

## Rationale for Math Review and Mental Math

<h3>Classroom Environment</h3>	<p>Students need to understand that</p> <ul style="list-style-type: none"> <li>• Mistakes are okay and so is asking for help.</li> <li>• <u>Talking</u> about math helps the brain to remember at a deeper level, therefore students should discuss how to solve problems and be comfortable with math vocabulary.</li> <li>• Talking through solutions and sharing strategies in both small and large group settings is expected.</li> </ul>
<h3>Category Selection</h3>	<p>Based on current student needs, not a sequence in the textbook.</p> <ul style="list-style-type: none"> <li>• Concepts students should know but they don't know.</li> <li>• Answer the question, "What prerequisite skills do my students need to be successful on the concept I am currently teaching?"</li> <li>• Concepts that are pre-requisites to front load for the next topic.</li> <li>• Establishes a deliberate progression of mathematical concepts and computational skills that increase in difficulty throughout the school year.</li> </ul> <p>Example: <math>5/10 + 7/10</math>, <math>3/5 + 5/12</math>, <math>1 \frac{1}{3} + 3/8</math></p>
<h3>Error Analysis</h3>	<p>Repeated reasoning: It takes 24 exposures with effective feedback to reach 80% accuracy according to Marzano in "What works in the Classroom"</p> <p>Effective Feedback: Timely, specific, and <u>personal</u>.</p>
<h3>Starring and Misconceptions</h3>	<ul style="list-style-type: none"> <li>• Key to processing Math Review effectively is to emphasize number sense and reasonableness of an answer and to do this on a regular (daily) basis.</li> <li>• Processing is essential to helping students identify their own errors and misconceptions.</li> <li>• Stars point out the understanding that you expect them to have.</li> <li>• Circles show where the mistakes were made and what the student needs to reflect on</li> </ul>
<h3>Key Ideas</h3>	<ul style="list-style-type: none"> <li>• Reflects content and the key part of a problem where students make mistakes.</li> <li>• Clearly state what students need to focus on - where is the misconception.</li> </ul>
<h3>Personal Reflections</h3>	<ul style="list-style-type: none"> <li>• Daily opportunity for students to reflect on progress increases individual accountability for learning.</li> <li>• Awareness of individual mistakes or misunderstandings increases success in math.</li> </ul>
<h3>Math Review Quiz</h3>	<ul style="list-style-type: none"> <li>• Opportunity to collect data on skills and concepts that require further review as well as to celebrate collective growth.</li> <li>• Results drive the plan for students who do not understand the topics after two weeks of practice.</li> </ul>
<h3>Mental Math</h3>	<ul style="list-style-type: none"> <li>• Builds number sense and fluency with mental calculations</li> <li>• Opportunity for students to share and acquire effective strategies to calculate mentally.</li> <li>• Provides students with <u>mental</u> practice in computing basic number facts and manipulating mathematical operations</li> </ul>