causes dealth |   **Managing changes brought by man**   1. Accidents   An accident is a sudden happening that harms someone’s body.  Examples of common accidents   * Burn * Scalds * Bites * Stings * Cuts   Causes of accidents  a) At school and home  - Carelessness  - Playing bad games  - Running down and up stairs  - Fighting  b) On the road  - Not following road signs  - Over speeding  - Over loading  - Playing on the road  Ways of controlling accidents  a) At home and school  - Avoid fighting  - Avoid playing bad games  - Avoid playing with sharp objects  b) On the road  - Following road signs  - Avoid over speeding  - Avoid over loading  **(Afforestation)**  Is the planting of trees where they have never existed  Reasons why people plant trees.   * To get firewood * To get charcoal * To get poles * To get shade * To get timber * Trees help in rainfall formation   **Things we get from forests**   * Fruits * Poles * Firewood * Timber * Herbal medicine * Flowers   Note: A group of trees growing together is called a forest.  **Forests in Uganda**   |  |  | | --- | --- | | Forest | Where we find it | | Mabira | Mukono/ Buikwe district | | Bugoma | Masindi | | Budongo | Masindi | | Buhweju | Rwampara |   **Types of wood trees**  a) Hardwood trees.  These are trees whose wood lasts for along time.  **Examples of hardwood trees.**   * Mvule * Mahogany * Eucalyptus * Mugavu * Teak * Misambya * Oak   **Soft wood trees**  These are trees whose wood do not last for along time.  Examples of soft wood trees   * Kirundu * Enzingu * Wattle * Misizi * Mutuba (ficus) * Jackfruit tree   NOTE: The bark of Mutuba tree is used to make bark clothes  **Ever green trees**:  These are trees which bear cones (corniferous ) e.g fir . pine , cedar.  **Deforestation**  **Deforestation** is the cutting down of trees on a large scale (massively)  **Reasons why people carryout deforestation**   * To get charcoal * To get firewood * To get poles * To get timber * To make space for farming   **Dangers of deforestation**   * It causes soil erosion * It leads to drought * It destroys habitats for wild animals   **Things we get from wood.**   * Tables * Desks * Chairs * Beds * Doors * Windows frames   **Killing animals**   * Pouching is the illegal hunting of wild animals or This is the hunting of wild animals without permission. * Ways of preventing the killing of animals. * Putting up strict laws against poaching * Fencing game reserves.   **WEATHER**  Weather is the condition of the atmosphere of a place at a given time.  There are four types / conditions / kinds of weather   * Windy weather * Sunny weather * Cloudy weather * rainy weather   Weather makers – these are the aspects, factors or elements of weather.   * Wind blow * cloud cover * Sunshine * Rainfall * temperature * humidity * air pressure   **The weather chart**   |  |  |  |  | | --- | --- | --- | --- | | Sunny | Rainy | Windy | Cloudy | |  |  |  |  |   **Importance of weather**  **Rainfall** – it provides rain water to animals and plants.  **Sunshine** – It dries crops (seeds), provides heat for drying clothes,  - vitamin D  **Clouds** – nimbus clouds form rainfall,  - makes the weather cool.  Items used in different kinds of weather.   * Rainy weather: Umbrellas, gum boots, rain coats. * Sunny weather : Umbrellas , light clothes , sun glasses , sandals * Cloudy weather: Sweater , Jackets overall * Windy weather : sun glasses   **Importance of weather makers**   * Rainfall – it provides rain water to animals and plants * Sunshine – it dries crops (seeds), provides heat for drying clothes * Vitamin D * Clouds – nimbus clouds form rainfall. * Makes the weather cool.   **Weather instruments**  Weather instruments are instruments which are used to show or measure the different factors of weather.  **Weather instruments**   |  |  |  | | --- | --- | --- | | **Instrument** | **Name** | **Use / function** | | Funnel  Measuring cylinder | Rain gauge | Used to measure the amount of rainfall received | | W N  S E | Wind vane | Used to show the direction of wind | |  | Anemometer | Measures the speed of wind | |  | Wind sock | Shows the strength of wind | | Atmospheric  pressure  Mercury | Barometer | Measure air pressure | |  | Sunshine recorder | Show the number of hours it shines |   **Thermometer**  A thermometer is used to measure temperature.  **Types of thermometer**  **a) Clinical thermometer**  clinical thermometer is used to measure the human body temperature.  **Diagram showing a clinical thermometer**  Bulb bore    Mercury stem  Kink / constriction / Namur bend  **b) Six’s thermometer / minimum and maximum thermometer.**  Six’s thermometer is used to measure the highest and lowest temperature of the day.  **Stevenson screen**  A Stevenson screen is used to keep delicate weather instruments.  Its painted white to reflect heat.  Examples of delicate weather instruments   * Barometer * Thermometer   **The seasons**  A season is a period when an area receives the same weather condition for a long time.  There are two seasons in Uganda.   1. **Wet** **season** – an area receives a lot of rainfall. 2. **Dry season** – an area receives too much sunshine.   **Activities done during each season by farmers**   |  |  | | --- | --- | | Wet season | Dry season | | * Planting seeds * Weeding * Pruning * Thinning | * Land clearing * Harvesting crops * Drying seeds * Watering | |
| Theme  Sub-theme | **Air and the sun**  Reading descriptions of words  Air atmosphere objects  Sun weight translucent  Gases properties glass  Oxygen pressure transparent  Nitrogen occupy umbra  Carbondioxide space penumbra  Rare gases bubbles cools  Mixture compressed heat  Percentage Support winnowing  Breathing/respiration natural  Burning heat  Fire extinguisher light  Preserve energy  solar Artificial  Fertilizers Nutrients  Electrical  **Air concepts and its properties**  Air is a mixture of gases  Components / parts of air   * Nitrogen, * Oxygen, * rare gases (argon , helium , xenon , neon , hydrogen , krypton * carbondioxide   **Percentages of gases in the atmosphere**  **A graph showing the percentage of gases in the atmosphere**  Percentage of air  Nitrogen oxygen rare gases carbondioxide  Component of Air  Oxygen 21%  Rare gases 0.97%  Carbondioxide 0.03%  Nitrogen 78%  **Properties of air**   1. Air has weight   balloon with no air    balloon with air  The balloon with air goes down because air has weight.   1. Air exerts pressure   Hard paper glass    Water water  Glass    Hard paper  When you turn the glass upside down, the hard paper does not fall off because air pressure pushes it up.  When taking a drink e.g. soda using a straw, the pressure pushes the drink up the straw.   1. Air occupies space   Inflated ballon   1. Air can be compressed   Compressed air is used in car tyres to support the weight of the car. It is also used in balls, balloons, floaters and sprays.    Compressed air in the ballon      **Importance of air**  **Oxygen**   * supports life (breathing, respiration) * It supports burning   **An experiment to show that air supports burning**  Glass  Burning candle  candle has gone off  When the candle is burning, it is supported by oxygen. A glass cuts off the supply of oxygen and then it gets used up in the glass.  The gas the remains in the glass is carbondioxide.  NB: The gas produced by a burning candle is carbondioxide.  **Carbondioxide**   * It puts out fire because it does not support burning. A fire extinguisher uses carbondioxide to put out fire. (carbondioxide extinguishes fire)   Places where we find fire extinguishers   * schools * hospitals * banks * hotels * Vehicles * petro stations   ***Picture of fire extinguisher***  Carbondioxide is used to preserve drinks like soda, beer and tinned food.  carbondioxide  Plants use carbondioxide in the process of making their own food. (photosynthesis)  **Nitrogen –**   * Nitrogen helps in formation of artificial fertilizers * Nitrogen provides nutrients to plants through minerals.   **Rare gases** – used in electrical bulbs.  **Wind (moving air)**  Wind is moving air or wind is air in motion  **Uses of wind**   * Wind cools our bodies * Wind moves things e.g. boats, kites * Wind is used in winnowing * Wind moves wind mills   **Uses of wind mills**   * Used to pump water from the ground * Used to generate electricity   **Dangers of wind**   * Strong wind destroys crops. * Strong wind breaks tree branches. * Wind spreads diseases like flu, cough tuberculosis , measles , mumps etc * Wind rises dust * Wind destroys houses * Wind causes soil erosion   **The sun**  The sun is the main source of heat and light energy  It also provides solar energy  **Sources of light**   * Natural sources of light (God made sources) e.g. the sun, stars, glow worms (caterpillars), fire flies, shooting stars, volcanic mountains * The moon s not a natural source of light because it reflects light from the sun.   **Artificial sources of light (man made)**   * torches * electric bulbs * candles * mobile phones * match boxes   **Effects of the sun**  Uses of the sun to animals   * Helps to see (light) * Tells direction * It helps in formation of rainfall * It dries clothes * It is a source of solar energy * Provides vitamin D   **Uses of the sun to plants**   * Helps plants to manufacture (make) food. * Helps plants to grow well.   **Dangers of the sun**   * Prolonged sunshine causes drought. * Too much sunshine dries crops.   **Changes bought by the sun on the earth**   * It causes day and night * Drought   Day is the time between sun rise and sun set.  Night is the time between sun set and sun rise  Qn. What causes day and night? the rotation of the earth.  **Plants need sunlight to grow**    sun rays  Box  A    A plant bends towards the hole where sunlight is.  Shadows: A shadow is a region of darkness formed when light falls on an opaque object  **Formation of shadows**  Shadows are formed with light falls on an opaque object.  Shadows are formed when an opaque object stands in the way of light.  **Opaque objects:**  These are objects which do not allow light to go through them.  **Examples of opaque objects**  Walls, books, trees, tables, desks etc  **Translucent objects**  These are objects which allow light to go through them e.g. clear glass, colourless polythene, sun glasses.  **Transparent objects**  These are objects which allow little light to pass through them e.g clear glass, water and air.  **Parts of a shadow**  A shadow has two parts.  a) Umbra – the darker part of a shadow  b) Penumbra – the lighter part of a shadow  umbra  penumbra  **Characteristics of shadows**   * Have two parts (umbra and penumbra) * Shadows are always formed on the opposite side of the source of light. * Appear shortest at noon or mid-day. * Appear longest in the early morning and late evening.   **Uses of shadows**   * Shadows tell time * Shadows show direction * Shadows give us shade   **How shadows are formed**  source of light  1. Opaque object    shadow  2. source of light  Shadow  opaque object |
| Sub Theme | **Water**  **Reading descriptions of words**   * Rainfall dark public promote * Formation feathers stagnant condition * Cycle piles Water resemble * Vapour measure Sunrays aspects * Nimbus source Clouds generate * Evaporation irrigation Heat fencing * Ice disposal Gaseous waste * Stratus proper Cirrus products * Cumulus collect Masses direct * Nearest station Furthest elements * Humidity types Temperature * Layers transport   Water cycle : Is the process by which rain is formed  **Water cycle/ rainfall formation**   * The sun heats the water body. * The water gets heated up and starts evaporating (rising up). * The vapour rises up and then condenses to form nimbus clouds. * The condensed vapour becomes heavy and then falls down as rain.   **Diagram showing the water cycle**    sun rays nimbus clouds  Condensation  Rain  Steam vapour  Evaporation  **Water body**  Condensation: is the process by which vapour changes to water.  Transpiration : Is the process by which plant lose water to the atmosphere through leaves.  **An experiment to show how rainfall is formed**  ***Teacher to draw the experiment***   * The charcoal stove represents the sun. * The water in the kettle represents the water body. * Evaporation takes place inside the kettle.   ***NOTE***: Evaporation is the changing of water into gas.   * The cold water in the bottle condenses the steam to water. * The water droplets represent rain.   Types of rainfall.   * Relief rainfall * Convectional rainfall * Cyclonic rainfall   ***NOTE***: Vapour is water in gaseous form and ice is the water in solid form.  **Importance of rain**  To man/ animals/ plants   * Plants get water used to grow. * Animals get water for drinking. * Rain fills water bodies. * Rain cools the weather.   **Dangers of rain**   * Too much rainfall destroys crops. * Too much rainfall causes floods. * Too much rainfall kills animals. * Too much rainfall destroys buildings. * Too much rainfall causes soil erosion.   **Clouds**  Clouds are big masses of water that form in the sky.  **There are four types of clouds.**   * Nimbus * Cumulus * cirrus * stratus.   Nimbus clouds   * Dark grey in colour, appear nearest the earth and bring rain.   Stratus clouds   * They spread in the sky with calm flat layers and are a sign of fair weather.   Cirrus clouds   * Appear furthest (highest) in the sky. Resemble (look like) feathers.   Cumulus clouds   * They are white in colour and resemble cotton piles.   **Uses of clouds**   * Form rainfall (nimbus clouds) * Protect us from too much sunlight. * Make the weather cool.   **Water sources**  There are two types of sources of water   1. Natural sources or God made sources e.g rain, lakes, rivers, oceans swamps etc 2. Artificial sources or man made sources e.g. tanks, bore holes, fountains, dams, spring ,etc   **Importance of water**   * For domestic use e.g. cooking, bathing * For transport * For generating electricity (hydro) * For cooling machines * For irrigation/ watering crops   **Ways of protecting water sources**   * By fencing sources * Putting laws * Planting grass around them * Proper disposal of waste products * Adding chlorine to water sources to kill germs.   **Water harvesting**  Ways of collecting water   * By using tanks * Using jerrycans * Tapping from the roof * Using dams * Tapping from trees   **Ways of contaminating water sources**  Urinating in water sources.  Putting rubbish in water sources  **Sanitation**  Sanitation is the general cleanliness of a place where we live (public cleanliness)or is the cleaning of a place where we live or stay.  **Important of sanitation**   * It reduces the spread of germs. * It promotes public health. * Little money is spent on treating people. * People live longer. * Vectors are controlled.   **Ways of promoting proper sanitation**   * Cleaning latrines or toilets. * Proper disposal of rubbish. * Slashing around our homes. * Draining away stagnant water. * Sweeping our compound. * Building plate stands. * Fencing water sources.   **Why do we smoke latrines?**   * To reduce bad smell * To prevent house flies.   **Things used to keep proper sanitation**   * Brooms, soap, water, ash, dustbin, hoes, rays, rakes, brushes, wheel barrows, spades   **Qualities of a good house**   * A good house should have windows, doors, strong roof, ventilators and a verandah.   **Qualities of a clean home**  A good home should have;   * A kitchen * Bathroom * Latrine or toilet * Rubbish pit * Plate stand * Well ventilated house   **Germs**  Germs are small living things (organisms) that cause diseases.  There are four types of germs.   * Bacteria * Viruses * Fungi * Protozoa |