LEA Reflective Summary: 9 – 12 Mathematics

New Mexico Public Education Department

Student Success Division

2011-2012

Grades 9 - 12 Math Reflective Summary

Step-By-Step Process
Using a Team Approach
The questions asked in the Grades 9 - 12 Math Reflective Summary are designed to help a group develop a "team" perspective. Teams work best when members agree at the outset on the rules for working together. However, what the team members agree to is not as important as the process they go through together to reach the agreements.

Team agreements might include:

- One voice at a time
- No side conversations
- All opinions are respected
- Start and stop on time
- Use consensus rather than majority rule to make final decisions

For the purpose of this tool it is recommended that the district and school leadership complete this collaboratively.

Tasks

1. Complete the table on page six identifying district and school leadership team members who participated in the 9-12 Math Reflective Summary.
2. Workings as a team read each question and through consensus, assign a rating.
3. Identify next steps that the LEA and the school will take to increase the level of implementation of each question.

Rating Scale Examples

Each of the questions asks participants to self identify on either a rating scale of 1 – 4 or yes/no where they feel they are currently based on evidence.

Shifts in Mathematics Instruction The following shifts represent key areas of emphasis as teachers and administrators work to implement the Common Core State Standards for Mathematics. Establishing a statewide focus in these areas can help schools and districts develop a common understanding of what is needed in mathematics instruction as they move forward with implementation.		**Yes/No**	**Next Steps for LEA/School to Increase Level of Implementation**
1.1	**Focus** Teachers provide students sufficient time to think, practice and integrate new ideas into their growing knowledge structure.	Choose an item. Choose an item. Yes No	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			

The shifts in Mathematics instruction **represent key areas of emphasis** as teachers and administrators work to implement the Common Core State Standards (CCSS) for Mathematics. Establishing a statewide focus in these areas can help schools and districts develop a common understanding of what is needed in mathematics instruction as they move forward with implementation. We are using a rating scale of yes/no as a conversation starter to draw attention to the changes in implementing the CCSS for Mathematics.

Example 2.1 asks teams to identify how many grade level mathematics teachers model for students how math concepts are used to solve problems in real-life situations.

- If math teachers in all grade levels model for students how concepts are used to solve problems in real-life situations, you would choose number 4.
- If math teachers in 3 grade levels model for students how concepts are used to solve problems in real-life situations, you would choose number 3.
- If math teachers in 1-2 grade levels model for students how concepts are used to solve problems in real-life situations, you would choose number 2.
- If math teachers in no grade levels model for students how concepts are used to solve problems in real-life situations, you would choose number 1.

Instructional Practice		4-3-2-1	Next Steps for LEA/School to Increase Level of Implementation
2.1	Mathematics teachers model for students how mathematics concepts are used to solve problems in real-life situations.	Choose an item.	
	— Essential questions connect to student life.	Choose an item. 4 = all grade levels 3 = 3 grade levels 2 = 1-2 grade levels 1 = no grade levels	**LEA:** Click here to enter text **School:** Click here to enter text.
	— Real world problems observed.		
	— Students using manipulatives to solve problems.		
	— Students work/products/projects posted/shown that require application.	Choose an item.	
	— Students maintain journals with records of application problems.	Choose an item.	
	— Assessments include application problems.	Choose an item.	
	— Teachers clearly connect math to real-world applications.	Choose an item.	
	— Students volunteer "context" for how math is used in real world.	Choose an item.	
Comments: Click here to enter text.			

Comments and Next Steps for LEA/School to Increase Level of Implementation

Each question asks for two additional steps.

1. The first is to identify what the LEA district and the School will do next to increase their level of implementation.
2. At the bottom of each question is a comments box, here teams can decide to add any additional supporting information to clarify, explain, etc.

Shifts in Mathematics Instruction The following **shifts represent** key **areas of emphasis** as teachers and **administrators** work to implement the Common Core State Standards for Mathematics. **Establishing a statewide focus** in **these areas can** help **schools** and districts develop a common understanding of what is needed in mathematics instruction as they move forward with implementation.		**Yes/No**	**Next Steps for LEA/School to Increase Level of Implementation**
1.1	**Focus** **Teachers provide** students **sufficient** time **to think**, practice and **integrate** new ideas **into** their growing knowledge structure.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text			

Saving Your Grades 9 – 12 Math Reflective Summary

1. Once you have completed the Grades 9 - 12 Math Reflective Summary as a team, save a copy of the Grades 9 - 12 Math Reflective Summary review in PDF form and upload it to your Web EPSS filing cabinet under your math goal using the following corresponding name:
    - (Insert name of school) Grades 9 - 12 Math Reflective Summary (insert date)
    - e.g., ABC High School Grades 9 - 12 Math Reflective Summary 01.10.2012

LEA Leadership Team Members			
Name	**Position**	**Email**	**Contact Phone Number**
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
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Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.

School Leadership Team			
Name	**Position**	**Email**	**Contact Phone Number**
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
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9 - 12 Literacy Reflective Summary			
LEA/State Charter Name: Choose an item.	**School Name:** Click here to enter text.	**NMPED Support Personnel:** Choose an item.	Click here to enter text.
Shifts in Mathematics Instruction The following shifts represent key areas of emphasis as teachers and administrators work to implement the Common Core State Standards for Mathematics. Establishing a statewide focus in these areas can help schools and districts develop a common understanding of what is needed in mathematics instruction as they move forward with implementation.		**Yes/No**	**Next Steps for LEA/School to Increase Level of Implementation**
1.1	**Focus** Teachers provide students sufficient time to think, practice and integrate new ideas into their growing knowledge structure.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
1.2	**Coherence** Classroom instruction is informed by a sense of the overall progression students are following across the grades.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
1.3	**Fluency** Teachers are aware of and able to provide the conceptual building blocks that develop understanding in tandem with skills along the way to fluency.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
1.4	**Deep Understanding** Teachers teach more than "how to get the answer" and instead support students' ability to access concepts from a number of perspectives.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.

	Students demonstrate deep conceptual understanding of core math concepts by applying them to new situations, as well as writing and speaking about their understanding.	Choose an item.	
Comments: Click here to enter text.			
1.5	**Applications** Students are expected to use math and choose the appropriate concept for application even when they are not prompted to do so. Teachers provide opportunities at all grade levels for students to apply math concepts in "real world" situations. Teachers in content areas outside of math, particularly science, ensure that students are using math – at all grade levels – to make meaning of and access content.	Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
1.6	**Dual Intensity** Students are practicing and understanding. There is more than a balance between these two things in the classroom – both are occurring with intensity. Teachers create opportunities for students to participate in application "drills" and make use of those skills through extended application of math concepts. The amount of time and energy spent practicing and understanding learning environments is driven by the specific mathematical concept and therefore, varies throughout the given school year.	Choose an item. Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			

Instructional Practice		**4-3-2-1**	**Next Steps for LEA/School to Increase Level of Implementation**
2.1	Mathematics teachers model for students how mathematics	Choose an item.	

	concepts are used to solve problems in real-life situations. — Essential questions connect to student life. — Real world problems observed. — Students using manipulatives to solve problems. — Students work/products/projects posted/shown that require application. — Students maintain journals with records of application problems. — Assessments include application problems. — Teachers clearly connect math to real-world applications. — Students volunteer "context" for how math is used in real world.	Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
2.2	Students use a graphing calculator to complete mathematics assignments monthly. — Calculators/technology in use/evidence of recent use. — Independent calculator use observed. — Calculator use embedded within lessons. — Teacher models use of calculators. — Calculator use noted in lesson plans. — Problems require calculator use beyond basic arithmetic functions.	Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
2.3	Students complete a mathematics project monthly that uses mathematics that replicate a real life/work setting. — Quality projects displayed in room. — Evidence of project rubrics observed.	Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.

	— Technology (spreadsheets, word processing) produced by students. — Students working in teams on projects. — Evidence/artifacts of student brainstorming. — Projects involve real world items including money, time, speed, distance.	Choose an item. Choose an item. Choose an item. Choose an item.	
Comments: Click here to enter text.			
2.4	Students orally defended a process they used to solve a mathematics problem monthly. — Students develop presentations. — Students required justifying projects, problems. — Evidence of journals, timelines, summaries. — Teachers/students make connections with other courses and the community. — Students brainstorm strategies to solve open ended problems. — Students use diagrams/illustrations to explain.	Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
2.5	Students engage in cooperative groups monthly on challenging mathematics assignments, and receive a group and individual grade. — Students interacting with each other as well as working independently. — Physical setting/arrangement facilitates teamwork. — Evidence of a process through team-building, projects or problem-solving. — Evidence of a process through display of student work. — Evidence of a process of final products. — Scoring guides, rubrics for individual and group grades.	Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.

Comments: Click here to enter text.			
2.6	Students work in groups to brainstorm how to solve a mathematics problem monthly. — Varied assessments- authentic, real world problems, performance events. — Teachers use primary source documents including newspapers and stock reports. — Groups solve real world problems, cross curricular projects. — Students raise original questions in discussions. — Teachers/students connect topics within mathematics. — Artifacts from the real world used in class. — Speakers from the real world.	Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
2.7	Students solve mathematics problems with more than one possible answer monthly. — Socratic strategies in use. — Teacher poses questions that encourage exploring possible solutions. — Students allowed to raise questions. — Students required to justify answers. — Students working in groups to test solutions. — Students communicate math ideas to one another verbally and in writing.	Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
2.8	Students solve mathematic problems other than those found in the textbook monthly.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.

	— Students complete projects either individually or in groups.	Choose an item.	
	— Students complete open-ended problems with explanations.	Choose an item.	
	— Examinations/quizzes include open-ended problems.	Choose an item.	
	— Open-ended projects and student work displayed.	Choose an item.	
	— Project-based learning activities link to other content areas.	Choose an item.	
Comments: Click here to enter text.			
2.9	Teachers clearly indicate the amount and quality of work necessary to earn a passing grade at the beginning of a project or unit.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
	— Standards/essential questions observed.	Choose an item.	
	— Rubrics developed and observed.	Choose an item.	
	— Quality student work posted with qualifiers.	Choose an item.	
	— Students see samples of exemplary student work.	Choose an item.	
	— Common exams in use.	Choose an item.	
Comments: Click here to enter text.			
2.10	Teachers were frequently available before, during or after school to help them with math.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
	— Students are required to attend extra help opportunities.	Choose an item.	
	— Students are assigned to study teams.	Choose an item.	
	— Re-teaching occurs using approaches that vary from traditional classroom.	Choose an item.	
	— Formative assessments used as diagnostic tools.	Choose an item.	
	— Individual learning/growth plans developed based on assessment needs.	Choose an item.	
	— Achievement data posted with goals established.	Choose an item.	

Reflecting on Classroom Observation/Walkthrough: Data to Support Instructional Practice			
A classroom observation tool (walkthrough) is used to monitor the fidelity of implementation of the core program/curricula and to ensure differentiated instruction is used to meet students' needs. *Identify the classroom walkthrough/observation tool used in your school:* Click here to enter text. *Identify the frequency of classroom walkthroughs for math:* Click here to enter text.			
Conceptual Understanding		**4-3-2-1**	**Next Steps for LEA/School to Increase Level of Implementation**
3.1	**Good Instruction in Conceptual Understanding:** – Develop understanding of why mathematical concepts are important and the kinds of contexts in which they are useful. – Helps students connect new mathematical ideas to those they already know. – Provides multiple opportunities to represent mathematical situations in different ways and know how different representations can be useful for different purposes.	Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
Procedural Fluency		**Yes/No**	**Next Steps for LEA/School to Increase Level of Implementation**
3.2	**Good Instruction in Procedural Fluency:** – Develops knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately and efficiently. – Provides opportunities for students to analyze the similarities and differences between methods of calculating (e.g., written, mental, manipulatives, calculators, spreadsheets, etc.).	Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.

	– Develops knowledge of estimation, including how to efficiently and accurately estimate the results of calculations, as well as how to determine when estimation is appropriate.	Choose an item.	
Comments: Click here to enter text.			
Strategic Competence/Problem Solving		**Yes/No**	**Next Steps for LEA/School to Increase Level of Implementation**
3.3	**Good Instruction in Problem Solving:** – Provides opportunities for students to figure out, formulate and solve their own mathematical problems from real-world situations. – Requires students to develop a "toolkit" of solution strategies and the reasoning ability to know which strategies are best suited to solve particular problems. – Requires students to generate mental models of problems; represent those models either numerical, symbolically, verbally or graphically; and then solve those problems.	Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
Adaptive Reasoning		**Yes/No**	**Next Steps for LEA/School to Increase Level of Implementation**
3.4	**Good Instruction in Adaptive Reasoning:** – Requires students to communicate, explain and justify their mathematical reasoning in multiple ways (e.g., verbally, written, with manipulatives, graphs, tables, symbols, etc.) – Provides opportunities for students to connect new learning to concepts and procedures they already know well. – Provides opportunities for students to reflect on and refine their reasoning and problem solving strategies.	Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.

	Comments: Click here to enter text.		
Productive Disposition		**Yes/No**	**Next Steps for LEA/School to Increase Level of Implementation**
3.5	**Good Instruction in Productive Disposition:** – Provides myriad opportunities for students to make sense of mathematics and experience the satisfaction of knowing that mathematics is comprehensible and accessible to them and not just arbitrary facts and procedures to memorize. – Develops a disposition that perseverance in mathematical problem solving results in sense making and connecting ideas, which develops mathematical competence. – Helps students to develop a positive attitude about themselves as mathematical learners.	Choose an item. Choose an item. Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
Communication with Parents Regarding Transition Benchmarks		**Yes/No**	**Next Steps for LEA/School to Increase Level of Implementation**
4.1	Parents are notified when their child is identified either as At Risk or Some Risk on the benchmark assessments administered at the beginning of the school year, middle of the school year, or at the end of the school year.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
4.2	Parents are informed when their child (phone call, conference, and letter) is unsuccessful in the core curriculum and moves on to supplemental instruction.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
4.3	Parents are informed as to what type of performance data will be collected, and how frequently; what general education services are to be provided; and what strategies the school will	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.

	use to increase the child's rate of learning in order to bring the child to grade level.		
Comments: Click here to enter text.			
4.4	Parents are notified in writing no later than one week after the administration of the winter benchmark assessment that their child is at risk for not being proficient in mathematics on the state assessment.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
4.5	A conference is held for each student whose parent(s) are notified in writing that their child is not academically proficient to discuss strategies, supports, and services available to assist the student in becoming academically proficient.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			
4.6	An academic improvement plan is developed that contains timelines, academic expectations and measurements to be used to support the student in overcoming academic deficiencies.	Choose an item.	**LEA:** Click here to enter text. **School:** Click here to enter text.
Comments: Click here to enter text.			

References

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