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| **TEAM Lesson Plan Template** | |
| Teacher: Dr. Amanda Niedzialomski | |
| Subject/Grade: Mathematics (measurement) 2nd or 3rd grade | |
| Lesson Title: What should we measure with? | |
| **STANDARDS** | **Identify what you intend to teach.** State, Common Core, ACT College Readiness Standards and/or State Competencies; Enduring Understandings and Essential Questions. |
| SMP5. Use appropriate tools strategically.  SMP6. Attend to precision.  2.MD.A.1 Measure the length of an object in whole number units by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.  2.MD.A.2 Measure the length of an object using two different whole number units of measure and describe how the two measurements relate to the size of the unit chosen.  3.MD.A.2 Measure the mass of objects and liquid volume using standard units of grams (g), kilograms (kg), milliliters (ml), and liters (l). Estimate the mass of objects and liquid volume using benchmarks. For example, a large paper clip is about one gram, so a box of about 100 large clips is about 100 grams. | |
| **OBJECTIVE(s)/Sub-Objectives** | **Connect prior learning to new learning.** Clear, Specific, Observable, Demanding, High Quality, Measurable, Aligned to Standard(s), and Integrated with other subjects, build on prior student knowledge  Student-Friendly (I Can Statement) |
| I know whether to use a ruler or meter stick to measure length.  I know when to use a measuring tape to measure length.  I know when to use a measuring cup.  I can use a scale to measure weight. | |
| **MATERIALS AND RESOURCES** | **Content-related:** Clearly supports lesson objective(s); rigorous & relevant; Incorporates multimedia & resources beyond the textbook. |
| **Materials**  Images of number paths might be helpful to transition from the number path idea (labeled spaces) to the ruler idea (labeled tic marks). Consider  <https://mathisvisual.com/number-paths/> or <https://www.therecoveringtraditionalist.com/how-to-use-a-number-path/>  Several objects to measure. These might include: piece of paper, pencil, paper clip, table, wall, ping-pong ball, classmate’s head, glass of water.  Things to measure with: ruler; meter stick, measuring tape, balance/mass set, measuring cup.  What\_measure\_with worksheets (attached). Paper towels & a bucket (if using water).  **Routine for distributing materials:** Place a worksheet at each group table.Have a student pass out a ruler to each group. Have another student pass out meter sticks to each group, another student measuring tapes, and another student measuring cups. Each group of students should move to the balance when the teacher tells them that it is their group’s turn. | |
| **ACCOMMODATIONS/ADAPTATIONS** | **Learning styles and interests.** Anticipate learning difficulties, regularly incorporate student interests & cultural heritage; differentiate instructional methods. |
| **Modifications/Plans for Diverse Learners**  **Differentiation**  **----- Content ----- Process**  **--x---Product** For some students it may be more appropriate to have them verbally describe the tools and show the teacher their measurements directly rather than completing the worksheet  A worksheet with pictures of rulers, meter sticks, measuring cups, etc. might be more appropriate than the worksheet with words.    **----- Tiered Assignments ----- Flexible Grouping**  **----- Learning Centers \_\_\_\_ Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Accommodations**  **\_\_\_ Preferential Seating \_\_\_ Extended Time \_\_\_ Small Group \_\_\_ Peer Tutoring**  **\_\_\_ Modified Assignments \_\_\_ Other**  **Early Finishers:** | |

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| **MOTIVATING STUDENTS/ANTICIPATORY SET** | **“Hook”: Engage students’ attention and focus on learning.** Personally meaningful and relevant. |
| Tell students that they are going to measure objects in the room. | |
| **INSTRUCTIONAL PROCEDURES** | **Step-by-Step Procedures-Lesson Sequence: Basic to Complex.** Lesson includes visuals, modeling, logical sequencing and segmenting (beginning, middle, ending); essential information; concise communication; grouping strategies; differentiated instructional strategies to provide intervention & extension; seamless routines; varied instructional strategies; key concepts & ideas highlighted regularly. |
| ***Introductio*n**  With the whole group’s attention, make sure that students know the names of all the measuring tools. Hold up each tool in turn and have the whole group say its name.  Mention objects that that students will measure. Explain to students that each group should complete a worksheet. Identify a group leader and recorder in each group. The group leader will ensure that the group understands the task and ensure that the group agrees on each measurement before recording. The recorder will fill out the worksheet.  **Middle**  Tell students that they have twenty minutes to complete the worksheet. Observe as the groups work. Move to each group in turn and ask them to find something which they will need to weigh. Tell the group that it is their turn to use the scale (or balance) and that they should complete that row on the worksheet now.  **End/Closure**:  Regain the whole group’s attention.  Ask students which tool they used to measure the paper. Have someone explain why their group used that tool. Repeat for the other objects on the worksheet. Help students understand that, for length the choice of one tool over another is not “wrong,” but that, for example, a meter stick or measuring tape is more convenient for measuring a table than a ruler is.  Collect worksheets. Have students who distributed supplies collect the same supplies and return them to storage.  **Motivating Students**  \_x\_ Relate to Real World Measurement is a real-world activity  \_x\_ Verbal Reinforcement The teacher will monitor students’ work throughout the activity to provide reinforcement.  **Presenting Instructional Content**  \_x\_ Hands on Students are holding and using measurement tools  \_x\_ Modeling This lesson assumes previous lessons where students have learned to measure with a ruler, measuring cup, and balance. If necessary, remind students how by showing them.  ***Instructional strategies:***  **Modeling and Guided Practice *–*** The teacher will monitor students’ work and ask questions to prompt them if they are stuck.  **Check for Understanding (CFU) –**  ***What am I doing for students that progress at different rates?***  Encourage students to help each other. If students finish early, have them measure the same objects with a different unit. If students are falling behind, ask leading questions to motivate their progress.  ***What do I do if they get it?***  Discuss which tools they prefer to use.  ***What do I do if they don’t get it?***  Focus on length of the paper and length of the table. Show students how to measure with the ruler and how to measure with the meter stick. Emphasize that the first mark on the ruler indicates zero. The numbered marks count the spaces (the inches or centimeters) between the marks, not the marks. (The mark labeled “1” is the second mark; the mark labeled “2” is the third mark, and so on.) | |
| **QUESTIONING/THINKING/PROBLEM SOLVING (embedded throughout)** | **Balanced mix of question types.** Utilizes Blooms Taxonomy/Webb’s Depth of Knowledge; high frequency; purposeful & coherent; require active responses; balance based on volunteers/non-volunteers, ability, & gender; lead to further inquiry & self-directed learning.  **Implement four types of thinking (Analytical, Practical, Creative, & Research-based) & Teach/Reinforce problem-solving types**. Provide opportunities for students to generate ideas & alternatives; analyze, evaluate & explain information from multiple perspectives& viewpoints. |
| **Questioning** These questions will occur throughout the activity as prompts based on groups’ or individual students’ progress.  **Knowledge:**  Which one of these is called a ruler?  Which of these do we use to measure length?  Which of these do we use to measure volume?  Which of these do we use to measure weight?  **Comprehension:**  How long is this pencil in inches?  How long is this pencil in centimeters?  **Application:**  Which tool should we use to measure a wrist to see what size a bracelet should be?  Which tool should we use to measure \_\_\_\_\_ ?  Will you try more than one tool and see which you like better?  **Analysis:**  If we measure the height of the door in inches and then measure the height of the door in centimeters, which measurement will give a larger number?  **Synthesis:**  **Evaluation:**  **Thinking**    \_x\_ **Practical** – Some people measure things every day; most people measure things at some point in their lives.  \_x\_ **Creative**– Students get to choose which tool and which unit to use.  \_x\_ **Analytical** – Students are comparing the advantages and disadvantages of each tool to determine which is appropriate.  \_x\_ **Research-based** – Students can try each of a ruler, meter stick, and a measuring tape for a measurement to decide which they prefer.  **Problem Solving**  **\_x\_\_** **Observing and Experimenting**. Students can try each of a ruler, meter stick, and a measuring tape for a measurement to decide which they prefer.  **\_x\_\_ Categorization** Students classify quantities as length, volume, or weight to decide which tool(s) is appropriate for measuring. | |

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| **GROUPING** | **Maximize student understanding & learning** Varied group composition (race, gender, ability, & age); clearly understood roles, responsibilities & group work expectations; accountability for group & individual work; student opportunities for goal setting, reflection & evaluation of learning. |
| * Heterogeneous groups of 4 to 5 students engage in guided practice * Each group has a leader and a recorder. Everyone is a measurer. * The teacher will identify individuals for group roles and describe their jobs before turning groups “loose” to do their measurements. * Product. Students will complete a worksheet. | |
| **ASSESSMENT** | **Formative and/or summative assessment.** A variety of assessments, including rubrics, measure achievement of objectives and informs instruction. |
| **\_\_x\_ Worksheet** After collecting the worksheets, the teacher will check to see if students measured and recorded units correctly.  **\_\_x\_ Observation** The teacher will directly observe if the students are selecting appropriate tools and measuring correcly. | |
| **CLOSURE** | **Reflection/Wrap Up.** Summarizing, reminding, reflecting, restarting, connecting. |
| ***Reflection: You must reflect on every lesson you teach.*** | |

**NOTES:**

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