



Wizards of Wright

Lesson: Measurement - Inches and Centimeters

<p>Background Info for Wizards:</p>	<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 measuring with inches, feet, and centimeters while using rulers, tape measures, and yardsticks.</p>
<p>Materials:</p>	<p>for the Wizard:</p> <ul style="list-style-type: none">- a copy of the poem <i>One Inch Tall</i> by Shel Silverstein- 1 long piece of string- 1 tape measure- 1 yardstick <p>for each pair:</p> <ul style="list-style-type: none">- a clipboard- one small block (measuring 1")- a ruler- measurement sheet <p>a ruler for each student</p> <p>worksheets for each student:</p> <ol style="list-style-type: none">1. We Can Measure Together!2. We Can Measure Inches and Centimeters!3. We Can Measure Different Distances!
<p>Lesson Time: 90 minutes</p>	<p>Introduction: 10 minutes Student Activity #1: 5-10 minutes Guided Lesson #1: 10 minutes Student Activity #2: 10-15 minutes Guided Lesson #2: 10 minutes Student Activity #3: 10-15 minutes Guided Lesson #3: 10 minutes</p>



	<p>Student Activity #4: 10-15 minutes Conclusion: 5 minutes</p>
<p>Learning Targets:</p>	<p>Students will understand the difference among a ruler, yardstick, and measuring tape.</p> <p>Students will be able to use different tools to measure objects.</p> <p>Students will be able to distinguish among inches, feet, and centimeters.</p>
<p>Introduction for Students: 10 minutes</p>	<p>Begin the lesson by reading the poem <i>One Inch Tall</i> by Shel Silverstein to the class.</p> <p>Show the students (with your fingers is fine) how big an inch is. Ask them to do the same.</p> <p>Ask students: Can you look around the classroom and name some items that have a length of about one inch. (Call on several students.)</p> <p>Ask students: Think about the poem that you just heard.</p> <ul style="list-style-type: none">- In what ways would your life be affected if you were only one inch tall?- What activities would be difficult or easy to do?- What part of your life would need to change to accommodate your new height?
<p>Student Activity #1: 10 minutes</p>	<p>(Students will be working in small groups for this activity. Groups should be 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 group a small block (measuring one inch), a clipboard, and the measurement sheet. Give students a few minutes to move around the classroom and see how many items they can find that are approximately the same length as the block. Encourage them to record their discoveries on the measurement sheet.</p> <p>When everyone has finished, or after a few minutes, ask everyone to take their seats again.</p> <p>Have each pair share 1 thing on their list.</p> <p>Collect the blocks and clipboards before moving on to the next activity.</p>



	<p>Say to the students: When grown-ups want to know how long an item is, they do the same thing. But, instead of using blocks they use rulers or measuring tapes.</p>
<p>Guided Lesson #1: 10 minutes</p>	<p>Say to the students: I'm going to pass out some materials, but I need to set some ground rules before I give you these rulers to use. The rule is that rulers are for measuring, not sword play or spinning. The consequence is that if you do not use the ruler correctly, I will collect it.</p> <p>Pass out a ruler to each student.</p> <p>Say to the students: When we use a ruler to measure, we start at the 0. If there isn't a 0, we start measuring where the tick marks are on the ruler, not just the beginning of the plastic.</p> <p>Have students point to the beginning point on the ruler, while you go around and make sure they are on the right spot. (Ask the teacher to help with this so you can get to/correct everyone quickly.)</p> <p>Say to the students: When we use a ruler to measure, we will measure how many inches something is. We can also measure in centimeters.</p> <p>Say to the students: An inch is a small unit of length. (Hold up a ruler and show the students where the inches are marked. "This is 1 inch. This is two inches. This is three inches." And so on.) (They should be able to understand halfway between the inches.)</p> <p>Now have the students show you the inches on their rulers. Go around and make sure they are using the correct side of the ruler.</p> <p>Show students the other side of the ruler and point out these lines measure much closer together.</p> <p>Say to the students: These numbers are measuring centimeters. Hold up a ruler and show the students where the centimeters are marked. "This is 1 centimeter. This is two centimeters. This is three centimeters." And so on.)</p> <p>Now have the students show you the centimeters on their rulers. Go around and make sure they are using the correct side of the ruler.</p>



Student Activity #2:

15 minutes

(Students will be working in small groups for this activity. Groups should be 2-3 students. Ask the teacher if the groups have already been created. If not, wait while he or she does this.)

Tell students they will need a pencil and a crayon for this activity. As well as the rulers you have already passed out. Wait for them to get their materials ready.

Give each student a worksheet: We Can Measure Together!

Say to the students: You will be working with your partners to do this measuring, but each of you can record the answer on your own papers.

Point out to the students that they will be measuring in inches, and then in centimeters.

Ask them to show what side of the ruler to use for inches, and what side to use for centimeters.

As they are working, wander around and double-check that the correct side of the ruler is being used.

When students are finished, ask groups to share their measurements. If any are drastically off, take a moment to show them how to measure it correctly.

Guided Lesson #2:

10 minutes

Say to the students: For our next activity, I will need 2 volunteers. (Ask the teacher to pick 2 students to come up to tell you.)

Give each student an end of the string to hold and ask them to stretch out until the string is straight.

Say to the students: This string might be helpful in measuring, but what do we need to know before we can use the string as a form of measurement?

- Lead the students to saying that we would need to know how long the string is.

Ask students: How do we find out how long the string is?

- When they suggest measuring with a ruler, show them the difficulty that comes with measuring something this long with a ruler.

Introduce the tape measure and discuss how and why it will make it a lot easier. Discuss flexibility.



Student Activity #3:

15 minutes

(Students will be working in small groups for this activity. **Groups should be 2-3 students.** Ask the teacher if the groups have already been created. If not, wait while he or she does this.)

Tell students they will need a pencil for this activity.
As well as the rulers you have already passed out.
Wait for them to get their materials ready.

Give each student a worksheet: We Can Measure Inches and Centimeters!

Say to the students: You will be working with your partners to do this measuring, but each of you can record the answer on your own papers.

Point out to the students that they will be measuring in inches, and then in centimeters.

Ask them to show what side of the ruler to use for inches, and what side to use for centimeters.

As they are working, wander around and double-check that the correct side of the ruler is being used.

When students are finished, ask groups to share their measurements. If any are drastically off, take a moment to show them how to measure it correctly.

Collect the rulers from the students.

Guided Lesson #3:

10 minutes

Ask the students: Does anyone know what we call 12 inches?

- It's called a foot.
- Show them a foot on their ruler.
- Have them show you a foot on their ruler.

Say to the students: Hundreds of years ago, when measurements had to be made there wasn't always a measuring device around. Therefore, people used what they had available to them. In many cases people would pace out a distance by walking it and give the unit of measure in "feet".

- Show the students how to pace out the size of the classroom.
- Have them count the "feet" as you walk it.
- Have a student pace out the size of the classroom, and have the class count the "feet".
- Hopefully the numbers are very different.



	<p>- Ask the students if they can explain why.</p> <p>Show the students the yardstick. Ask the students: Does anyone know what this is called?</p> <p>Say to the students: When we use a yard stick to measure, we will measure how many inches something is. We can also measure in feet, and in meters or yards.</p> <ul style="list-style-type: none">- Show the students how many inches we see on a yardstick.- Explain that 36 feet is also called 3 feet and is also called a yard.- Show the students something in the room that you would use a yard stick to measure.- Show the students something in the room that a yard stick would not be good to measure.- Ask the students for their own examples.
<p>Student Activity #4: 15 minutes</p>	<p>(Students will be working in small groups for this activity. Groups should be 2-3 students. Ask the teacher if the groups have already been created. If not, wait while he or she does this.)</p> <p>Tell students they will need a pencil for this activity. Wait for them to get their materials ready.</p> <p>Give each student a worksheet: We Can Different Distances!</p> <p>Say to the students: You will be working with your partners to do this, but each of you can record the answer on your own papers.</p> <p>As they are working, wander around and help them come up with good ideas if they are stuck.</p> <p>When students are finished, ask groups to share their ideas.</p>
<p>Conclusion: 5 minutes</p>	<ul style="list-style-type: none">- Review with students the difference between an inch and a centimeter, and an inch and a foot.- Review with students the difference between a ruler, a measuring tape, and a yardstick.- Review with students the sides of a ruler, what they are called, and how they are used.

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