

Title: *Considerations for Implementing the New Illinois Learning Standards for Mathematics*



Intended Audience: Teachers, Administrators, Professional Development Coordinators

Description: This rubric helps determine level of implementation for the New Illinois Learning Standards based on 23 specific education concepts, including: Classroom, Assessment, Key Shifts, and Mathematical Practice Standards. This document can be used as a guide to navigate the full spectrum of implementation of the New Illinois Learning Standards for Mathematics. This rubric is differentiated by grade band, including K-2, 3-5, 6-8, and High School documents.

Suggested Use for these Documents:

- Professional development coordinators could use this to lead a professional development workshop.
- Teachers, administrators or other stakeholders could use this to get an overview of the Implementation Considerations.
- Teachers could use this to determine what professional development they need or what classroom changes they still need.

Materials Necessary:

Considerations for Implementing the New Illinois Learning Standards for Mathematics

Send questions and comments to:

plscomments@gmail.com

Resource Links:

[K-2 Considerations for Implementation](#)

[3-5 Considerations for Implementation](#)

[6-8 Considerations for Implementation](#)

[High School Considerations for Implementation](#)



Illinois State Board of Education

www.isbe.net

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General Characteristics of the New Illinois Learning Standards Leadership Team:

- Communicates expectations for instruction and outcomes regarding the New Illinois Learning Standards for Mathematics.
- Professional development is aligned with the needs of the school/district with the implementation of the New Illinois Learning Standards for Mathematics.
- Considers how professional development courses or workshops need to be differentiated in order to best suit the teachers. While some may be ready for advanced methods, others may need further assistance.
- District leaders should identify student learning priorities to target professional development that promotes the best practices to address student needs. The professional development plan must be systemic—long-range as well as short-range and fully articulated across the entire staff and grade spans.
- Meets regularly to discuss, update and plan for communications regarding upcoming PARCC assessments:
 - Performance Level Descriptors
 - Rubrics
 - Item Task Prototypes
 - Model Content Frameworks
 - Evidence Statements
 - Student Claims
- Meets regularly to plan how to communicate New Illinois Learning Standards for Mathematics with stakeholders such as the community, school board and parents.
- Determines how they can facilitate and support collaboration among teachers that is focused on implementation of the standards.
- Dedicates staff to determine technology needs and how to integrate into the New Illinois Learning Standards for Mathematics classroom.
- Develops a timeline to implement varied modes of assessments, including a range of pre, formative, summative and self-assessment measures.
- Analyze the current state of the school from a mathematics perspective with data from standardized test scores, state assessments, grades, and quantitative measures of student mathematics comprehension.

Materials

Determine to what extent the existing instructional materials align with the standards and make a plan to address gaps, redundant content or unnecessary curriculum.

Update instructional resources to align with the New Illinois Learning Standards for Mathematics; evaluate resources for effectiveness.

Examine the Publisher's Criteria before purchasing any new materials.

<http://www.achievethecore.org/page/267/publishers-criteria-for-mathematics>

Climate and Culture

- Through frequent conversations, keep the focus on learning by acting as a catalyst to build partnerships with teacher leaders, instructional coaches, and technology specialists.
- Build collaborative cultures characterized by conversations centered around student learning and reflective inquiry, shared ownership, and short- and long-term thinking.
- Build trust through shared decision making, frequent communications, frequent visits to classrooms and consistency over time. In these cases, trust becomes a key driver toward a strong culture.
- Grow leaders by creating opportunities for teacher leadership to emerge and by sharing and distributing leadership throughout the school. This prepares schools for the reality that “many tasks... require many leaders.”
- Build a Leadership Team for the New Illinois Learning Standards for Mathematics implementation
Examine ISBE's Comprehensive System of Learning Supports page for more information. <http://www.isbe.net/learningsupports/climate/climate-resources.htm>

Instructional Environment:

- Engages student interests in mathematics.
- Establishes expectations that are easy to understand and meet.
- Provides all students with opportunities to engage with mathematics of appropriate complexity for the grade level.
- Engages students in a productive struggle through discussion and other supports that build towards independence.
- Includes appropriate supports for students who are ELL, have disabilities, or read or write well below grade level.
- Includes extensions and/or more advanced math tasks for students who are well above grade level.
- Integrate available technology and media throughout curriculum and instruction.

A research base is connected to this instrument that does include Charlotte Danielson's Framework for evaluation, however, this tool is not meant to serve as an evaluation tool. This tool is only meant to serve as a connection in thinking for the teacher or administrator to formulate a synthesis from the shifts of the New Illinois Learnings Standards to practice in the classroom. Therefore, in no way should it be implied that a beginning implementation level serve as an unsatisfactory or basic level of teacher performance.

Charlotte Danielson's FRAMEWORK FOR TEACHING

DOMAIN 1: Planning and Preparation

- 1a Demonstrating Knowledge of Content and Pedagogy**
 - Content knowledge • Prerequisite relationships • Content pedagogy
- 1b Demonstrating Knowledge of Students**
 - Child development • Learning process • Special needs
 - Student skills, knowledge, and proficiency
 - Interests and cultural heritage
- 1c Setting Instructional Outcomes**
 - Value, sequence, and alignment • Clarity • Balance
 - Suitability for diverse learners
- 1d Demonstrating Knowledge of Resources**
 - For classroom • To extend content knowledge • For students
- 1e Designing Coherent Instruction**
 - Learning activities • Instructional materials and resources
 - Instructional groups • Lesson and unit structure
- 1f Designing Student Assessments**
 - Congruence with outcomes • Criteria and standards
 - Formative assessments • Use for planning

DOMAIN 2: The Classroom Environment

- 2a Creating an Environment of Respect and Rapport**
 - Teacher interaction with students • Student interaction with students
- 2b Establishing a Culture for Learning**
 - Importance of content • Expectations for learning and behavior
 - Student pride in work
- 2c Managing Classroom Procedures**
 - Instructional groups • Transitions
 - Materials and supplies • Non-instructional duties
 - Supervision of volunteers and paraprofessionals
- 2d Managing Student Behavior**
 - Expectations • Monitoring behavior • Response to misbehavior
- 2e Organizing Physical Space**
 - Safety and accessibility • Arrangement of furniture and resources

DOMAIN 4: Professional Responsibilities

- 4a Reflecting on Teaching**
 - Accuracy • Use in future teaching
- 4b Maintaining Accurate Records**
 - Student completion of assignments
 - Student progress in learning • Non-instructional records
- 4c Communicating with Families**
 - About instructional program • About individual students
 - Engagement of families in instructional program
- 4d Participating in a Professional Community**
 - Relationships with colleagues • Participation in school projects
 - Involvement in culture of professional inquiry • Service to school
- 4e Growing and Developing Professionally**
 - Enhancement of content knowledge and pedagogical skill
 - Service to the profession
- 4f Showing Professionalism**
 - Integrity/ethical conduct • Service to students • Advocacy
 - Decision-making • Compliance with school/district regulations




DOMAIN 3: Instruction






- 3a Communicating With Students**
 - Expectations for learning • Directions and procedures
 - Explanations of content • Use of oral and written language
- 3b Using Questioning and Discussion Techniques**
 - Quality of questions • Discussion techniques • Student participation
- 3c Engaging Students in Learning**
 - Activities and assignments • Student groups
 - Instructional materials and resources • Structure and pacing
- 3d Using Assessment in Instruction**
 - Assessment criteria • Monitoring of student learning
 - Feedback to students • Student self-assessment and monitoring
- 3e Demonstrating Flexibility and Responsiveness**
 - Lesson adjustment • Response to students • Persistence




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Mathematics Grades 3-5: General Considerations for a New Illinois Learning Standards Classroom


Category & Example of Danielson Connection	Full Implementation	Partial Implementation	Beginning Implementation
<p>Primary Resources</p> 	<p>The teacher has read , references when appropriate and bases their instruction on the New Illinois Learning Standards for Mathematics, Progression documents, The Publishers' Criteria, EQuIP Rubric, PARCC Model Content Frameworks, and the PARCC Evidence Tables.</p>	<p>The teacher has read and sometimes bases their instruction on the New Illinois Learning Standards for Mathematics, appropriate Progression documents, and the PARCC Model Content Frameworks.</p>	<p>The teacher has read and occasionally bases their instruction on the New Illinois Learning Standards for Mathematics.</p>
<p>Materials (Curriculum)</p> 	<ul style="list-style-type: none"> The teacher has researched alignment of all coursework material to the appropriate grade-level of the New Illinois Learning Standards. The teacher has utilized the Toolkit for Evaluating the Alignment of Instructional and Assessment Materials to the CCSS to identify common pitfalls and necessary steps in creating a curriculum that is truly aligned to the letter and spirit of the New Illinois Learning Standards. 	<p>The teacher occasionally utilizes the Toolkit for Evaluating the Alignment of Instructional and Assessment Materials to the CCSS to identify common pitfalls and necessary steps in creating a curriculum that is truly aligned to the letter and spirit of the New Illinois Learning Standards.</p>	<p>The teacher has not read or does not use the Toolkit for Evaluating the Alignment of Instructional and Assessment Materials to the CCSS.</p>
<p>Classroom Culture</p> 	<ul style="list-style-type: none"> The teacher provides a safe and welcoming classroom environment that promotes interaction, communication, collaboration, and intellectual risk taking. The teacher directs the communication and discovery of mathematical ideas by posing good questions, engaging students in worthwhile tasks, creating a culture that fosters students' creativity and understanding of mathematics. The teacher frequently uses a student-centered approach, where the teacher's role is facilitator. 	<ul style="list-style-type: none"> The teacher provides a safe and welcoming classroom environment that often promotes interaction, communication, and collaboration. The teacher often provides direct instruction and expects students to answer similar problems with the same process. Students rarely feel comfortable taking intellectual risks. The teacher provides students with worthwhile tasks and classroom time to work in pairs or small groups to find the solutions. The teacher sometimes uses a student-centered approach, where the teacher's role is facilitator. 	<ul style="list-style-type: none"> The teacher provides a safe classroom environment where students are expected to remain silent unless called upon, take good and accurate notes, follow all directions, and work independently. The teacher often provides direct instruction to students and expects students to answer similar problems with the same process that was demonstrated. The teacher rarely provides time for students to collaborate or communicate with one another. The teacher rarely uses a student-centered approach, where the teacher's role is facilitator.



Category & Example of Danielson Connection	Full Implementation	Partial Implementation	Beginning Implementation
Assessment Literacy	<ul style="list-style-type: none"> The teacher consistently uses assessment concepts and terminology correctly. [As defined in the Guidelines for Classroom Assessment] 	<ul style="list-style-type: none"> The teacher does not consistently use assessment concepts and terminology correctly. 	<ul style="list-style-type: none"> The teacher does not use assessment concepts or terminology correctly.
Linking instruction and assessment 	<ul style="list-style-type: none"> The teacher implements both standards-aligned instruction and ongoing assessment aligned to standards to promote learning. 	<ul style="list-style-type: none"> The teacher inconsistently implements both standards-aligned instruction and ongoing assessment aligned to standards to promote learning. 	<ul style="list-style-type: none"> The teacher does not implement both standards-aligned instruction and ongoing assessment aligned to standards to promote learning.
Selecting and designing assessment 	<ul style="list-style-type: none"> The teacher consistently selects and designs assessments based on the purpose for the assessment including what decisions will be influenced by the results and the best method for assessing the expectations. 	<ul style="list-style-type: none"> The teacher inconsistently selects and designs assessments based on the purpose for the assessment including what decisions will be influenced by the results and the best method for assessing the expectations. 	<ul style="list-style-type: none"> The teacher infrequently selects and designs assessments based on the purpose for the assessment including what decisions will be influenced by the results and the best method for assessing the expectations.
Administer and score assessment 	<ul style="list-style-type: none"> The teacher conscientiously administers and scores the New Illinois Learning Standards aligned assessments for the intended purpose, with accommodations as appropriate. 	<ul style="list-style-type: none"> The teacher inconsistently administers and scores assessments correctly. 	<ul style="list-style-type: none"> The teacher seldom administers and scores assessments correctly.
Feedback 	<ul style="list-style-type: none"> The teacher consistently provides constructive feedback based assessment data to students to support attainment of the New Illinois Learning Standards expectations. 	<ul style="list-style-type: none"> The teacher inconsistently provides constructive feedback based assessment data to students to support attainment of the New Illinois Learning Standards expectations. 	<ul style="list-style-type: none"> The teacher seldom provides constructive feedback based assessment data to students to support attainment of the New Illinois Learning Standards expectations.
Analyzing and using data 	<ul style="list-style-type: none"> The teacher consistently administers assessments (formative, interim and summative) and accurately analyzes assessment data to inform instruction. 	<ul style="list-style-type: none"> The teacher inconsistently administers assessments (formative, interim and summative) and analyzes assessment data to inform instruction. 	<ul style="list-style-type: none"> The teacher infrequently administers assessments (formative, interim and summative) and does not analyze assessment data to inform instruction.

Category & Example of Danielson Connection	Full Implementation	Partial Implementation	Beginning Implementation
<p>Using data to identify trends</p> 	<ul style="list-style-type: none"> The teacher independently and collaboratively works with team/grade level members to analyze data, identify trends in achievement, and suggest adjustments to curriculum to meet the New Illinois Learning Standards expectations. 		
<p>Reporting</p> 	<ul style="list-style-type: none"> The teacher reports assessment data reflecting progress or attainment of the New Illinois Learning Standards expectations clearly and concisely to appropriate stakeholders in a timely manner. 	<ul style="list-style-type: none"> The teacher inconsistently reports assessment data reflecting progress or attainment of the New Illinois Learning Standards expectations clearly and concisely to appropriate stakeholders. 	<ul style="list-style-type: none"> The teacher seldom reports assessment data reflecting progress or attainment of the New Illinois Learning Standards expectations clearly and concisely to appropriate stakeholders in a timely manner.
<p>Vertical Alignment</p> 	<ul style="list-style-type: none"> The teacher has read the grade-level New Illinois Learning Standards for Mathematics for the grade above and below the class they are teaching. The teacher has met with other teachers in the same grade-level to discuss changes that have occurred, including new material to the grade-level and the material that is no longer in this grade. The teacher team has met with representatives from the grade above and the grade below to discuss any necessary transition steps as students interact with changing curriculum. The teacher recognizes what knowledge the students bring with them when entering the classroom and connects new information to what they will learn the following year. The teacher always makes connections. 	<ul style="list-style-type: none"> The teacher has read the grade-level New Illinois Learning Standards for Mathematics for the grade above and below the class they are teaching. The teacher has noted changes to the curriculum, including new material to the grade-level and material that is no longer in this grade. The teacher recognizes what knowledge the students bring with them when entering the classroom and connects new information to what they will learn the following year. The teacher sometimes makes connections. 	<ul style="list-style-type: none"> The teacher has read the grade-level New Illinois Learning Standards for Mathematics for the grade above and below the class they are teaching. The teacher rarely makes connections.



Mathematics: Key Shifts


Category	Full Implementation	Partial Implementation	Beginning Implementation
<p data-bbox="138 870 218 898">Focus</p> 	<ul data-bbox="323 370 989 1177" style="list-style-type: none"> • The teacher spends a significant amount of classroom time discussing grade-level, content-aligned standards that have been designated Major work by the PARCC Model Content Frameworks. In grades 3-5 students focus on developing an understanding and the fluency (Fluency is defined as efficient and accurate methods for solving problems. Students use flexibility in choosing methods and can explain their chosen method.) of multiplication, division, fractions, and decimals (place-value). Significant time is also spent on describing and analyzing two-dimensional shapes, properties of figures, and finding the volume of three-dimensional figures. • The teacher revisits the critical areas (listed at the beginning of the grade-level standards in the New Illinois Learning Standards) throughout the year. • The teacher allows students time to explore these key ideas and develop a strong conceptual understanding and procedural skill in a connected and meaningful way related to the world around them. • Teachers do not add curriculum that is not directly stated in the appropriate grade-level standards. 	<ul data-bbox="1018 370 1486 841" style="list-style-type: none"> • The teacher creates and/or selects lessons that make some natural connections between grade-level work, subsequent grade-level work, or between standards, domains, and clusters. • The teacher occasionally develops lessons or units that follow the Progression documents, the PARCC Model Content Frameworks and the PARCC Evidence Tables. • The teacher occasionally points out the connections to the students. 	<ul data-bbox="1516 370 2039 776" style="list-style-type: none"> • The teacher has not read and/or is not developing units and lessons based on the Major work as defined by the PARCC Model Content Frameworks. • The teacher occasionally revisits the critical areas (listed at the beginning of the grade-level standards in the New Illinois Learning Standards) throughout the year. • The teacher occasionally adds curriculum that is not stated in the appropriate grade-level standards.


Category	Full Implementation	Partial Implementation	Beginning Implementation
<p data-bbox="107 380 254 410">Coherence</p> 	<ul data-bbox="323 139 991 805" style="list-style-type: none"> • The teacher creates and/or selects lessons that make natural connections to previous grade-level work, lay a natural foundation for subsequent grade-level work and make apparent connections between standards, domains and clusters. • Material is developed referencing the Progression documents, the PARCC Model Content Frameworks and the PARCC Evidence Tables (specifically the integrated statements). • Students should see partitioning of shapes as a visual representation of multiplication and division, scaled picture graphs can apply multiplication, ability to change decimals to fractions with denominators as multiples of ten, ability to use all four operations for measurement of liquid volume, mass and time, use of line plots with fractions, and connection of decimals to metric system and powers of ten. • Mathematics builds upon itself creating an inherent evolution that makes sense. 	<ul data-bbox="1016 139 1484 643" style="list-style-type: none"> • The teacher occasionally provides tasks for students to develop their understanding of mathematical concepts, become fluent with appropriate procedural skill, and recognize how and when mathematical concepts apply to the world around them. • The teacher occasional coherently combines these into a lesson. Occasionally a teacher only addresses one of the three ideas in situations where more than one should be addressed: understanding, skill, or application. 	<ul data-bbox="1514 139 2018 537" style="list-style-type: none"> • The teacher creates and/or selects lessons that make little connection to previous grade-level work, subsequent grade-level work, or connections between standards, domains, and clusters. • The teacher has not read or does not reference the Progression documents, the PARCC Model Content Frameworks or the PARCC Evidence Tables. Mathematical information is presented in a disjointed fashion.
<p data-bbox="138 997 218 1027">Rigor</p> 	<ul data-bbox="323 820 974 1385" style="list-style-type: none"> • The teacher coherently combines understanding, skill, and application into all tasks and lessons whenever possible. • The teacher provides sufficient opportunities for students to develop their understanding of fractions and decimals as numbers, including number line representation. Tasks promote fluency in multiplication and division, addition, subtraction, and multiplication of multi-digit numbers. Tasks provide mathematical insight into the world around including application of four operations to liquid volume, mass, time, and line plots (including fractions). • The teacher creates lessons and assessments representing the difficulty level inherent in the PARCC sample items, the progression documents, and Illustrative Mathematics tasks. 	<ul data-bbox="1016 820 1484 1320" style="list-style-type: none"> • The teacher occasionally provides tasks for students to develop their understanding of mathematical concepts, become fluent with appropriate procedural skill, and recognize how and when mathematical concepts apply to the world around them. • The teacher occasional coherently combines these into a lesson. Occasionally a teacher only addresses one of the three ideas in situations where more than one should be addressed: understanding, skill, or application. 	<ul data-bbox="1514 820 2003 1117" style="list-style-type: none"> • The teacher treats most mathematics and tasks as separate ideas in which a student only concentrates on learning conceptual understanding, procedural skill, or application. • The teacher does not often coherently combine understanding, skill, and application into a task, lesson, or assessment.


The Definition of a Worthwhile Task: A worthwhile task cohesively aligns to both common core grade-level content standards and standards for mathematical practice. A task builds upon students' previous knowledge and provides opportunity for students to develop conceptual understanding and obtain procedural skill and fluency. Tasks include a wide variety of mediums and student products. Tasks vary in modalities, learning styles, and length of time required to develop solutions. Tasks require students to communicate their mathematical reasoning.







The Standards for Mathematical Practice


Category	Full Implementation	Partial Implementation	Beginning Implementation
<p data-bbox="65 841 296 971">MP1 - Make sense of problems and persevere in solving them</p> 	<ul data-bbox="323 467 982 1101" style="list-style-type: none"> • A 3rd-5th grade teacher supports Mathematical Practice Standard 1 by providing worthwhile tasks that require students to work past the point that they would normally want to give up. • The teacher provides time and tasks that require students to explain to themselves the meaning of a problem, look for ways to solve it, make attempts, and recognize when their attempt is not working and change course to try again. Students work independently or collaboratively to seek the meaning of a problem and look for efficient ways to represent and solve it. • The teacher encourages students to use another method to check their work. • The teacher allows the student's time to consider their own process and results without providing constant scaffolding, verifying answers, or limiting methods. Students may show signs of struggle, but have enough tools to rely on to work through this. <p data-bbox="323 1109 495 1138">Example Task</p>	<ul data-bbox="1016 467 1486 971" style="list-style-type: none"> • The teacher provides many worthwhile tasks that require students to work past the point they would normally want to give up. • The teacher discusses and models the process to making sense of mathematical problems. • The teacher occasionally reminds students or prompts students of the process. • The teacher occasionally limits discussion or time on problems by providing direct instruction, scaffolding, answers, or demonstrating personal approach. 	<ul data-bbox="1520 467 2041 833" style="list-style-type: none"> • The teacher rarely provides worthwhile tasks or appropriate wait time. Often the teacher provides direct instruction on how to solve the problem. • The teacher does not encourage students to check their answers to see if they make sense. • Most tasks are completed the same way by everyone in the classroom with little to no discussion on the variety of strategies that could be used.

Category	Full Implementation	Partial Implementation	Beginning Implementation
<p data-bbox="86 699 268 792">MP2 - Reason abstractly and quantitatively</p> 	<ul data-bbox="321 139 982 846" style="list-style-type: none"> • A 3rd-5th grade teacher supports Mathematical Practice Standard 2 by engaging students in grade-level worthwhile tasks that challenge students to recognize that a number represents a specific quantity, numbers connect to written symbols, and numbers connect to create logical representations of a problem. • The tasks provide opportunities for students to decontextualize the information from a word problem, but then treat the numbers as if they are separate from the word problem- sometimes changing order where mathematically appropriate, but not appropriate within the scenario. • Once a mathematical answer is found, the students contextualize, by putting the answer back into the scenario and checking to see if it makes sense. • In fourth grade, students need to be able to compute and interpret remainders in real-world division problems. • Tasks challenge students across a wide range of learning styles and modalities. <p data-bbox="321 850 495 878">Example Task</p>	<ul data-bbox="1014 139 1486 708" style="list-style-type: none"> • Often the teacher supports Mathematical Practice Standard 2 by engaging students in grade-level worthwhile tasks that challenge students to make sense of quantities and their relationships in problem situations. • Students recognize that a number represents a specific quantity but work on their connections to symbols and logical representations (expressions) of a problem. • Some of the tasks challenge students across a wide range of learning styles and modalities while encouraging the use of quantitative reasoning. 	<ul data-bbox="1518 139 2039 643" style="list-style-type: none"> • Occasionally the teacher provides tasks in which students must use their knowledge of numbers representing a specific quantity to connect the quantity to written symbols and create a logical representation (expression) of the problem. • Little to no time is spent in understanding the relationships of the quantities, units involved, or properties of operations and objects. • Many of the tasks do not challenge students because they do not vary in their language, expectations, or abstract and quantitative reasoning skills.

Category	Full Implementation	Partial Implementation	Beginning Implementation
<p data-bbox="58 678 298 812">MP3 - Construct viable arguments and critique the reasoning of others</p> 	<ul data-bbox="323 139 991 812" style="list-style-type: none"> • A 3rd-5th grade teacher supports Mathematical Practice Standard 3 by engaging students in worthwhile tasks that elicit and challenge students' mathematical communication skills. Tasks provide opportunities for students to use assumptions, definitions, concrete objects, and previously established results in constructing arguments. • The teacher provides significant class time for students to refine their mathematical communication skills as they participate in mathematical discussions, and ask students “How did you get that?” and “Why is that true?” and honors the multiple strategies students use to solve problems/tasks. • The teacher provides ample collaborative time and varied tasks that promote both written and oral communication. • The teacher provides re-engagement tasks, where students re-engage the task and critique the work of others. <p data-bbox="369 815 541 841">Example Task</p>	<ul data-bbox="1016 139 1486 604" style="list-style-type: none"> • The teacher provides many worthwhile tasks that elicit and challenge students' mathematical communication skills. • The teacher often provides opportunities for students to use assumptions, definitions, concrete objects, and previously established results in constructing arguments. • The teacher often provides collaborative time in the classroom for students to practice supporting their mathematics with both written and oral communication. 	<ul data-bbox="1520 139 2032 435" style="list-style-type: none"> • Occasionally the teacher provides tasks that elicit and challenge students' mathematical communication skills. • The teacher occasionally provides opportunities for students to work in pairs or small groups to develop their ability to construct a mathematical argument or to express their reasoning to others.

Category	Full Implementation	Partial Implementation	Beginning Implementation
<p data-bbox="65 448 296 508">MP4 - Model with mathematics</p> 	<ul data-bbox="323 139 991 914" style="list-style-type: none"> • A 3rd-5th grade teacher supports Mathematical Practice Standard 4 by providing worthwhile tasks that incorporate a wide variety of mediums and tools to understand and solve problems arising in everyday life, society, and the workplace. • The teacher promotes the relationship between mathematics and the world around them in meaningful and appropriate ways, encouraging students to view mathematics and everyday life as connected. • The teacher encourages students to make connections from the math they are working on to their real-life circumstances. • The teacher provides tasks that demonstrate this connection and allows students to solve the problems using any model they feel is most appropriate including numbers, equations, mathematical language (words), pictures, concrete objects, charts, lists, graphs, etc. • The teacher develops a natural practice of reflection, to see if results and models make sense. Students begin evaluating the efficiency of the model they used to solve the problem. <p data-bbox="369 917 527 943">Sample Task</p>	<ul data-bbox="1016 139 1482 643" style="list-style-type: none"> • The teacher often provides worthwhile tasks that incorporate a variety of mediums and tools to understand and solve problems arising in everyday life. • The teacher encourages students to use any model they feel is most appropriate and to consider the efficiency of that model. • The teacher makes clear connections between the math students are working on to students' real-life circumstances. • The teacher reminds students to reflect and check their work. 	<ul data-bbox="1520 139 2024 675" style="list-style-type: none"> • The teacher provides few worthwhile tasks involving the modeling of mathematics and the connections that exist between mathematical concepts and everyday life. • The teacher demonstrates several ways to model with mathematics but limits the resources available or acceptable solutions in an effort to maintain uniformity. • The teacher often reminds students to reflect and check their work. • The teacher spends little time helping students consider the efficiency of models or instills in students a need to do so.
<p data-bbox="71 1114 289 1206">MP5 - Use appropriate tools strategically</p> 	<ul data-bbox="323 987 991 1490" style="list-style-type: none"> • A 3rd-5th grade teacher supports Mathematical Practice Standard 5 by engaging students in a myriad of worthwhile tasks which require the student to identify and properly use the appropriate tool (including estimation) to solve the problem. • The teacher provides a classroom environment where students feel comfortable choosing from a wide variety of tools (paper and pencil, concrete models, rulers, protractors, graph paper, number lines, lists, tables, etc.). • The teacher encourages students to communicate their reasoning for the tool they chose. • The teacher provides opportunities for students to understand the insight to be gained or the limitations of grade-appropriate tools. <p data-bbox="369 1494 527 1520">Sample Task</p>	<ul data-bbox="1016 987 1482 1455" style="list-style-type: none"> • The teacher often engages students with worthwhile tasks which require students to identify and properly use the appropriate tool (including estimation). • The teacher has a wide variety of tools available in the classroom. • The teacher occasionally provides direct instruction of which tool to use and articulates his/her reasoning to the students. • The teacher often has students communicate their reasoning for the tool they chose. 	<ul data-bbox="1520 987 2024 1390" style="list-style-type: none"> • The teacher occasionally provides students with worthwhile tasks which require students to identify and properly use the appropriate tool (including estimation). • The teacher frequently provides specific tools to students. • The teacher rarely has students communicate their reasoning for the tool they chose. • The teacher does not address benefits or limitations of specific tools.

Category	Full Implementation	Partial Implementation	Beginning Implementation
<p data-bbox="75 315 281 375">MP6 - Attend to precision</p> 	<ul data-bbox="323 139 991 672" style="list-style-type: none"> • A 3rd-5th grade teacher supports Mathematical Practice Standard 6 by communicating precisely using proper mathematical terms and definitions, including equation, equals, rhombus, ellipse, commutative, associative and distributive properties. • The teacher provides worthwhile tasks that develop students' knowledge and understanding of mathematical language, units, symbols and definitions, and encourages students to use clear and precise language in their own discussions. • The teacher provides a variety of tasks that address the necessity for attention to detail with units (recording area, labeling line plots, volume, etc.), proper use of symbols, ability to calculate accurately and efficiently, and grade-level appropriate mathematical terminology. <p data-bbox="369 678 525 704">Sample Task</p>	<ul data-bbox="1016 139 1495 639" style="list-style-type: none"> • The teacher often provides worthwhile tasks that develop students' knowledge and understanding of mathematical language and definitions. • The teacher occasionally uses non-precise language and sometimes teaches material using mnemonics and/or "tricks". • The teacher occasionally encourages students to use precise language, units, and symbols. • The teacher often discusses the importance of calculating accurately and efficiently. 	<ul data-bbox="1520 139 2037 574" style="list-style-type: none"> • The teacher does not consistently communicate mathematics with precise or proper mathematical terminology. • The teacher utilizes mnemonics and/or "tricks" when teaching new mathematical processes. • The teacher rarely stresses the importance of using proper units and symbols. • The teacher rarely provides worthwhile tasks that develop students' understanding of mathematical language and definitions.
<p data-bbox="75 997 281 1089">MP7 - Look for and make use of structure</p> 	<ul data-bbox="323 751 991 1321" style="list-style-type: none"> • A 3rd-5th grade teacher supports practice standard 7 by providing worthwhile tasks that develop students' ability to recognize patterns or structures in mathematics and then use those to efficiently solve a problem. • The teacher encourages students to communicate patterns or structures they see and how they use that knowledge in problem-solving (properties of operations- multiplication and division, partial products models, and add, subtract, multiply and divide whole numbers, fractions, and decimals). • The teacher provides tasks that begin building up students' ability to recognize opportunities to see complicated things as a single object or as being composed of several objects. • The teacher encourages students to look closely at all problems and discern a structure. <p data-bbox="369 1328 525 1354">Sample Task</p>	<ul data-bbox="1016 751 1495 1187" style="list-style-type: none"> • The teacher often provides worthwhile tasks that develop students' ability to recognize patterns or structures in mathematics. • The teacher often points out any patterns or structures in a task to the students and explains how this information can be useful when solving the problem. • The teacher occasionally encourages students to find the pattern or structure on their own. 	<ul data-bbox="1520 751 2037 1154" style="list-style-type: none"> • The teacher occasionally provides worthwhile tasks that develop students' ability to recognize patterns or structures in mathematics. • The teacher points out these patterns and structures and explains how the information can be useful when solving the problem. • The teacher provides little to no time for students to communicate the patterns or structures that they see and how they would use them in problem-solving.

Category	Full Implementation	Partial Implementation	Beginning Implementation
<p data-bbox="86 215 275 375">MP8 - Look for and express regularity in repeated reasoning</p> 	<ul data-bbox="323 142 978 607" style="list-style-type: none"> • A 3rd-5th grade teacher supports Mathematical Practice Standard 8 by engaging students in worthwhile tasks that provide opportunity for students to develop general methods and shortcuts by recognizing patterns. • In third grade, students may use the distributive property as a strategy for using products they know to solve products they do not know. • In fourth grade, students may use models to explain algorithms, like using a visual fraction model to write equivalent fractions. • In fifth grade, students see the pattern that exists when multiplying or dividing a number by a power of ten. <p data-bbox="369 613 525 639">Sample Task</p>	<ul data-bbox="1016 142 1482 505" style="list-style-type: none"> • The teacher often provides worthwhile tasks that provide opportunity to develop general methods and shortcuts by recognizing patterns. • The teacher often points these shortcuts out to the students. • The teacher occasionally provides tasks and time for students to develop general methods or shortcuts without direct instruction. 	<ul data-bbox="1520 142 2028 367" style="list-style-type: none"> • The teacher occasionally provides worthwhile tasks that develop general methods and shortcuts. • The teacher often provides the students with the insight into the patterns and connects them to a general method or shortcut for the students.