



Wizards of Wright

Lesson: Measurement – Things We Measure

<p>Background Info for Wizards:</p>	<p>Understanding the concepts of length, weight, time, temperature, and volume are crucial for elementary grades. This lesson focuses on the standards for measurement grades 3-5.</p> <p>The students will visit 5 different stations. It's important to have the stations set up before you begin the lesson.</p>
<p>Materials:</p>	<p>5 Station cards numbered 1-5 5 trays (1 for each station) empty jug for water (fill pitcher at station 1 before the students begin)</p> <p>Station Worksheets (1 per student) clipboards</p> <p><u>Station 1: Measuring Liquid</u> instruction card 1 pitcher of water the jug with the yellow lid the jug with the green lid 1 cup measuring cup teaspoon paper towels</p> <p><u>Station 2: Measuring Weight</u> instruction card analog scale digital scale 8 different weights</p> <p><u>Station 3: Finding Area</u> instruction card dry erase board (small) dry erase markers and eraser 3 rulers multiplication chart 3 various sized wooden blocks labeled 1, 2, & 3</p>



	<p><u>Station 4: Measuring Time and Temperature</u> instruction card analog clock digital clock 1 thermometer – shows both F and C</p> <p><u>Station 5: Measuring Length and Width</u> instruction card 3 rulers 3 measuring tapes 1 set of Cuisenaire Rods 1 large tree section</p>
<p>Lesson Time: 55-60 Minutes</p>	<p>Introduction: 5 minutes Wizard Demonstration: 10-15 minutes Student Stations: 30 minutes Conclusion: 10 minutes</p>
<p>Learning Targets:</p>	<p>Students will gain a better understanding about the modes of measurement found in their standards through hands on experience.</p> <p>Students will have a better understanding of liquid measurement, weight measurement, time and temperature measurement, and length measurement.</p> <p>Students will practice finding area.</p>
<p>Introduction for Students: 5 minutes</p>	<p>Ask the students: Who can tell me what the word measurement means?</p> <ul style="list-style-type: none"> - Measurement is finding a number that shows the amount of something. <p>What kinds of things have you measured before? What kinds of tools have you already learned to measure with?</p> <ul style="list-style-type: none"> - <i>Hopefully the student will be familiar with using a ruler and possibly a tape measure and yardstick.</i> - <i>Guide them to discuss that we also use scales to measure something – sometimes it's people, and sometimes it's food when we are cooking.</i> - <i>Speaking of cooking, ask them what someone in the kitchen might use to measure ingredients.</i> <p>Ask the students: What type of measurement would you need to find out someone's shoe size? And what would you use?</p> <ul style="list-style-type: none"> - To find shoe size, you would need to measure the length and width of a foot.



	<ul style="list-style-type: none"> - You could use a ruler or a tape measure, or one of those things in a shoe store that you put your foot in. (It's called a Brannock Device.) <p>Ask the students: What type of measurement would you need to find out how tall someone is? And what would you use?</p> <ul style="list-style-type: none"> - To find out how tall you are, you would measure your height. - You should probably use a yard stick. You could use a ruler, but that would be difficult. <p>Ask the students: How would you measure how much water is in a swimming pool?</p> <ul style="list-style-type: none"> - The amount of water in a swimming pool is measured by volume, which would be the number of gallons. <p>Ask the students: What type of measurement would you need to find out how heavy something is? And what would you use? Is it different if it's a ball, a balloon, or a packed suitcase?</p> <ul style="list-style-type: none"> - To find out how heavy something is, you would need to weigh it. - You would use a scale. <p>Ask the students: How would you measure the temperature outside?</p> <ul style="list-style-type: none"> - To find out the temperature, you would need to be able to read a thermometer. <p>Say to the students: From our examples it's easy to see that we don't just use measurement in math or science class. It is important to learn how to measure correctly, and what tools to use because we measure every day. Whether you are cooking, shopping, driving, or building something, you will need to know how to measure things.</p> <p>Ask the students: Can you think some other things that we measure?</p>
<p>Wizard Demonstration: 10-15 minutes</p>	<p>Say to the students: In a few minutes, you will begin working at the different stations you see set up around the room. To avoid a backup, you will need to stay at your station until you are told to move to the next station.</p> <p>Say to the students: At each station, you will have a few challenges to work through. You will have a worksheet to write your answers on, and a clipboard to use if you need it.</p> <p>Say to the students: There is an instruction card at each station that will tell you what to do. But, let me briefly show you what you will be measuring at each station.</p>



Begin moving through the stations.

Say to the students: This is Station 1. Here you will be measuring liquids. There are some jugs, a measuring cup, and a measuring spoon.

- In the US we use the standard system, but in most other countries, they use the metric system.
- It's important for us to be able to understand and use both.
- You'll see both on some of these tools, but your worksheet will tell you what to do.

Ask the students: What do I need you to be really careful with when you are measuring at station 1?

- SPILLING!

Say to the students: Exactly! Accidents do happen, but less happen when we are careful. When you're measuring, please work on the tray, so in case there is a spill, we will have less to clean up. And here are the paper towels in case we need them.

Say to the students: This is Station 2. You will be measuring weight at this station. Here we have some weights and 2 kinds of scales. This one is called an analog scale, and this is a digital scale.

Ask the students: Has anyone ever used either of these kinds of scales?

Demonstrate how to use each type of scale.

Say to the students: I'll want you to tell me later which type of scale you think is easier to use.

Say to the students: This is Station 3. Here you will find the area of an object. Area is the amount of space that an object takes up.

Ask the students: Have you ever worked with area before? (*This is normally taught sometime in 3rd or 4th grade.*)

Say to the students: If you haven't, there are directions here at the station that will help you work through it.

There are 3 blocks here to work with, a dry erase board, markers, and eraser for you to do your work on, rulers, and a multiplication chart if you need it.

Say to the students: This is Station 4. You will measure time and temperature at this station.

There's an analog clock, and a digital clock, and a thermometer that shows both Fahrenheit and Celsius.

- *Students may ask why we have Fahrenheit and Celsius. Explain, just like with the metric system discussed with station 1, we live in very mobile world, and we are better off understanding and being able to use both systems.*



	<p>Ask the students: Who can tell me about some differences between these clocks?</p> <p>Say to the students: This is Station 5. At this station you will measure <u>length</u> and <u>width</u>. You'll find rulers and measuring tapes, these Cuisenaire Rods, and these tree pieces.</p> <ul style="list-style-type: none">- Show students the key for the Cuisenaire Rods.
<p>Student Stations: 30 minutes</p>	<p>(Students will be working in small groups for this activity. Groups should be just 2-3 students. Ask the teacher if the groups have already been created. If not, wait while he or she does this.)</p> <p>Give each student an answer sheet and a clipboard.</p> <p>Remind students that once you send them to a station, they are to work together, make sure their answer sheets are filled out, and wait for directions before rotating to the next station.</p> <p>Assign each group a station to start at.</p> <p>IMPORTANT: Remember to keep an eye on time, and having groups rotate, even if you are answering questions or cleaning up spills. Ask the teacher to help with this.</p> <p>Try to average about 5 minutes for each rotation.</p>
<p>Conclusion: 10 minutes</p>	<p>Reiterate that measurement is finding a number that shows the amount of something.</p> <p>Review measurement tools, and what they measure, as you go over the answers from each station with the class.</p>

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