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| **INSTRUCTIONAL UNIT PLAN** | | | | | | | | |
| **SUBJECT: Science & Technology GRADE LEVEL: 1** | | | | | | | | |
| **UNIT TITLE: Physical science – Energy LENGTH OF UNIT: 2 weeks** | | | | | | | | |
| **UNIT SUMMARY:**  Students will be exposed to the concept of energy and its uses while developing their critical thinking skills while learning several concepts across the curriculum covering the four core areas.    These concepts include energy, solid shapes, linear measurement, oral presentation, time, continuity and change. | | | | | | | | |
| **FOCUSING QUESTIONS:** | | | | | | | | |
| * Why do some objects move? | | | | | | | | |
| * How would your day be without electricity? | | | | | | | | |
| * How is the Sun important in our lives? | | | | | | | | |
| **UNIT OBJECTIVES** | | | | | | | | |
| * Develop an awareness of heat, light, sound, electricity in the context of changes taking place. | | | | | | | | |
| * Develop an awareness of devices that use/convert/produce heat, light, electricity and sound. | | | | | | | | |
| * Design and make devices powered by moving air | | | | | | | | |
| * Develop awareness of the importance of heat, light, sound and electricity in our daily lives. | | | | | | | | |
| **UNIT STRANDS/CROSS CURRICULAR LINKS:** | | | | | | | | |
| Geometric Thinking - Solid Shapes (MT) | | | | | | | | |
| Understanding Measurement- Linear measurement (MT) | | | | | | | | |
| Transportation (SS) | | | | | | | | |
| Listening & Speaking- Oral description/ explanation (LA) | | | | | | | | |  |
| **CONTENT STANDARDS** | | | | | **PERFORMANCE STANDARDS** | | | |
| ST. CS. PS. 1 - Pupils can understand that energy has several forms such light, heat, sound, electricity. | | | | | ST. 1. PS.EN.1 - Identify a variety of moving objects and list the variety of ways in which they move. | | | |
| ST. CS. PS. 2 - Pupils can identify devices that use/convert/produce various forms of energy in their daily lives. | | | | | ST. 1. PS. EN. 2 - Design and make simple paper objects like planes, windmills. | | | |
| ST. CS. PS. 3 - Pupils can design and construct devices powered by moving air and water using discarded materials in the environment. | | | | | ST. 1. PS. EN. 3 - List some uses of the sun in everyday activities | | | |
|  | | | | | ST. 1. PS. EN. 4 - Identify and name devices in the home that use electricity, outlining what type of environment would exist without this energy source. | | | |
| **LEARNING EXPERIENCE 1**  **Standard Identifier/s:** ST. CS. PS. 1, ST. CS. PS. 2, ST. 1. PS.EN.1 | | | | | | | | |
| **TITLE** | **OBJECTIVES** | **Content and VOCABULARY** | **KEY SKILLS** | **Teaching Learning Procedures /ACTIVITIES** | | **Assessment** | **DIFFERENTIATION**  **(content, process, product)** | **EXTENSIONS FOR DEPTH AND COMPLEXITY** |
| Objects in Motion  (1 lesson) | **Students will be able to:**   1. Identify at least three (3) objects that move. 2. Observe at least three (3) objects in motion. 3. List at least three ways in which objects to move. | Motion  Energy | Observing  Recording  Communicating | Students will watch a video presentation showing objects in motion.  Students will chose three objects that move in different ways.  In groups students will manipulate each object to observe how it moves. Students will make a list naming each object and stating how it moves.  Teacher will lead class in a guided discussion on the different ways in which objects move. | | Checklists(CK)  Worksheets (WKS) | Some students will write lists while others will make drawings of the objects and how they move.  (e.g. Name/draw the object that moves by flying).  The assessment will be differentiated as follows:  All students will have similar worksheets but some worksheets would be worded whereas others would be in the form of pictures. | Students will look around their homes and communities for five objects that move and state the wayin which each object moves. |
| **Scoring Tools for Assessment** | ** General Rubric (GR)  Observation Chart(OBS)  Checklist (CK)  Worksheet (WKS)**  ** Question Paper (QP)  Scale Model(s)(SM)  Answer Booklet (AB)  Task-Specific Rubric (TSR)** | | | | | | | |

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| **LEARNING EXPERIENCE 2**  **Standard identifier/s:**  ST. CS. PS. 3, ST. 1. PS. EN. 2 | | | | | | | |
| **TITLE** | **OBJECTIVES** | **CONTENT AND VOCABULARY** | **KEY SKILLS** | **Teaching Learning Procedures/ ACTIVITIES** | **Assessment** | **DIFFERENTIATION**  **(content, process, product)** | **EXTENSIONS FOR DEPTH AND COMPLEXITY** |
| Designing and making paper objectsthat move.  2 lessons:  Lesson 1 – Designing & Making a Paper Plane  Lesson 2- Designing & Making a Windmill | Students will:  1. Design a simple paper plane/windmill.  2. Construct paper planes/windmills using their choice of discarded paper and tools.  3. Demonstrate how their planes/windmills move. | Design  Make/Construct  Windmill  Discarded  Energy | Designing  Problem Solving Using Tools | Students will be divided into groups and given a choice of 2 pieces of discarded paper.  Students will then be shown a model of a paper plane/ windmill, each group will design and make their own plane/windmill. Students will test their designs.  Teacher will then either demonstrate or show a video on how to make a plane/windmill using a step-by-step process.  Students will use the second sheet of paper to construct a similar design.  Students will then test their plane/windmill. | Checklist  Scale Model(s) | Some students will watch a video with step-by-step instructions on building a plane/windmill and then carry out the activity.  A select group of students will be guided by the teacher in making the plane and windmill. | Students will be make observations on how the type of material and wind affect motion. |
| **Scoring tools for assessment** | ** General Rubric (GR)  Observation Chart(OBS)  Checklist (CK)  Worksheet (WKS)**  ** Question Paper (QP)  Scale Model(s)(SM)  Answer Booklet (AB)  Task-Specific Rubric (TSR)** | | | | | | |

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| **LEARNING EXPERIENCE 3**  **Standard identifier/s:** ST.CS.PS.1, ST.CS.PS.2, ST. 1. PS. EN.3 | | | | | | | |
| **TITLE** | **OBJECTIVES** | **CONTENT AND VOCABULARY** | **KEY SKILLS** | **Teaching Learning Procedures /ACTIVITIES** | **Assessment** | **DIFFERENTIATION**  **(content, process, product)** | **EXTENSIONS FOR DEPTH AND COMPLEXITY** |
| Using Energy from the Sun  2 Lessons | Students will be able to:   1. List five (5) uses of the sun in everyday activities. 2. Observe five (5) ways the sun is used in everyday activities. 3. Perform an experiment using energy from the sun to dry a thin piece of cloth. | Sun  Energy  Experiment  Light  Heat  Food  Wet vs dry | Observing  Experimenting  Recording  Reporting | Students will be divided into groups of two and given their choice of differently coloured fabric, clothespins and bowls.  Students will perform the action of washing and rinsing the fabric. Students will understand that the fabric is wet and will need to be dried.  Students will hang the fabric in the sun and make observations periodically. Teacher will observe how the students carry out this activity and complete an observation chart.  The teacher will show students pictures and videos of five different uses of the sun. Students will make a list of the uses being depicted. | Observation Chart  Worksheet | Some groups will draw the uses of the sun while others will trace the words showing the uses and orally report on the uses of the sun. | Students will research the following:  How would the intensity of the sun affect the drying process? |
| **Scoring tools for assessment** | ** General Rubric (GR)  Observation Chart(OBS)  Checklist (CK)  Worksheet (WKS)**  ** Question Paper (QP)  Scale Model(s)(SM)  Answer Booklet (AB)  Task-Specific Rubric (TSR)** | | | | | | |

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| **Learning Experience 4**  **Standard identifier/s:**  ST.CS. PS.2, ST. 1. PS. EN. 4 | | | | | | | |
| **TITLE** | **OBJECTIVES** | **CONTENT AND VOCABULARY** | **KEY SKILLS** | **Teaching Learning Procedures/ACTIVITIES** | **Assessment** | **DIFFERENTIATION**  **Content, process, product)** | **EXTENSIONS FOR DEPTH AND COMPLEXITY** |
| Electricity in the Home  1 lesson | 1. Identify and name at least five (5) devices in the home that use electricity. 2. Outline what type of environment would exist without electricity. | Electricity  Devices/Appliances  Environment  Energy Source  Safety  Heat  Light  Sound | Observing  Recording  Manipulating | The teacher will briefly discuss with students the safety measures for the lesson.  The teacher will set-up two stations in the classroom:   * Station 1- Electricity Available to operate devices. * Station 2 – No electricity available to operate devices.   While being supervised, each student will visit both stations and try to operate the appliances.  Students will use their observations to determine which station has electrical energy and which does not.  Students will write the names of the electrical devices observed.  The class will then discuss how loss of electricity can affect the day-to-day operations.  Students will then be divided into groups selected by the teacher. One group will colour a picture story describing what the environment without electricity.  Another would write/trace three sentences describing their environment without electricity. | Observation Chart  Worksheet | One group colours pictures the other write sentences another group traces the sentences. | Students will role play to demonstrate safety when using electricity.  Students will problem solve a situation where there is no electricity (light) at night. |
| **Scoring tools for assessment** | ** General Rubric (GR)  Observation Chart(OBS)  Checklist (CK)  Worksheet (WKS)**  ** Question Paper (QP)  Scale Model(s)(SM)  Answer Booklet (AB)  Task-Specific Rubric (TSR)** | | | | | | |