

# LEARNING PLAN

<p><b>Exploratory Activities</b></p> <p>Read aloud to the class the book <u>Measuring Penny</u> by Loreen Leedy. Create a class list of all the ways Lisa measures her dog Penny and write the tool or unit beside each one. Show the class a stuffed animal (other than a dog). Model for them the incorrect way to measure the length and height of the animal using unifix cubes by not starting at the end point and not connecting the cubes. Have students demonstrate the correct way to measure. Then introduce 4 different stuffed dogs to the children. Working in small groups, have the children measure the length of the ears and tails of the dogs using tools like Lisa: cotton swabs for the ears and dog biscuits for the tail. Also add unifix cubes to measure the length and height of the dogs. The students record their findings on paper. Compare the results of the different groups by creating a four-column table.</p>	<p><b>CONCEPT</b></p> <p>Measurement</p> <ul style="list-style-type: none"> <li>- length</li> <li>- weight</li> <li>- capacity</li> </ul> <p style="text-align: right;">(for second grade)</p>
<p><b>Concept Development Activities</b></p> <p>1. <u>“Make an Impression”</u> <u>TEXTEAMS K-2 measurement lesson</u>          Student work in pairs to use non-standard units to estimate and compare length. Each pair rolls two “snakes” of the same length with the clay. Students predict how many large paperclips long and how many small paperclips long they think their snakes are. They record their predictions. They will then measure one clay snake with the large paperclips and the other with the small paperclips by beginning at one end and pressing the paperclips into the clay to make an impression on each as they measure. Last, they record the actual measurements.</p> <p>2. <u>“Ruler Making”</u> <u>TEXTEAMS K-2 measurement lesson</u> (adaptations made)          This lesson will take place over three or more days. After doing some measuring with color tiles, the children get a strip of inch square graph paper. How could the paper strip be used for measuring instead of the color tiles? Paste several graph paper strips end to end on a sentence strip. Be sure that the first unit on the graph paper strip does not coincide with the end of the sentence strip. Students now measure with their new “ruler.” On a second day, brainstorm with the students what could be put on the ruler to help them measure. Write numbers in the center of the units on the graph paper ruler. Provide more measuring experiences. On the third day, read aloud <u>Twelve Snails to One Lizard</u> by Susan Hightower. Students create a new ruler from inch square graph paper strips pasted on a sentence strip and write the numbers at the end of the units like a standard ruler. Use the new ruler to measure lengths no longer than the ruler.</p> <p>3. <u>“Rice Babies”</u> <u>adaptation from an Every Day Counts Calendar Math in-service lesson idea</u>          For homework the preceding night, the children interview their parents to get mathematical information about their births. Using the students’ birth weights, create a class line graph. When comparing the graph, find the most common birth weight, the least weight, and the greatest weight. With student help, fill three athletic socks with rice to equal the common, least and greatest weights. Have students predict how many scoops of rice it will take to fill a sock. Put in 2 scoops, then ask if anyone would like to change his/her prediction. Model weighing the rice babies on the pound scale. Allow children to pass the rice babies around and compare their weights. A smaller sock could be filled with one pound of rice to be used as a comparison to other objects that weigh about one pound.</p> <p>4. <u>“Let Me Count the Ways”</u> <u>AIMS Primarily Bears lesson</u>          Using the rice babies, order them from the lightest to the heaviest. Model weighing objects in a pan balance using the nonstandard unit of teddy bears. Have students predict the order of the objects from lightest to heaviest. Working in groups, the students weigh the objects in teddy bears using two colors only, record the actual results, and solve the addition sentence for each object.</p>	<p><b>Materials and Resources</b></p> <p>TEXTEAMS K-2 Measurement Lessons  <u>Mathematics for the Young Child</u>, NCTM,          Chapter 11          Alief 2<sup>nd</sup> Grade Math Curriculum Guide          AIMS Primarily Bears book          AIMS Water Precious Water Book A          Modeling clay or playdough          Large and small paperclips          Color tiles          Narrow strips of construction paper in 2              contrasting colors          3 large athletic socks          About 25 lbs. of rice          1 small scoop          Balance scales          Pound scale          Unifix cubes          Containers that hold about a cup, pint, quart,              gallon, milliliter or liter          20 small glass jars of various shapes          5 pitchers          recording sheets for various lessons</p>

<p>5. <u>“How Much Space Do 50 Cubes Take?” from Alief ISD 2<sup>nd</sup> grade math curriculum guide</u>  Show the class an empty container that will hold about 10 unifix cubes. Students predict how many cubes it will hold, then count the actual amount. They work in pairs to make paper containers that will hold about 50 unifix cubes, then check the capacity by filling the containers with cubes. Compare the results and the containers.</p> <p>6. <u>“Measurement Approximation” from Alief ISD 2<sup>nd</sup> grade math curriculum guide</u>  Use an item that holds about a cup, pint, quart, gallon, milliliter, or liter to find objects in the room that hold about a cup, pint, quart, gallon, milliliter, and liter, and list them on a chart.</p> <p>7. <u>“All Bottled Up” AIMS Water Precious Water lesson</u>  Working in small groups, students compare the capacities of 4 different bottles, predicting, measuring and sequencing the various volumes of water each can hold.</p>	
<p><b>Basic Facts and Standard Algorithms Formalized</b></p> <ul style="list-style-type: none"> <li>Identify concrete models that approximate standard units of length, capacity and weight</li> <li>Measure length, capacity and weight using concrete models that approximate standard units</li> </ul>	<p><b>Originality and Creativity</b>  <b>Student Products</b></p> <p><b>Written</b></p> <ul style="list-style-type: none"> <li>Write a newspaper article announcing your birth. Be sure to include your day and time of birth, weight, and length.</li> <li>Write a “tall tale,” “heavy tale,” “long tale,” etc. of your choice.</li> </ul> <p><b>Verbal</b></p> <ul style="list-style-type: none"> <li>Interview your parent(s) for facts about your birth (date, time, weight, length). Find out the story of the day you were born.</li> <li>Make up a song or jingle about measuring. Let your song tell someone how to measure the length, weight, or capacity of something, or give helpful hints for measuring correctly.</li> </ul> <p><b>Kinesthetic</b></p> <ul style="list-style-type: none"> <li>With a partner, measure each other’s length in unifix cubes. Compare the lengths.</li> <li>Make your own balance scale.</li> </ul> <p><b>Visual</b></p> <ul style="list-style-type: none"> <li>Make a “Gallon Guy” to show the relationship of cups, pints, quarts and a gallon.</li> <li>Cut out pictures from magazines and sort them by less than a pound, about a pound, or more than a pound.</li> </ul>
<p><b>Assessment</b></p> <ul style="list-style-type: none"> <li>Each measuring activity where students are working cooperatively in groups provides an observation assessment opportunity for the teacher. Record notes and assess grades on labels or index cards on a clipboard.</li> <li>Culminating assessment: “Scavenger Hunt” from TEXTEAMS K-2 Measurement Lesson</li> </ul> <p>Measuring tools used in previous lessons are available in areas around the room. Students work in pairs to estimate and measure length, weight and capacity. The students look around the room and write an object (using red crayon) that they think will fit each category on the recording sheet. Then they check their predictions by measuring each item and recording the actual amounts in blue crayon. Students will ✓ the objects that are close to their estimate and X the ones that are “way off.”</p>	
<p><b>Related TEKS/TAKS</b></p> <p>TEKS 2.9: The student recognizes and uses models that approximate standard units (metric and customary) of length, weight, capacity and time.</p>	