

## LATE NUMERACY ASSESSMENT SURREY

Concepts	Instructions	Supporting Activities
<p><b>1. Mathematical Awareness</b></p> <ul style="list-style-type: none"> <li>Understanding the world around us</li> </ul>	<p>Conference with the student and ask the question from BLM "Mathematical Awareness"</p>	<p>Parents can help the child recognize math in the real world by:</p> <ul style="list-style-type: none"> <li>Grocery shopping – estimating totals, comparing prices, being aware of the various costs, amount of change</li> <li>Cooking – measuring ingredients, doubling a recipe</li> <li>Setting the table – how many _____ will you need?</li> <li>Calendar – awareness of dates, passage of time</li> <li>Schedules – keeping track of family events</li> </ul>
<p><b>2. Skip Counting</b></p> <ul style="list-style-type: none"> <li>Understand that when counting (e.g., by 2's) that 2 items are being counted</li> <li>Understand the quantity remains the same when counted in different ways (conservation)</li> <li>Organizes groups to keep track of count</li> </ul>	<p>Provide a collection of 48 counters. Ask the students to count the collection. Prompt, if needed, to count by 2's. Then ask, "What is another way you can count the collection? How many counter do you think there will be?" Ask them to recount again by 5's or 3's</p>	<ul style="list-style-type: none"> <li>Counting collections is a routine in which students work in partners to count a collection of highly engaging items and provides students with lots of time doing and talking about math and also provides teachers with important information about their students' understanding of number. <a href="http://bit.ly/2xbpW5h">http://bit.ly/2xbpW5h</a></li> <li>Skip counting with beads on a ring or pipe cleaners.</li> <li>Using a hundreds chart to track a pattern.</li> </ul>
<p><b>3. Oral Skip Counting</b></p> <ul style="list-style-type: none"> <li>Understand and say the number patterns for each sequence</li> <li>Skip counting by any number, from any starting point (increasing and decreasing)</li> </ul>	<p>Ask students to count orally:</p> <ul style="list-style-type: none"> <li>Forward by 2's starting at 110</li> <li>Backwards by 2's starting from 88</li> <li>Forward by 3's to 36</li> <li>Forward by 25's to 125</li> </ul>	<ul style="list-style-type: none"> <li>Choral counting as a class with the numbers written on chart paper or the board – next, have the students identify the patterns they see <a href="https://tedd.org/activities/choral-counting/">https://tedd.org/activities/choral-counting/</a> (Note: You'll need to register on the site to access info sheets and videos – it's free) or the Teaching Channel also has videos. <a href="https://www.teachingchannel.org/videos/teaching-number-patterns">https://www.teachingchannel.org/videos/teaching-number-patterns</a></li> <li>Counting Around the Circle <a href="https://vimeo.com/131898096">https://vimeo.com/131898096</a></li> <li>Start and Stop Counting</li> </ul>
<p><b>4. Place Value Counting Patterns</b></p> <ul style="list-style-type: none"> <li>Identify the place value based counting patterns</li> <li>Write the patterns correctly</li> </ul>	<p>Provide students with the BLM "Up and Through the Hundreds" and ask them to fill in the blanks by 1's, 10's, and 100's. Ask students to explain the patterns they see.</p>	<ul style="list-style-type: none"> <li>Build and change numbers to 100 with ten frame cards</li> <li>Build and change numbers to 1000 with base ten blocks</li> <li>Use tent cards to develop and understanding of place value of numbers <a href="http://bit.ly/2xcpRcz">http://bit.ly/2xcpRcz</a></li> <li>Choral counting (see above for links)</li> <li>Tell Me Everything Routine <a href="http://bit.ly/2eIR8Cg">http://bit.ly/2eIR8Cg</a></li> </ul>
<p><b>5. Read and Write Numbers Through Hundreds</b></p> <ul style="list-style-type: none"> <li>Use place value to read, write and say numbers</li> </ul>	<p>Provide each student with a copy of the BLM "Read and Write Numbers Through Hundreds" Call out numbers and ask students to write the following numbers: <b>17, 63, 110, 406, 781, 1001</b> Show them the numbers and ask them to read them aloud. <b>(on BLM 65, 113, 307, 780, 982, 1005)</b></p>	<ul style="list-style-type: none"> <li>Build a number with Base Ten Blocks – read aloud your number</li> <li>Place Value Sliders <a href="http://bit.ly/2yCNqQM">http://bit.ly/2yCNqQM</a></li> <li>Roll Place Value Dice and record expanded and standard forms <a href="http://amzn.to/2fLBBwx">http://amzn.to/2fLBBwx</a></li> <li>Place Value Pockets – SNAP - Build the largest 3 digit</li> </ul>

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<p><b>6. Compare and Order Numbers to 1000</b></p> <ul style="list-style-type: none"> <li>Arrange and recognize number to 1000</li> </ul>	<p>Provide the students with number cards from Set A</p> <p>Ask the students to compare and order the numbers. Repeat with Set B</p>	<ul style="list-style-type: none"> <li>Use the clothesline to compare and order numbers <a href="http://bit.ly/2z00GvZ">http://bit.ly/2z00GvZ</a> and</li> <li>Tell Me Everything routine <a href="http://bit.ly/2elR8Cg">http://bit.ly/2elR8Cg</a></li> <li>Hundreds and Thousands Chart puzzles</li> </ul>
<p><b>7. Representing Numbers</b></p> <ul style="list-style-type: none"> <li>Represent numbers to 1000 in various ways</li> <li>Demonstrate an understanding of place value</li> </ul>	<p>Provide manipulatives (mini ten frames and base 10 blocks)</p> <p>Ask students to build the quantity:</p> <p><b>18, 64, 99, 235</b> Ask: Can you show it a different way?</p>	<ul style="list-style-type: none"> <li>Use ten frames to build 2 and 3 digit numbers</li> <li>Use base 10 blocks to create a quantity in more than one way – e.g., what different pictures can you create with 99</li> <li>Aerobic Place Value – will be created and shared soon</li> <li>Tent Cards <a href="http://bit.ly/2xcpRcz">http://bit.ly/2xcpRcz</a></li> <li>I Have... Who Has?</li> <li>Use place value mats</li> </ul>
<p><b>8. Mental Math Strategies</b></p> <ul style="list-style-type: none"> <li>Use flexible computational strategies to 20 – decomposing, making and bridging ten, related doubles, and the commutative property.</li> </ul>	<p>Provide each student with a copy of the BLM “Friendly Numbers:</p> <p>Ask the students to solve the equation two different ways.</p>	<ul style="list-style-type: none"> <li>Quick Images <a href="http://ntimages.weebly.com/">http://ntimages.weebly.com/</a></li> <li>Number Talks <a href="http://bit.ly/2xHeg9h">http://bit.ly/2xHeg9h</a></li> <li>Today’s Number <a href="http://bit.ly/2fSmODX">http://bit.ly/2fSmODX</a></li> <li>True/False routines <a href="http://bit.ly/2hQrh1l">http://bit.ly/2hQrh1l</a></li> </ul>
<p><b>9. Addition and Subtraction to 1000</b></p> <ul style="list-style-type: none"> <li>Use flexible computational strategies involving taking apart and combining numbers in a variety of ways</li> <li>Estimate a reasonable answer</li> </ul>	<p>Provide each student with a copy of the BLM “How Did You Do It?”</p> <p>Ask the students to estimate an answer and show how they solved the equations.</p>	<ul style="list-style-type: none"> <li>Use flexible computational strategies (e.g., decomposing using friendly numbers and compensating and combining numbers in a variety of ways – recomposing)</li> <li>Number Talks <a href="http://bit.ly/2xHeg9h">http://bit.ly/2xHeg9h</a> and Number Strings</li> <li>Carole Fullerton’s Teacher Resource books</li> <li>Estimation opportunities – What is reasonable? How do you know? Using referents</li> </ul>
<p><b>10. One Step Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>Use strategies to solve equations: start unknown, change unknown, and result unknown and explain their thinking.</li> </ul>	<p>Provide each student with a copy of the BLM “Missing Addends Task”</p> <p>Have students solve the equations and explain their thinking.</p>	<ul style="list-style-type: none"> <li>Children’s literature books including <i>Balancing Act</i> and <i>Equal Schmequal</i> <a href="http://bit.ly/2y1rM7D">http://bit.ly/2y1rM7D</a></li> <li>Missing Part Cards</li> <li>Part Part Whole <a href="http://bit.ly/2xr9AnO">http://bit.ly/2xr9AnO</a></li> </ul>
<p><b>11. Problem Solving: Barnyard Legs</b></p> <ul style="list-style-type: none"> <li>Use multiple strategies to problem solve</li> </ul>	<p>Provide each student with a copy of the BLM “Barnyard Legs”</p> <p>Read aloud the problem and provide the students with concrete materials, paper, and pencils.</p>	<ul style="list-style-type: none"> <li>Marian Small’s Open Questions <a href="http://bit.ly/2xlhpaW">http://bit.ly/2xlhpaW</a></li> <li>Children’s Literature including <i>One is a Snail, Ten is a Crab</i>, <i>How Many Feet In the Bed</i></li> <li>Building students’ strategies with anchor charts</li> </ul>

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<p><b>12. Multiplication</b></p> <ul style="list-style-type: none"> <li>understand the concepts of multiplication (groups of and arrays)</li> <li>represent multiplication concretely, pictorially, and symbolically</li> </ul>	<p>Provide each student with a copy of the BLM "How Many Do You See?" Have students say how many they see and how they see them (one focusses on groups of and the other arrays). Ask them to express their thoughts through a multiplication question.</p>	<ul style="list-style-type: none"> <li>Quick image arrays <a href="http://bit.ly/2ktFOdA">http://bit.ly/2ktFOdA</a> or <a href="http://bit.ly/2laxgbO">http://bit.ly/2laxgbO</a></li> <li>Circles and Stars game <a href="http://bit.ly/2hPsVcQ">http://bit.ly/2hPsVcQ</a></li> <li>Counting Collections <a href="http://bit.ly/2xbpW5h">http://bit.ly/2xbpW5h</a></li> <li>Literature links <a href="http://bit.ly/2y2s8Lr">http://bit.ly/2y2s8Lr</a></li> <li>I Have... Who Has?</li> <li>Games <a href="http://bit.ly/2xVXOA5">http://bit.ly/2xVXOA5</a></li> </ul>
<p><b>13. Division</b></p> <ul style="list-style-type: none"> <li>Understand the concepts of division (sharing and grouping)</li> <li>Represent division concretely, pictorially, and symbolically</li> </ul>	<p>Provide the student with some counters. Ask them to demonstrate how they would fairly share 18 cookies with either 2, 3, or 6 friends.</p> <p>Next explain that there is a class going on a field trip. There are 24 students. Each car can take 4 students. Ask how many cars are needed?</p>	<ul style="list-style-type: none"> <li>Same as above</li> <li>Literature Links <a href="http://bit.ly/2fN6u3z">http://bit.ly/2fN6u3z</a></li> <li>Games</li> </ul>
<p><b>14. Fractions (part of a region) – Pattern Block Fractions</b></p> <ul style="list-style-type: none"> <li>Representing equal parts of a region as a fraction</li> <li>Understanding fraction parts are equal shares of a whole or unit</li> </ul>	<p>Provide the students with pattern blocks. Tell the students that the yellow hexagon represents one whole. Ask the students to show you the fraction that represents <math>\frac{1}{2}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{6}</math>, <math>\frac{2}{3}</math>, <math>\frac{1}{4}</math> Explain they can use combinations of pattern blocks if they want.</p>	<ul style="list-style-type: none"> <li>Use pattern blocks, colour tiles, Cuisenaire rods, folding paper</li> <li>Build a Fraction Kit – Marilyn Burns <a href="http://bit.ly/2yJi86U">http://bit.ly/2yJi86U</a></li> <li>Carole Fullerton's Cuisenaire Rods Teacher Resource</li> <li>Literature Links <a href="http://bit.ly/2gcMA2K">http://bit.ly/2gcMA2K</a> and <a href="http://bit.ly/2yJy7SO">http://bit.ly/2yJy7SO</a></li> <li>Literature links <a href="http://bit.ly/2xkgzLU">http://bit.ly/2xkgzLU</a></li> </ul>
<p><b>15. Fractions (parts of a set) – Shake and Spill Fractions</b></p> <ul style="list-style-type: none"> <li>Representing part of a set</li> <li>Understanding fraction parts are equal shares of a set</li> </ul>	<p>Provide students with 12 two sided counters. Have students 'Shake and Spill' the counters onto a workspace. Ask: What fraction of the set is red? Yellow? Ask: Do you see it another way?</p>	<ul style="list-style-type: none"> <li>Real life connections – Have students bring in a photo of a group (e.g., family, soccer team). Ask them to describe using fractions (e.g., <math>\frac{1}{10}</math> is wearing glasses, <math>\frac{6}{10}</math> are boys) <a href="http://bit.ly/2gdBafc">http://bit.ly/2gdBafc</a></li> <li>Counting Collections (e.g., what fraction of the set is ___) <a href="http://bit.ly/2xbpW5h">http://bit.ly/2xbpW5h</a></li> <li>Literature links <a href="http://bit.ly/2xkgzLU">http://bit.ly/2xkgzLU</a></li> </ul>
<p><b>16. Fractions (linear model) – Mystery Fractions</b></p> <ul style="list-style-type: none"> <li>representing part of a linear segment</li> <li>understanding fraction parts are equal segments of a line</li> </ul>	<p>Provide each student with a copy of the BLM "Mystery Fractions?" Explain that each of the number lines has missing fractions. Ask the students to fill in the mystery fractions.</p>	<ul style="list-style-type: none"> <li>Clothesline using fractions <a href="http://bit.ly/2xjzXbO">http://bit.ly/2xjzXbO</a> and <a href="http://bit.ly/2y4lg07">http://bit.ly/2y4lg07</a></li> <li>Connecting to real life – races, cutting ribbons</li> <li>Folding a long strip of paper to compare measurements</li> </ul>

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<p><b>17. Increasing and Decreasing Patterns</b></p> <ul style="list-style-type: none"> <li>Identify pattern rule using words and/or numbers</li> <li>Create increasing and decreasing patterns and make generalizations about predictable growth</li> </ul>	<p>Provide concrete manipulatives and ask the students to create an increasing. Can they explain the pattern rule using words or numbers?</p> <p>Ask the students to create a decreasing pattern and identify the pattern rule.</p> <p>Can the student make generalizations about predictable growth?</p>	<ul style="list-style-type: none"> <li>Literature links</li> <li>Visual Patterns <a href="http://www.visualpatterns.org/gallery.html">http://www.visualpatterns.org/gallery.html</a></li> <li>Guess My Rule</li> <li>Make, trade, extend</li> <li>Predict down the line</li> </ul>
<p><b>18. Measurement (using standard units for linear, mass, and capacity) – Which One?</b></p> <ul style="list-style-type: none"> <li>Familiarity with standard units</li> <li>Ability to select appropriate units</li> <li>Understand the relationship of the most common units (e.g., the relationship between a centimeter and a millimeter)</li> </ul>	<p>Provide each student with a copy of the BLM “Which One?” Have the students determine the appropriate unit of measure for each of the images on the three BLMs.</p> <p>Ask what is the relationship between millimeters, centimeters, and kilometers? Or grams and kilograms? Or milliliters and litres?</p>	<ul style="list-style-type: none"> <li>Real life connections</li> <li>Use photos and discuss which unit of measure you would use</li> </ul>
<p><b>19. Geometry – 3D Shapes - Faces, Edges, Vertices</b></p> <ul style="list-style-type: none"> <li>Identify and describe the attribute of 3D shapes (faces, edges, vertices)</li> </ul>	<p>Choose and identify a 3D shape (e.g., cone, cube, rectangular prism, cylinder).</p> <p>Describe its attributes.</p>	<ul style="list-style-type: none"> <li>Mystery Shapes – shapes in brown bags</li> <li>I have 8 vertices and 6 faces. Guess What Shape I Am?</li> <li>Building nets</li> <li>Same Different routine with shapes</li> <li>Which One Doesn't Belong routine <a href="http://wodb.ca/shapes.html">http://wodb.ca/shapes.html</a></li> <li>What shapes do you see in the world?</li> </ul>