

# Purposeful Pedagogy and the High Yield Strategies in Math

Assessment is continuous throughout the lesson...

Lesson Component	Opportunities for Student Use of the High Yield Strategies
<b>Launch</b> <ul style="list-style-type: none"> <li>- Set the stage (APK) and pose the problem to students</li> <li>- Provide time for students to mentally think about their solution strategies/plan or talk about how they plan to solve it</li> </ul>	<ul style="list-style-type: none"> <li>• Cues, Questions, and Advanced Organizers</li> <li>• Setting Objectives and Providing Feedback (if a goal was established before the lesson or students rated themselves before solving the problem)</li> <li>• Nonlinguistic Representations (if a picture was used as an APK or part of the problem launch)</li> <li>• Cooperative Learning (if students engaged in discussion or sharing about what they know/don't know about the problem)</li> </ul>
<b>Students Independently Work</b> (Explore) <ul style="list-style-type: none"> <li>- Students work to solve the problem – applying previous learning &amp; understanding from past classroom discussions or working to gain new learning in their solution process</li> <li>- Teachers confer with students as they work – listen to and notice student strategies or their misconceptions while working (this will guide future instruction)</li> <li>- Teachers select strategies to share in the discussion that will lead to the content goal for the standard(s) selected</li> </ul>	<ul style="list-style-type: none"> <li>• Reinforcing Effort and Providing Recognition (thru teacher/student conferences)</li> <li>• Summarizing and <u>Note Taking</u> (students are recording their thinking)</li> <li>• Nonlinguistic Representations (students recording their thinking)</li> <li>• Homework and <u>Practice</u> (students are applying previously learned strategies, trying new strategies, etc.)</li> <li>• Generating and Testing Hypothesis (students generate a plan for solution, then work to solve the problem and test their plan)</li> <li>• Cooperative Learning (if students work together in partners or small groups to solve the problem or work on strategies to solve the problem)</li> <li>• Setting Objectives and <u>Providing Feedback</u> (thru teacher/student conferences)</li> <li>• Cues, Questions, and Advanced Organizers</li> </ul>
<b>Discussion</b> (Summarize) <ul style="list-style-type: none"> <li>- Teacher facilitates discussion of new learning by comparing strategies, looking at the mathematical understanding, notation, misconceptions, etc.</li> <li>- Students analyze other students' strategies, compare them to those selected for the discussion and to their strategy</li> <li>- Content goal/understanding is presented through the discussion</li> <li>- May end with a True/False Question or Open Number Sentence with a new set of numbers for student application of new learning</li> </ul>	<ul style="list-style-type: none"> <li>• Identifying Similarities and Differences (students are comparing and analyzing strategies)</li> <li>• Reinforcing Effort and Providing Recognition</li> <li>• <u>Summarizing and Note Taking</u> (students are summarizing what they "hear" their classmates sharing or doing mathematically)</li> <li>• Nonlinguistic Representations (students solutions posted during the discussion for comparison and analysis)</li> <li>• Cues, Questions, and Advanced Organizers</li> <li>• Cooperative Learning</li> <li>• Setting Objectives and Providing Feedback Content goal/understanding should develop thru the discussion (if a goal was established before the lesson or students rated themselves before solving the problem – generalization of that goal and their understanding would take place)</li> <li>• Homework and <u>Practice</u> (if a new set of numbers is used through a new problem, true/false question or open number sentence, students are applying previously learned strategies, trying new strategies, etc.)</li> <li>• Generating and Testing Hypothesis (generate hypothesis about strategies then test how or if they work in various situations)</li> </ul>