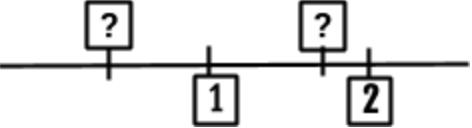


Overall Expectation		Big Ideas
<b>Grade 5</b>	<b>Grade 6</b>	<p><b>Numerical</b></p> <ul style="list-style-type: none"> <li>The numbers used to make an estimate determine whether the estimate is over or under the exact answer.</li> <li>Benchmark fractions like <math>\frac{1}{2}</math> (0.5) and <math>\frac{1}{4}</math> (0.25) can be used to estimate calculations involving fractions and decimals.</li> <li>Benchmarks can be used as a reference when comparing and ordering fractions and decimals.</li> <li>Estimation can be used to check the reasonableness of exact answers found by paper/pencil or calculator methods.</li> </ul> <p><b>Measurement</b></p> <ul style="list-style-type: none"> <li>Length, area, volume, and mass/weight measurements can be estimated using appropriate known referent (benchmarks)..</li> <li>Estimation and proportional reasoning skills allow students to estimate total amounts when given an unknown sum inside any given area.</li> </ul> <p>Source: Charles, R.I. (2005).Big ideas and understandings as the foundation for elementary and middle school mathematics. <i>Journal of Mathematics Education Leadership</i>. 7, 1-16.</p>
<p>- read, represent, compare and order whole numbers to 100 000, decimals to hundredths and fractions</p> <p>- estimate, measure, and record perimeter, area, temperature change, and elapsed time, using a variety of strategies</p>	<p>- read, represent, compare and order whole numbers to 1000 000, decimals to thousandths and fractions</p> <p>- estimate, measure and record quantities using the metric system</p>	
Specific Expectations		
<b>Grade 5</b>	<b>Grade 6</b>	
<p>- use estimation when solving problems involving addition, subtraction, and multiplication of whole numbers to help judge the reasonableness of a solution (NS)</p> <p>- compare fractions to appropriate benchmarks (NS)</p>	<p>- estimate, measure, and record quantities, using the metric measurement system (M)</p> <p>- estimate, measure, and record length, area, mass, capacity, and volume (M)</p> <p>- demonstrate an understanding of the relationship between estimated and precise measurements, and determine and justify when each kind is appropriate (M)</p> <p>- use estimation when solving problems involving the addition and subtraction of whole numbers and decimals, to help judge the reasonableness of a solution (NS)</p> <p>-estimate quantities using benchmarks of 10%, 25%, 50%, 75%, and 100%</p>	

Learning Experience 1	Learning Experience 2	Learning Experience 3	Learning Experience 4	Learning Experience 5
<p>Learning Goal: I can round whole and/or decimal numbers in order to estimate sums.</p> <p>Number Sense : Rounding Whole Numbers &amp; Decimals to Estimate Sums</p> <p>Length: 60-65 mins.</p>	<p>Learning Goals: I can use rounding and estimation to solving problems involving money amounts.</p> <p>Number Sense: Money, Rounding and Estimating Sums/Differences</p> <p>Length: 60 mins</p>	<p>Learning Goal: I can use real life benchmarks to estimate and compare measurements.</p> <p>Number Sense &amp; Measurement: Using Benchmark Measurements to Estimate and Compare Size</p> <p>Length: 55-60 mins.</p>	<p>Learning Goal: I can use benchmark fractions to compare and order fractional. representation, decimals and/or percent.</p> <p>Number Sense: Benchmark Fractions and Fractional Representations and Percentages</p> <p>Length: 60 mins.</p>	<p>Learning Goal: I can apply my knowledge and understanding of estimation strategies and benchmarks to reason and prove my thinking</p> <p>Number Sense &amp; Proportional Reasoning: Estimating Sums and Differences.</p> <p>Length: 75 mins.</p>
<p><b>Minds On (10 mins.)</b> * <i>Diagnostic Assessment</i></p> <p>Individually, students will select and complete one of the following questions on a cue card:</p> <p>a) Estimate the sum of <math>978 + 212 = \underline{\quad}</math>.</p> <p>b) Estimate the sum of <math>1025 + 215.4 = \underline{\quad}</math>.</p> <p>c) Estimate the sum of <math>754.9 + 323.5 = \underline{\quad}</math>.</p> <p>- “Three Corners”- each student will meet with the other students who worked on the same problem and discuss their strategies.</p> <p>- Each group will explain their strategies orally to the class.</p> <p>- Teacher will collect the cue cards and use for pre-assessment purposes</p>	<p><b>Minds On (10 mins.)</b></p> <p>Group Activity: Over/ Under</p> <p>- Display the following two questions and allow students to select one to answer (anyone finished early can complete both). Once students have completed their choice, they should talk within their table group and compare strategies. Ask them to focus on any new strategy they tried after yesterday’s lesson.</p> <p>a) Use <b>estimation</b> to decide if the sum of <math>\\$45.75 + \\$23.51 + \\$22.99</math> is over or under \$100.</p> <p>b) Use <b>estimation</b> to decide if the sum of <math>\\$35.12 + 69.80</math> is over or under \$100.</p>	<p><b>Minds On (10 - 15 mins.)</b> *<i>Diagnostic Assessment</i></p> <p>Individually, students will select and complete one of the two tasks below:</p> <p>a) Look around the classroom and find 3 items that are between 10 cm and 25 cm long.</p> <p>b) Look around the classroom and find 1 item that weighs about 50g and one that weighs just a little less than 50g.</p> <p>Have students share their reasoning with an elbow partner. Then have them measure the items. For mass the teacher can provide students with a 50 g mass to compare their object with.</p> <p>*Remind students (using the chart) about the vocabulary they should be listening for. This is also an opportunity to practice the math talk skill of repeating the explanations of others in their own words, as students share what their partner thinking with the group.</p>	<p><b>Minds On (10 mins.)</b></p> <p>Group activity: <a href="#">Which one doesn’t belong?</a></p> <p>Display the four images in the link above.</p> <p>Ask students to examine the images and write their response on a sticky note. They will then group their sticky notes according to the image they selected. Students will share their thinking with the class.</p> <p>* Important to allow students to discover that fractional representations can be seen in different ways (a picture showing <math>\frac{1}{4}</math> can may also show <math>\frac{3}{4}</math>).</p>	<p><b>Minds On</b></p> <p>This learning experience begins with the <b>Action Task</b> (see next page.)</p>

<p><b>Action (30 mins.)</b> Students will select one of the activities below to demonstrate their knowledge and understanding of rounding numbers for estimation purposes.</p> <p><a href="#">Spin &amp; Roll Activity</a> <a href="#">Rounding war</a></p> <p><b>Consolidation (15 mins.)</b> Facilitate a whole group discussion about rounding as an estimation strategy and develop a list of the important Math vocabulary related to rounding, estimation and reasonableness. Introduce the Learning Goal for the week and co-create an anchor chart based on the group discussion.</p> <p><b>Reflection (5-10 mins.)</b> In their math journal, students will reflect on the questions:</p> <ul style="list-style-type: none"> <li>• What is your strategy for rounding numbers?</li> <li>• How does rounding numbers help you make accurate estimations?</li> </ul> <p><a href="#">Click here</a> to access the quick and easy printable labels for Student Math Journals using Avery shipping labels (48163) !</p>	<p><b>Action (30 mins.)</b> Uniforms for Sale! Have the students work with a partner to determine the approximate cost of 2 different uniform combinations at the regular cost and at the sale price. Have students determine their approximate saving on each outfit (early finishers can determine the approximate savings if they were to purchase all their outfits). Click here for the <a href="#">uniform Sale Flyer and a recording sheet</a> for this activity.</p> <p><b>Consolidation (10 mins.) Gallery Walk</b> Conduct a Gallery Walk. Students will display their work and then travel with their partner to observe the work of other groups. As students circulate, ask them to reflect on the questions:</p> <ul style="list-style-type: none"> <li>• What did you notice about the strategies used?</li> <li>• How was it similar or different to your work? Have students share what they found and add any new information to the anchor chart started on Day One.</li> </ul> <p><b>Exit Ticket (10 mins.)</b> -Students will round the money amount to the nearest \$1.00, \$10.00...etc. (K&amp;U) -You decide to purchase five magazines that cost \$1.95 each. When you go to buy them the cashier charges you \$12.25. Is he correct? Use estimation to help prove your thinking. (T)</p>	<p><b>Action (25 mins)</b> Students will work independently or in pairs to complete a measurement scavenger hunt.</p> <p><a href="#">Measurement Scavenger Hunt</a></p> <p><b>Consolidation/Reflection (20 mins.)</b> Have students write in their math journals using the prompt</p> <ul style="list-style-type: none"> <li>• What connections do you make and/or benchmarks do you use when estimating measurement? How is it helpful?</li> </ul> <p>Students will turn and talk to their elbow partner about their written reflection. They will be asked to consider the following questions:</p> <ul style="list-style-type: none"> <li>• Did your partner use any information/strategies/vocabulary from the anchor?</li> <li>• Did he/she is try a different strategy?</li> <li>• Do you agree with your partner's reasoning? Why or why not?</li> </ul> <p>New ideas or vocabulary will be added to the anchor chart.</p> <p><a href="#">Click here</a> to access the quick and easy printable labels for Student Math Journals using Avery shipping labels (48163)!</p>	<p><b>Action (25 mins.)</b> * Can be completed as a group or individual task, and can also be completed as a digital- independent task using the <a href="#">Explain Everything App</a>. - Students are given 5-10 numbers and/or other representations (percents for grade 6) and are asked to examine the representations and organize/order them on an open number line. <a href="#">Click here</a> to find a page of numbers/ representations that can be used for activity.</p> <p>*for assessment purposes, students can record their thinking by using the video setting on an iPad. They can place the iPad on the desk and simply record their discussions about the placement of their numbers/images. *looking specifically for talk involving reasoning for their estimated placements</p> <p><b>Consolidation (15 mins.)</b> Facilitate a whole group discussion about the representations and number lines. Important questions to explore:</p> <ul style="list-style-type: none"> <li>• Which number/representations were easy to put on the number line? Why?</li> <li>• Which numbers/representations were more challenging? Why?</li> <li>• How can benchmark fractions (i.e., <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{8}</math>, <math>\frac{1}{6}</math>) help you understand other fractions?</li> </ul> <p><b>Exit Ticket (10 mins.)</b> Students will individually answer the question below on a cue card at the end of the lesson. (A &amp; C)</p> <p>Write a fraction for the two “?” on the number line below. Explaining your thinking using benchmark fractions.</p> 	<p><b>Action (60 mins) Centers</b> <b>*for 1 day the teacher chooses 3 centers from below and makes two of each of the 3</b> Students will work in groups of 4-5 at each Center. They will rotate every 15-20 mins or the time can be lengthened, with centers happening over a two day span</p> <ol style="list-style-type: none"> <li>1. Students will estimate the weight of provided items and order them according to their weight. Using masses/scales they will then measure the items to see how close their estimates were.</li> <li>2. Teacher will have two or three jars filled at different levels with different objects. Each groups will pick one of the estimation jars, estimate the total sum and explain the strategy/strategies used.</li> <li>3. Choose one:       <ol style="list-style-type: none"> <li>a) In pairs, model two fractions with the same numerator. Tell which is greater and why.</li> <li>b) In pairs, model two fractions with the same denominator. Tell which is greater and why. Source: Small, Marian. (2012). <i>Good Questions</i>, page 57.</li> </ol> </li> <li>4. In their groups, students will create a shopping list using the <a href="#">grocery flyer</a> provided. They have \$55.00 to spend. They may buy only 1 of any item. They need to get as close to \$55.00, without going over. (Tax free day.) Students should use their estimation skills when working with a set purchase price. They'd hate to get to the check out and not have enough money!</li> <li>5. <b>EQAQ Problem</b> - two questions in the support Document for assessment purposes       <ul style="list-style-type: none"> <li>• <a href="#">Grade 5/6 Task</a></li> <li>• <a href="#">Grade 6 Task</a></li> <li>• <a href="#">Grade 5 Parallel Task</a></li> </ul> </li> <li>6. <b>Rounding War</b> (from Day 1)</li> </ol> <p><b>Consolidation/Reflection Journal (10 mins.)</b> Students will reflect on the following questions in their Math Journal:</p> <ul style="list-style-type: none"> <li>• Why do you think it is important to know how to make accurate estimates and use benchmarks?</li> <li>• Give a real-life example of when/where you will put your estimation skills to use.</li> <li>• Did you find this week's lessons helpful and useful? Explain.</li> </ul> <p><a href="#">Click here</a> to access the printable labels for Student Math Journals using Avery shipping labels (48163).</p>
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