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| **Task 3 Selecting An Appropriate Tool**  **Lesson Goal (Big Ideas):**  NS&N   * Numbers tell how many or how much. * Number benchmarks are useful for relating numbers and estimating amounts.   Measurement   * **The use of standard measurement units simplifies communication about the size of objects.** * **We use units to make measurement comparisons simpler. This is only effective if the same unit is used for both objects and the unit is uniform.** * **There is always value in estimating a measurement, sometimes because an estimate is all you need or all that is possible, and sometimes because an estimate is a useful check on the reasonableness of a measurement.** * **Familiarity with known benchmark measurements can help you estimate and calculate other measurements**. * Units of different sizes and tools of different types allow us to measure with different levels of precision. The larger the unit the fewer units required. The smaller the unit the more units required (proportional reasoning)   Related Big Ideas: | |
| Materials:  Cuisenaire rods  Base ten materials/Centicubes  Sheet with pictures of objects to measure  Chart paper with one object per paper glued on  Sticky notes | Math Words:   * Unit * Length * Size * Number * Benchmark * Tens, ones * about |
| Getting Started:  Have half the class measure one side of the carpet with mixed Cuisenaire rods and the other half measure the other side of the carpet (of equal length), with another set of mixed Cuisenaire rods. Or, use a square Learning Carpet and have four groups working.  Draw out that we cannot really compare the measures without having a common or uniform unit. **(BIG IDEA:** **We use units to make measurement comparisons simpler. This is only effective if the same unit is used for both objects and the unit is uniform).**  Ask students “How many white Cuisenaire rods would we need to measure the carpet?”  Discuss how and why this is difficult.  **(BIG IDEA: Units of different sizes and tools of different types allow us to measure with different levels of precision. The larger the unit the fewer units required. The smaller the unit the more units required).**  Discuss which colour would be most appropriate unit to use to measure a side of the carpet.  Make the connection that a 10-rod is the same length as an orange Cuisenaire rod so we could use those if we run out. | |
| Working On It:  Estimating:   1. Have chart paper with one object clipart per paper and the actual object around the room on tables. Have sticky notes available for students to estimate how many centicubes each object will be. 2. Post chart paper estimates.   Or   1. Have students make estimates on sticky notes of one object that you are holding up such as a book? Post sticky notes. (We don’t want students to change estimates based on measurement) 2. Teacher models measuring slowly to discuss the estimates as you go. Make the connection of centicubes and base ten rods because “we know how to count by tens”   Measuring:   1. Ask pairs of students to estimate and measure some objects in the classroom with base-10 materials (10 rods and centicubes) and record their estimates and measurements on the object recording handout. Students need to make estimates and record on marker prior to any measuring. Teacher looks for estimating strategies from students to pull out during reflect and connect. | |
| **Consolidation:**   |  |  | | --- | --- | | **Guiding Questions** | **Big Ideas to Highlight** | | Why did we all get the same (or close to the same) measurement? What changed from when we measured the carpet with Cuisenaire rods to measuring our objects this time?  How did you estimate what the size was going to be?  Why do we estimate? When do we need an estimate and when do we need an actual measurement? | **We use units to make measurement comparisons simpler. This is only effective if the same unit is used for both objects and the unit is uniform.**  **Familiarity with known benchmark measurements can help you estimate and calculate other measurements**.  **There is always value in estimating a measurement, sometimes because an estimate is all you need or all that is possible, and sometimes because an estimate is a useful check on the reasonableness of a measurement**) | | |
| **Independent Practice:**  Exit Ticket: Estimate and measure the length of a line (lines on exit tickets are different lengths). | |
| **Assessment:**  Exit ticket will show students’ estimation abilities and accurate measuring. | |
| Curriculum Expectations:  Overall Expectations:   * estimate, measure, and describe length, area, mass, capacity, time, and temperature, using   non-standard units of the same size;  • compare, describe, and order objects, using attributes measured in non-standard units.  Specific Expectations:   * demonstrate an understanding of the use of non-standard units of the same size (e.g., straws, index cards) for measuring * estimate, measure (i.e., by placing nonstandard units repeatedly,without overlaps or gaps), and record lengths, heights, and distances (e.g., a book is about 10 paper clips wide; a pencil is about 3 toothpicks long) * describe, through investigation using concrete materials, the relationship between the size of a unit and the number of units needed to measure length | |