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| **INSTRUCTIONAL UNIT PLAN** | | | | |
| **SUBJECT:** Mathematics | | | **GRADE LEVEL: 3** | |
| **UNIT TITLE: Measuring Around Us: Problem Solving** | | | **LENGTH OF UNIT: 3 weeks** | |
| **UNIT DESCRIPTION/ SUMMARY:** | | | | |
| This unit focuses on Linear Measurement. Across the two (2) weeks unit, students would be given the opportunity to develop their problem - solving skills while learning several concepts across the curriculum covering the four core areas. The learning experiences are designed to ensure that students are measuring for a purpose. Students will estimate, measure and compare lengths, heights and distances, then apply these concepts to their everyday experiences. | | | | |
| **FOCUSING QUESTIONS:** | | | | |
| * How do we measure? | | | | |
| * In what situations do we utilize measurement in the real world? | | | | |
| * How do you calculate the length from different starting points (not beginning at 0) using standard measurement tools? | | | | |
| **UNIT OBJECTIVES: Use an integrated approach to** | | | | |
| * Develop problem solving Skills related to length, height and distance. | | | | |
| * Write for different audiences | | | | |
| * Select appropriate measurement and materials to construct different objects | | | | |
| * Locate neighbouring communities using a map | | | | |
| **STANDARDS ADDRESSED:** | | | | |
| **UNIT STRANDS (Cross-curricular)** | * **Understanding Measurement**- Linear Measurement (MT) | | |  |
| * Writing – Writing for different purposes and audiences (LA) | | |  |
| * Use of Technology – Constructing gadgets(ST) | | |  |
| * Community Identity – Map skills (ss) | | |  |
| **CONTENT STANDARDS** | | **PERFORMANCE STANDARDS (*Use standard identifiers*)** | | |
| * Pupils should engage in pair and small group investigations and other activities which would allow them to appreciate the magnitude of things measured in metres, centimetres, kilograms, grams, litres, and millilitres. | | * Estimate and measure lengths, heights and distances using the metre, or the centimetre as the unit of measure. **MT.3.M.LM.1** | | |
| * Pupils should be able to select and use appropriate instruments and units for measuring lengths, heights, mass and capacity of objects. | | * Explain why there is a need for a smaller unit of measure – the centimetre. **MT.3.M.LM.2** | | |
|  | | * Compare linear measurements of two or three objects. **MT.3.M.LM.3** | | |
|  | | * Use examples to explain the concept of perimeter as the total distance all around plain shapes. **MT.3.M.LM.5** | | |
|  | | * Measure and utilize measurements obtained or given to determine perimeter of surfaces and shapes in diagrams. **MT.3.M.LM.5** | | |
|  | | * Create and solve problems related to length, height and distances. **MT.3.M.LM.6** | | |
| * SS.3.cs.3 Develop basic skill of location in community and build elementary map reading skills based on their community | | * Locate local and neighbouring communities on a large scale pictorial map SS.3.CI.3 * Write sentences about landmarks in community and neighbouring communities –size SS.3.CI.8 | | |
| * Present ideas in a logical appropriate sequence in written presentation | | * Develop an expository essay of least three paragraphs from a tiopic sentence and provide supporting details that explain and clarify the topic LA.3.WR.DP.11 | | |
| * Pupils can design and construct devices | | * Identify and appreciate that the use of gadgets tools and structures in their homes and communities are made by humans ST.3.TE.UT.1 | | |

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| **LEARNING EXPERIENCE 1** | | | | | | | | |
| **TITLE** | **OBJECTIVES** | | **VOCABULARY** | **KEY SKILLS** | **ACTIVITIES** | **DIFFERENTIATION** | **Assessment** | **EXTENTION FOR DEPTH AND COMPLEXITY** |
| Measuring the length, height and distance of objects | Students will be able to judge whether they should use centimetres or meters to measure an object based on its length or height.  Students will also be able to relate how many centimetres (100) create a meter by counting by 10's. They will also recognize that meters and centimetres are standard units of measure under the metric system. | | measurement, metre stick, metre, centimetre, comparing size, measure, ruler | Measuring, communicating | Give a ruler showing inches and centimetres to each student. Ask a student to explain the difference in the sides. Make sure they are using the centimetres side. Next, give a A) cardboard bookmark or a B) lollipop to each student.  Demonstrate how to measure centimetres, then have each student measure their bookmark or lollipop.  Distribute a metre stick to each group.  Have students identify the centimetres on the metre stick. Establish that there are 100cm in 1 m. Students identify objects that are about 1 metre long and less than 1 metre or 100cm.  Discuss and demonstrate how to measure the length of objects more than 1metre or 100 centimetre long, then have students carry out the measurements.  Have students practise measuring objects using a ruler with centimetres and a metre stick | **Groups of students**: Make sure that struggling students understand to use the centimetres side of the ruler, not inches. Remind them to look for the cm abbreviation for centimetre and that the centimetre numbers are closer together than the inches.  **Individual students**: For students that struggle with fine motor skills, you might need to help them set the unit centimetre blocks in place without having any gaps or overlaps. They may also need something to push the cubes up against, such as a heavy text book. | Worksheets,  Estimating and measuring varied objects  Oral communication by students | Have students practice using the ruler with centimetres and the metre stick to measure height and distances of objects in the classroom |
|  | | **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** | | | | | | |
| **TITLE** | **OBJECTIVES** | | **VOCABULARY** | **KEY SKILLS** | **ACTIVITIES** | **DIFFERENTIATION** | **Assessment** | **EXTENTION FOR DEPTH AND COMPLEXITY** |
| Estimating length, height and distances | Make reasonable estimates when measuring lengths, heights and distances using centimetres and metres  Compare estimated measures with actual measures to help refine estimating skills.  Practice using measurement tools to verify actual measurement of lengths, heights, distances. | | Estimate, measure, metre, centimetre, units, length, height, distance, tall, short, Long, wide, ruler |  | In small groups, have students measure the length of an unsharpen pencil in centimetres (about 18cm). Instruct students to visualize the length of the pencil and write two items in the classroom that are shorter and two items longer than 18cm (length of pencil). Ask for students responses. Discuss what strategies students used when identifying the objects.  Repeat the activity for objects that are about 9cm and 36cm long. Confirm some students’ estimates by having volunteer students measure (to the nearest centimetre). Discuss findings.  Repeat the activity using other items and the 30cm ruler and the metre stick. Students record measurements on work sheet provided. Students compare the reasonableness of their estimates. | For students looking for a greater challenge, encourage students to challenge themselves to become more and more accurate in their estimates.  For students who need a little extra assistance, naming specific items to be measured can simplify the activity. Also working with partners can be effective to scaffold the activities. | Determine distances between spaces then measure for accuracy  Questioning- where do we start measuring?  Checking how to place ruler or meter rule to measure | Estimate and measure other objects at home  Compare objects of similar or almost similar length in the environment at home or school |
|  | | **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** | | | | | |
| **TITLE** | **OBJECTIVES** | **VOCABULARY** | | **KEY SKILLS** | **ACTIVITIES** | **DIFFERENTIATION** | **ASSESSMENT** | **EXTENTION FOR DEPTH AND COMPLEXITY** |
| Measuring Perimeter of surfaces and shapes | Measure around surfaces and shapes to find the perimeter  Use measurements obtained or given to determine the perimeter of surfaces and shapes | around, side, perimeter, rectangle, square, shape, surface | |  | Teacher record the name of objects (e.g. a text book, window, Classroom floor, etc.). Students will work in groups to make a sketch of the shapes, label the sides (e.g. side A, B, C, D), measure each side, and record the measurement of each side (to the nearest metre or centimetre). Students will choose an appropriate measuring tool and unit. Groups will report their measurements.  After students have recorded the measurements, teacher ask students to add and record the total of the measurements of the sides of each object. Each group will report their totals and explain how they went about finding the totals. Introduce the word ‘perimeter’ and inform students that they were calculating the perimeter of shapes. Students will write the word perimeter next to each total.  Students will discuss in their groups the process in finding the perimeter of a shape then report their answers. Teacher prompt students to form a general statement to explain the concept of perimeter of a shape and how to measure the perimeter. These statements will be recorded on the chalkboard.  Teacher provides a worksheet with various shape of polygons. Students work in pairs to measure and record the perimeter. | Students can trace finger around the perimeter of the shapes to develop understanding.  Have students use a piece of string along the sides of a shape, cut the string to the length of the perimeter, and then measure the string, using a ruler. | Questioning  Worksheets  Actual measurement | Have students draw shapes with a given perimeter (e.g. draw different shapes that have a perimeter of 24cm).  Students compare the perimeter of ojbects with different shapes in their homes. |
|  | | | **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)** | | | | | |