

**Lecture: *Measuring the Width of a River (Flussbreite messen)***

**Objectives**

- The children can estimate widths and lengths.
- The children can measure widths and lengths using a tape measure.
- The children know what a meter is.
- The children can measure widths and lengths using steps and arm lengths.

**German language goals**

- The children can count from 1-20.
- The children can ask and reply to the question: *Wie alt bist du? Ich bin ... Jahre alt.*
- The children can expand their active and passive German vocabulary (*das Maßband, die Zahlen, zählen, der Meter, die Länge, die Breite*).

**\* Although the language of instruction is English, the lesson plan sequences highlighted in orange are taught in German.**

**Materials**

- Toy cars
- Laptop and projector
- Audio speakers
- Magnets
- Whiteboard markers/chalk
- Small ball
- *Color review (Wiederholung Farben)* image and word cards
- Tape measure (feet and meters)
- *Estimating and Measuring (Schätzen und Messen)* worksheet
- "My word bank sheet: *Measuring the Width of a River (Flussbreite messen)*"
- Portfolios

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Time	Social Form	Learning Objective	Content	Materials
6 min	Interactive classroom dialogue	<p>The children can describe the color of objects.</p> <p>The children review the German words they have already learned (<i>der Ball, der Würfel, die Maus, die Ente, der Elefant, das Meer</i>).</p>	<p>The instructor welcomes the children and asks them to get into a circle around the board.</p> <p><i>The instructor says: Before we start with today's lecture, we are going to review the colors in German. What is the German word for colors? The children answer. The instructor points to different objects in the classroom, and the children name the colors in German (rot, blau, schwarz, grün, gelb, orange, weiß, grau).</i></p> <p><i>The instructor puts up image and word cards of different objects in the classroom. The instructor divides the children into pairs and invites them to go around to the pictures and describe the color of the objects they see. The instructor models one example and encourages the children to describe the objects in a sentence, e.g., Der Ball ist rot. (der Ball: rot; der Würfel: weiß und schwarz; die Maus: orange, die Ente: gelb; der Elefant: grau; das Meer: blau). The instructor supports the children and corrects their pronunciation. After 3 minutes the instructor asks them to return to their seats.</i></p> <p><i>The instructor shows a tape measure and asks: What color is this? The children answer.</i></p>	<p>Magnets</p> <p><i>Color review (Wiederholung Farben)</i></p> <p>image and word cards;</p> <p>Tape measure (feet and meters)</p>

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			<i>The instructor explains: Exactly. Today we are going to work with this object in our lecture.</i>	
10 min	Interactive classroom dialogue	<p>The children know the words <i>das Maßband, die Länge, die Breite</i> and <i>der Meter</i> and can pronounce them correctly.</p> <p>They know that length and width is measured in meters in Germany.</p> <p>They know what one meter is.</p> <p>They can estimate the width and length of a room.</p> <p>They know how to measure the width and length of a room using a tape measure.</p> <p>They can compare their estimate with the measured width and length.</p>	<p>The instructor asks: What is this? <b>The instructor introduces the German name and writes <i>tape measure/das Maßband</i> on the board. The children repeat the German word.</b></p> <p>The instructor asks: <i>What can we measure with this tape measure?</i> The instructor writes the answer on the board: length and width. <b>The instructor adds the German words <i>die Länge/die Breite</i>.</b></p> <p>The instructor says: <i>We can use this instrument to determine precisely how long and how wide something is. In the US we measure in feet, however, in Germany we use a different system. Do you know the metric system?</i> The instructor collects the children's ideas and continues: <i>Exactly, in Germany we measure, for example, in meters. The instructor introduces the German word <i>der Meter</i> and writes it on the board. The instructor continues: <i>One meter equals approximately three feet.</i></i></p> <p><u>Note:</u> One meter equals 3.28084 feet, but we are using 3 feet in our lecture to make calculations easier. The instructor shows 1</p>	<p>Whiteboard markers/chalk</p> <p>Magnets</p> <p>Tape measure (feet and meters)</p> <p><i>Estimating and Measuring (Schätzen und Messen)</i> worksheet</p>

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			<p>meter on a tape measure and writes the information on the board.</p> <p>The instructor continues: <i>Now we know how people measure in Germany. But what if we don't have a tape measure? How do we know how long or how wide something is? In that case we can't measure it. We must estimate the length and the width.</i></p> <p>The instructor hands out the <i>Estimating and Measuring</i> worksheet and invites the students to estimate the length and width of the classroom. The children estimate how long and how wide the classroom is and record their ideas on the worksheet. The instructor collects a few estimates on the board and converts them from feet to meters. The instructor writes the conversions on the board. Then the children measure the room with a tape measure in feet and meters, and record the measurements on the worksheet. They compare their estimates with their measurements.</p>	

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Time	Social Form	Learning Objective	Content	Materials
10 min	Interactive classroom dialogue	The children know that an adult's large step and an extended arm are approximately one meter.	The instructor asks: <i>We can also measure length and width without a tape measure. Do you have an idea of how we could do this?</i> The children express their assumptions or share their experiences. Maybe they have already seen how someone has measured length and width with finger lengths, steps, or arm lengths. The instructor moderates the discussion and then says: <i>Before, we measured how long and how wide our classroom is using a tape measure. Now we will measure the classroom using a different method. I will walk along the walls with large steps and everyone will count the number of steps I take.</i> The instructor and the children write the number of steps for the length and the number of steps for the width of the classroom on the board. Then the instructor asks the children to measure how large his or her steps are using the tape measure: approximately 1 meter or 3 feet. The instructor and the children determine together that the length and width can also be measured pretty precisely using this method since an adult's large step is approximately 1 meter or 3 feet.	Tape measure (feet and meters)

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			The instructor and the children conduct the same experiment, but the instructor measures the length of the classroom's wall with an extended arm. The instructor and the children determine together that the length between the center of the chest and the fingertips of an extended arm is also approximately 1 meter or 3 feet. They conclude that this method can also be used to measure length and width.	
5 min	Interactive classroom dialogue	The children know how to measure the width of a river using steps and arm lengths.	The instructor says: <i>Now let's watch a video in which the width of a river is measured without a tape measure, just like we did (minute 1:23-3:29).</i> The instructor and the children watch the video. Afterwards, the instructor asks: <i>How does Christoph measure the width of the river in the video?</i> The children explain what they have learned in their own words. The instructor reinforces the fact that you can get pretty precise measurements using steps and arm lengths.	Laptop and projector Audio speakers

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10 min	Interactive classroom dialogue	<p>The children can count from 1-20 in German.</p> <p>The children can ask and reply to the question: <i>Wie alt bist du? Ich bin ... Jahre alt.</i></p>	<p>The instructor explains that the children have seen some German numbers in the film and asks if anyone remembers a number. The instructor then writes the numbers 1-20 on the board and introduces the German numbers. The children repeat the numbers. To practice the numbers, the children and the instructor form a circle in the classroom. The instructor starts counting with 1 and then throws a small ball to one child, inviting the child to continue counting. They count to 20 and then backwards to 1.</p> <p>The instructor says: <i>Ich bin ... Jahre alt</i> and writes the sentence on the board. The instructor then asks: <i>Wie alt bist du?</i> The instructor records the questions on the board and asks 2-3 children to answer the question. Then the instructor invites the children to ask each other about their age and line up according to their age (the youngest child stands to the far left, the oldest child stands to the far right).</p>	<p>Whiteboard                      markers/chalk                      Small ball</p>

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Time	Social Form	Learning Objective	Content	Materials
12 min	Group work	<p>The children can measure the length and width of objects using steps and arm lengths.</p> <p>The children can count in German.</p>	<p>The instructor and the children apply what they have learned in the video by working as field researchers. They continue working on the <i>Estimating and Measuring</i> worksheet, and together as a group they fill out the worksheet in three steps:</p> <ol style="list-style-type: none"> <li>1. They write down what they want to measure (e.g., <i>How wide is the playground? How long is the hallway? ...</i>)</li> <li>2. They write down their estimates. The instructor helps to convert their estimates to meters.</li> <li>3. They get up and test out their estimates using steps or arm lengths and write down these results as well. The instructor helps the children to convert their measurements to feet.</li> </ol> <p><u>Note:</u> Since one meter equals one adult step or arm length, the instructor needs to measure, and the children need to count the number of steps/arm lengths.</p> <ol style="list-style-type: none"> <li>4. They compare their estimates and measurements.</li> </ol> <p><u>Note:</u> The instructor encourages the children to count in German during this activity to practice the German numbers.</p>	<p><i>Estimating and Measuring (Schätzen und Messen)</i> worksheet</p>



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5 min	Interactive classroom dialogue	The children reflect on what they learned in today's lesson and repeat the German words they learned today.	The instructor and the children end the unit with a reflection round in which they discuss what they learned. <b>The instructor encourages the children to repeat the German words from the lesson. Each child then fills out "My word bank sheet: <i>Measuring the Width of a River (Flussbreite messen)</i>" for this lecture and writes down the German words and chunks they learned in today's lesson.</b>	"My word bank sheet: <i>Measuring the Width of a River (Flussbreite messen)</i> "
3 min	Interactive classroom dialogue	The children know how they can continue working on the topic.	The instructor encourages the children to complete the online tasks for this lecture at home. The instructor previews the topic of the next lesson and ends the lesson. The children file today's materials in their portfolios.	Portfolios Worksheets