



## Wizards of Wright

### Lesson: Measurement -

### Measuring Length, Width, and Height

<b>Background Info for Wizards:</b>	<p>This is one of several measurement lessons for K-2 students. They do not have to be taught in any specific order, so you will want to check with the teacher to see what they may have covered before today's visit.</p> <p>This lesson covers why measurement is important; length, width, and height; and the use of a ruler, yardstick and measuring tape.</p>
<b>Materials:</b>	<p>for Wizard to use:</p> <ul style="list-style-type: none"> <li>- ruler</li> <li>- yard stick</li> <li>- tape measure</li> </ul> <p>pictures to show:</p> <ul style="list-style-type: none"> <li>- pencils</li> <li>- trees</li> <li>- roads</li> </ul> <p>for Students:</p> <ul style="list-style-type: none"> <li>- What is the Arrow Measuring? worksheet (one for each student)</li> <li>- bag of 25 counting cubes and 1 counting card (for each student)</li> <li>- Measuring our School Supplies worksheet (one for each student)</li> </ul>
<b>Lesson Time:</b> 75-90 minutes	<p>Introduction: 10 minutes          Guided Lesson: 10 minutes          Wizard Demonstration: 10 minutes          Student Activity #1: 10-15 minutes          Student Activity #2: 15-20 minutes          Student Activity #3: 15 minutes          Conclusion: 5 minutes</p>
<b>Learning Targets:</b>	<p>Students will be able to distinguish among inches, feet, and centimeters.</p>



	<p>Students will recognize the different sizes of objects, compare them, and connect those differences to length, width, and height.</p> <p>Students will understand the difference among a ruler, yardstick, and measuring tape.</p> <p>Students will use standard and non-standard units of measurement to identify the size of an object.</p>
<p><b>Introduction for Students:</b> 10 minutes</p>	<p><b>Say to the students:</b> Today, we will be practicing measurement.</p> <p><b>Ask students:</b> What does it mean to measure something?</p> <ul style="list-style-type: none"><li>- Measurement is finding a number that shows how much there is of something.</li></ul> <p><b>Say to the students:</b> Sometimes, people ask questions like:</p> <ul style="list-style-type: none"><li>- What size shoe do you wear?</li><li>- How tall are you?</li></ul> <p>To answer these questions, a measurement needs to be taken.</p> <p><b>Ask students:</b> To find your shoe size, what would you measure?</p> <ul style="list-style-type: none"><li>- the length of your foot</li><li>- and you might need to know how wide your foot is</li></ul> <p><b>Ask students:</b> How would you find out how tall you are?</p> <p>Show the students your ruler and point out all the different lines on a ruler.</p> <p><b>Say to the students:</b> Sometimes we measure in inches.</p> <ul style="list-style-type: none"><li>- Hold the ruler against something (for example the lesson binder, or a students' book). Measure the binder and tell the students that it measured X inches.</li></ul> <p><b>Say to the students:</b> Sometimes we measure in centimeters, which is smaller than inches.</p> <ul style="list-style-type: none"><li>- Show them the smaller lines on the ruler.</li><li>- Measure a paperclip or a penny and tell the students that it measured X centimeters.</li><li>- Show them that measuring the book or binder in centimeters wasn't as easy, and that measuring something very small in inches may not be very accurate.</li></ul> <p><b>Say to the students:</b> Sometimes we measure in feet, which is bigger than inches.</p>



	<ul style="list-style-type: none"><li>- You can use the meter stick or show them how to measure with your actual foot.</li><li>- Measure across the classroom and tell the students that it measured X feet.</li></ul>
<p><b>Guided Lesson:</b> 10 minutes</p>	<p><b>Say to the students:</b> The world is full of things of different sizes. There are three specific words we use when talking about measurement.</p> <p><b>Ask students:</b> Can anyone tell me what LENGTH means? How about WIDTH? How about HEIGHT? (Call on a few students.)</p> <p>How would you describe the size of a giraffe to your friends? (Call on a few students. If they use height in their answer, make a big deal.)</p> <p>Now, how would you describe the size of a snake? (Call on a few students. If they use length in their answer, make a big deal.)</p> <p>How about an elephant? How would you describe an elephant's size? (Call on a few students. If they use width in their answer, make a big deal.)</p> <p><b>Ask the students to fill in the blank of the sentence you say:</b></p> <ol style="list-style-type: none"><li>1. The length of an object tells us how _____ it is.</li><li>2. The height of an object tells us how _____ it is.</li><li>3. The width of an object tells us how _____ it is.</li></ol> <p>Show the students the picture of the pencils. <b>Ask students:</b> Who can describe the length of these pencils? Can you use the words long and short in your answer?</p> <p>Show the students the picture of the trees. <b>Ask students:</b> Who can describe the height of these trees? Can you use the words tall and short in your answer?</p> <p>Show the students the picture of the roads. <b>Ask students:</b> Who can describe the width of these roads? Can you use the words wide and narrow in your answer?</p>
<p><b>Wizard Demonstration:</b> 10 minutes</p>	<p><b>Say to the students:</b> I want to show you that I have a few different measuring tools with me. Ask students if they can identify the items.</p> <ul style="list-style-type: none"><li>- ruler</li><li>- yard stick</li><li>- measuring tape</li></ul>



	<p><b>Ask students:</b> These are all similar because they will help me measure things. But what makes these things different?</p> <ul style="list-style-type: none"><li>- discuss briefly when a ruler would be used instead of a yardstick, and vice versa</li><li>- show the versatility of the measuring tape and its flexibility</li></ul> <p>Take a few minutes and go around the classroom giving examples of how long, tall, or wide different objects are.</p> <ul style="list-style-type: none"><li>- Have students tell you if you are measuring length, height, or width.</li><li>- Use the words inches, centimeters, and feet when you can.</li></ul>
<p><b>Student Activity #1:</b> 10-15 minutes</p>	<p>Tell the students that they will all need a pencil.</p> <p>When they are ready, pass out the student worksheet – <u>What is the Arrow Measuring?</u></p> <ul style="list-style-type: none"><li>- This is something you can all do together.</li></ul> <p><b>Say to the students:</b> Let's look at these pictures. Let's start with the picture of the fire truck. Who can tell me what word we should circle? Is the arrow measuring length, width, or height?</p> <ul style="list-style-type: none"><li>- Right. It is length.</li><li>- Everyone should circle the word LENGTH under the firetruck. (Wander around and make sure everyone is doing that.)</li></ul> <p>Now let's look at the picture of the little boy? Who can tell me what word we should circle? Is the arrow measuring length, width, or height?</p> <ul style="list-style-type: none"><li>- Right. It is height.</li><li>- Everyone should circle the word HEIGHT under the boy. (Wander around and make sure everyone is doing that.)</li></ul> <p>How about the building? Who can tell me what word we should circle? Is the arrow measuring length, width, or height?</p> <ul style="list-style-type: none"><li>- Right. It is height.</li><li>- Everyone should circle the word HEIGHT under the building. (Wander around and make sure everyone is doing that.)</li></ul> <p>Now, let's look at the last picture, the rocket ship. Who can tell me what word we should circle? Is the arrow measuring length, width, or height?</p> <ul style="list-style-type: none"><li>- Right. It is width.</li><li>- Everyone should circle the word WIDTH under the rocket. (Wander around and make sure everyone is doing that.)</li></ul>



	<p>Ask the teacher if the students should put their papers in their desks, or elsewhere.</p>
<p><b>Student Activity #2:</b> 15-20 minutes</p>	<p>Give each student a bag of 25 counting cubes, and three counting cards.</p> <p><b>Say to the students:</b> Under each picture are empty boxes. Use the cubes in your bag, to fill in each box, so you can see how long the object is.</p> <p>Give students time to work through as many as they can. You can have them switch cards if it goes quicker than expected.</p> <p>Have students put all the counting cubes back into the bag. Collect the bags and cards before moving on.</p>
<p><b>Student Activity #3:</b> 15 minutes</p>	<p>Tell the students that they will all need a pencil and a pair of scissors for this activity.</p> <p>Demonstrate for the students what they will be doing. Explain that they need to cut out the ruler at the bottom of the page, then use that ruler to measure the objects on the page.</p> <p>Point out the line where they need to write how many inches the object is.</p> <p>Give the students time to complete the activity. Have them put everything away before moving on.</p>
<p><b>Conclusion:</b> 5 minutes</p>	<p>Have students point out things in the room that we would use if we were measuring height. Then length. Then width.</p> <p>Have a student tell you the difference between: tall and short; long and short; wide and narrow</p> <p>Measure something in the room and have students tell you if the number would be in centimeters, inches or feet.</p>

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