

Kindergarten: Mathematics
Unit 6: Exploring Measurement
Formative Assessment Task – Assessment FOR Learning
Lesson Title: Comparing Lengths

<p>Formative Assessment Task</p>	
<p><i>Should highlight key mathematical ideas for students and make visible students' misconceptions, incomplete understandings, and/or strategic solution strategies.</i></p> <p><i>Should afford opportunities to analyze student work for aspects around which to reengage (e.g., common misconceptions or innovative thinking).</i></p> <p>Material:</p> <ul style="list-style-type: none"> • Assessment Recording Form_Comparing Lengths 	<ul style="list-style-type: none"> • The focus of this assessment is students' ability to compare the length or height of two objects. Teachers will look for answers to the following questions: <ol style="list-style-type: none"> (1) What strategies do the students use, e.g., do they line up the ends of the objects before comparing them? (2) Do students use the vocabulary of comparing length, e.g., taller, shorter, higher, longer? (3) Can students explain how they know that one object is taller, etc., than another object? • Teachers will assess children's understanding of linear measurement concepts in multiple ways that fall into three categories: <ol style="list-style-type: none"> (1) Observing and interacting with students during lessons and when they are in centers (including non-math centers like a "construction center" where towers and roads and trains can be compared) (2) Collecting a sample of students' written recording of their work (3) Using an interview protocol for a one-on-one assessment • The following material has been provided <ol style="list-style-type: none"> (1) An Assessment Recording Form for taking notes during informal interactions (2) Several worksheets for students to use (See Independent Practice) (3) an interview protocol for one-on-one assessment when you don't feel you have clear or enough information on a student's understanding or skills (See Below) • Student-Teacher Dialogue (one-on-one assessment) NOTE: A one-on-one interview is necessary only if you have not been able to collect enough information about a student's understanding of linear measurement through ongoing observations and student work samples. This may include English Language Learners whose fragile grasp of the vocabulary of measurement may mask their understanding of measurement concepts. <ol style="list-style-type: none"> (1) Display two objects (one that is longer than the other or almost the same length) and ask: <ul style="list-style-type: none"> - Which object is longer (shorter)? - Show and tell me why. (2) Display five sets of objects to make sure you are getting as much information as you need. • Note which students are struggling with comparing the length/height of two objects. Consider that they may be struggling <ul style="list-style-type: none"> - because they are unsure of the language, - because they don't understand the need to have the ends of both objects even before they can compare - because they have difficulty visualizing relationships <p>Knowing the source of their difficulty will help you determine what support they need.</p>
<p>Re-engage</p>	
<p><i>Select students who can share representative solutions with the class that can deepen students' thinking</i></p>	<ul style="list-style-type: none"> • Select students periodically to share some sorting they did in a center. Have them explain to the class what they did. If possible, select students who selected items that students have not usually chosen as a way to stretch the thinking of others in the class.

<p><i>around key mathematical ideas.</i></p>	<ul style="list-style-type: none"> • Another re-engagement opportunity is during a class comparing activity. This is an opportunity to ask questions to model the thinking you want students to do when they are working independently, alone or with a partner. • Ask students to talk about objects whose length would be difficult to measure (e.g., specific items that are out of reach or items like balls). 																						
<p>Summarize</p>																							
<p><i>Engage the class in discussing their findings from this task and to synthesizing their thinking.</i></p>	<ul style="list-style-type: none"> • Ask students to talk about what they need to remember when they are comparing the length of two objects. As one student shares an idea, have another student restate the idea in his/her own words. 																						
<p>Independent practice</p>																							
<p><i>Give students a new mathematical task or set of tasks designed to support the development of lasting understanding,</i></p> <p>Material:</p> <ul style="list-style-type: none"> • What's Longer? What's Shorter? • What's Taller? What's Shorter? • These are Taller • These are Shorter • Three Bear Compare worksheet • Taller, Shorter, Same Height worksheet • 1-inch grid paper 	<ul style="list-style-type: none"> • Once these activities have been introduced, they will fit well in centers for independent practice. • Comparing Objects by Height or Length Materials: sorting mat, paint stirrer, dowel stick, Cuisinaire rod or other item to use for comparing with other items (not a ruler or other object containing numbers) <ul style="list-style-type: none"> - With a partner, walk around the room looking for items that are longer/taller or shorter than the stick/rod - Depending on the size of the rod, students can place items on a sorting mat or draw a picture/write the name of the item on a sorting worksheet • Who is Taller? Who is Shorter? Material: a dowel stick (or other narrow firm item) about 1 yard long <ul style="list-style-type: none"> - Hold the stick up with the end resting on the floor. - One at a time, have students stand next to the stick. Have the class decide if the student is taller than, shorter than, or the same height as the stick, - Continue until each student has been compared. - Suggestions for using the information: <ul style="list-style-type: none"> o Take a class photo of students lined up on one side or the other of the stick (or holding/clustering around the stick if they are the same height). Post in the class. o Create a 2-3 column bar graph to display the data collected. o Have students analyze and interpret the data. • Name Compare Materials: linking cubes <ul style="list-style-type: none"> - Have two students construct a train with one cube for each letter in their name. Compare the cubes that represent their names. - Have them each draw a picture to show the comparison - They may write a sentence below their picture, e.g., <i>My name is ____ than ____'s name.</i> • Variation: Materials: 1-inch grid paper <ul style="list-style-type: none"> - Have a student write his/her name in the squares on 1-inch grid paper, one letter in each square. - Have another student write his/her name in the squares in the row below. - Have students tell which name is longer and how they know. <table border="1" data-bbox="1129 1357 1583 1433" style="margin-left: auto; margin-right: auto;"> <tr> <td>S</td><td>O</td><td>F</td><td>I</td><td>A</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>K</td><td>A</td><td>T</td><td>H</td><td>E</td><td>R</td><td>I</td><td>N</td><td>E</td><td></td><td></td> </tr> </table>	S	O	F	I	A							K	A	T	H	E	R	I	N	E		
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	<ul style="list-style-type: none">• Three Bear Compare Materials: book/story of The Three Bears, three-column comparing mat (long, longer, longest; short, shorter, shortest; or tall, taller, tallest)<ul style="list-style-type: none">- Read the story of The Three Bears before to set up this activity/center- Have students compare the length/height of three objects- Have them describe how they sorted them, using the language of comparison
<p>Technology Activity: http://www.crickweb.co.uk/Early-Years.html Lecky Compares Comparing three items, identifying largest, smallest, etc.</p> <p>http://www.kidport.com/GradeK/Math/MeasureGeo/MathK_Tall.htm Taller or Shorter?</p>	