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| **TEAM Lesson Plan Template** | |
| Teacher: Dr. Amanda Niedzialomski | |
| Subject/Grade: Mathematics (measurement) Kindergarten | |
| Lesson Title: Box for a ball | |
| **STANDARDS** | **Identify what you intend to teach.** State, Common Core, ACT College Readiness Standards and/or State Competencies; Enduring Understandings and Essential Questions. |
| SMP1. Make sense of problems and persevere in solving them  SMP2. Attend to precision  K.MD.A.2 Directly compare two objects with a measurable attribute in common, to describe which object has more of/less of the attribute. For example, directly compare the heights of two children and describe one child as taller/shorter. | |
| **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 determine which box is large enough to hold a ball. | |
| **MATERIALS AND RESOURCES** | **Content-related:** Clearly supports lesson objective(s); rigorous & relevant; Incorporates multimedia & resources beyond the textbook. |
| **Materials**  Several (three to five) closed, cube-shaped boxes (see attached templates). These boxes should be different colors so that students can refer to, for example, “the blue box.”  A ball (bouncy ball, ping-pong ball, or a baseball).  A different ball and one lidless box just large enough to hold the ball. These are for the teacher to demonstrate the idea of a ball in a box. The students will not use this ball and box.  **What if the technology is not working?** This is a low-tech activity.  **Routine for distributing materials:** Place the ball and boxes on a table where the students will work in a group. | |
| **ACCOMMODATIONS/ADAPTATIONS** | **Learning styles and interests.** Anticipate learning difficulties, regularly incorporate student interests & cultural heritage; differentiate instructional methods. |
| **Modifications/Plans for Diverse Learners *(NOTE: Clearly identify where you will use each of these in your lesson; do not just check the box!)***  **Differentiation**  **\_\_x\_\_ Process** The goal is for students to compare the width (diameter) of the ball to the width of the box to determine if the ball will fit.  For some students it may be necessary to remove the lid of a box to convince them that the ball will or will not fit. The teacher should have open boxes (or scissors) ready in case this need arises.  For other students, it may be possible to show them how a template folds into a box and then ask them to predict, just by looking at the template, whether the ball will fit into the box.  A more challenging task is to use non-cubical boxes. A student must check all three dimensions of the box before deciding if the ball will fit inside. For example, the length and width might be large enough to accommodate the ball, but the height is too small.  **Accommodations**  **\_\_\_ Preferential Seating \_\_\_ Extended Time \_\_\_ Small Group \_\_\_ Peer Tutoring**  **\_\_\_ Modified Assignments \_\_\_ Other**  **Early Finishers:**  There should be no early finishers, but a group discussion. The entire group finishes when each student understands which box(es) will hold the ball. If one student understands earlier than others, then that student should try to explain to the others why the ball will or will not fit in the various boxes. | |

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| **MOTIVATING STUDENTS/ANTICIPATORY SET** | **“Hook”: Engage students’ attention and focus on learning.** Personally meaningful and relevant. |
| Show students a jewelry box or a cereal box. Point out that boxes come in different sizes, but each box must be large enough for the thing we want to put inside it. | |
| **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**  Show students a ball in a lidless box just large enough to hold the ball. Show students the colored boxes and a ball. Ask them to decide which box(es) are large enough to hold the ball. Place the large enough boxes in a group, and place the too-small boxes in another group.  **Middle**  Monitor students as they complete the activity. Ask questions to prompt them as necessary.  **End/Closure**:    Ask the group which boxes are large enough to hold the ball. Is there a box which is just big enough? Is there a box that is much too big? Did they have to compare the ball to each box? Did they realize that once they found a box that was big enough, then they could compare other boxes to that box (If the red box will hold the ball, and the blue box is bigger than the red box, then the blue box is big enough to hold the ball)?  **Motivating Students**  \_x\_ Relate to Real World Most students are familiar with boxes containing consumer goods.  \_x\_ Verbal Reinforcement The teacher will monitor students’ work throughout the activity to provide reinforcement.  **Presenting Instructional Content**  \_x\_ Hands on The students can hold the ball and boxes to compare their sizes.    ***Instructional strategies:***  **Modeling and Guided Practice *–*** The teacher will monitor their 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. Ensure that each student gets to participate and contribute to the discussion.  ***What do I do if they get it?***  If students handle the activity smoothly, expose them to non-cubical boxes and ask the same question about which box(es) will hold the ball.  ***What do I do if they don’t get it?***  Offer the students lidless boxes so that students can try putting the ball in each box. | |
| **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 box is blue? Which box is red?    **Comprehension:**  Does the color of the ball matter?  Which box is the largest?  Which box is the smallest?  **Application:**  Will the ball fit in the red box? , Will the ball fit in the blue box? etc.  **Analysis:**  Which box is best for the ball? (The point of this question is for students to realize that the ball will fit snugly in one box, but will move around inside the larger boxes. Opinions may vary regarding which of those situations is better).  **Synthesis:**  **Evaluation:**  **Thinking**    \_x\_ **Practical** – We use boxes to hold things every day.  \_x\_ **Creative**– Students can compare the ball directly to each box or find a “large enough” box and compare other boxes to that box.  \_\_ **Analytical** –  \_x\_ **Research-based** – Students are personally observing the ball and the boxes.  **\*What am I going to do to give Students an opportunity to?**  **1. Generate variety of ideas:**  **2. Analyze problems from multiple viewpoints:**  **Problem Solving *Note: Teach 2 or more types of problem solving (NOTE: Clearly identify where you will use each of these in your lesson; do not just check the box!)***  **\_x\_\_** **Observing and Experimenting** Students observe the ball and the boxes. Students can hold the ball next to a box to determine if the box is large enough to hold the ball.  **\_x\_\_ Predicting Outcomes** Students have the opportunity to predict which box can hold the ball  **\_\_\_ Improving solutions**  **\_\_\_ Creating and Designing** | |

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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 four or five * Product. Students will sort a group of boxes into “those that are large enough to hold the ball” and “those that are too small to hold the ball.” | |
| **ASSESSMENT** | **Formative and/or summative assessment.** A variety of assessments, including rubrics, measure achievement of objectives and informs instruction. |
| ***Assessments: aligned with state stds; measurement criteria; measure student performance in more than 2 ways (project, experiment, presentation, essay, short answer, multiple choice test) (NOTE: Clearly identify where you will use each of these in your lesson; do not just check the box!)***  **\_\_x\_ Teacher Made Test** A future test or worksheet may reproduce this activity with pictures. Show a circle and some squares. Ask students to mark the squares which are large enough to hold the circle.  **\_\_x\_ Sorted boxes** The teacher will directly observe if the students have correctly sorted the boxes into groups of “large enough” and “too small.”  *\****Students should achieve \_\_\_\_\_% mastery of this objective: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | |
| **CLOSURE** | **Reflection/Wrap Up.** Summarizing, reminding, reflecting, restarting, connecting. |
| * ***Review/Summary: wrap up what has been learned and accomplished in the lesson (even if they are in the middle of an exercise, it is still important to summarize to the point where they are now). Ideally involve students in this synthesis.*** * ***Preview for next lesson: link what they did to day with where they are going next.*** * ***Upcoming assignments: remind them of any upcoming assignments.***   ***Today we…. Turn to your partner and…. Let’s review our I Can statements……***  **Here is your exit ticket for today**:  **Follow-up Activities/Extension *These may be designed to create a longer or more intense lesson. For example, if the class is able to cover the material in a lesson much faster than expected, extensions may prove helpful. Extensions may also be useful in various parts of a lesson where the teacher (and class) decides they should spend more time on a skill or topic.***  ***Reflection: You must reflect on every lesson you teach.*** | |

**NOTES:**

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