Math – Grade 6

Number

	4 - Excelling	3 - Meeting	2 - Approaching	1 - Working Below
Expectations included in all 4 strands	Consistently uses precise mathematical language	Routinely uses correct mathematical language	Sometimes uses correct mathematical language	Rarely uses correct mathematical language
	Consistently and independently makes appropriate connections among concrete, pictorial and symbolic representations	Routinely makes effective connections among concrete, pictorial and symbolic representations	Sometimes makes connections among concrete, pictorial and symbolic representations with support	Rarely makes connections among concrete, pictorial and symbolic representations
	Consistently and independently selects and applies appropriate strategies to solve a range of complex problems	Routinely selects and applies appropriate strategies to solve problems	Sometimes selects and applies appropriate strategies to solve problems	Rarely selects or applies appropriate strategies to solve problems
	Consistently and independently makes insightful connections between and within the different strands of mathematics	Routinely makes effective connections between and within the different strands of mathematics	Sometimes makes connections between and within the different strands of mathematics	Rarely makes connections between and within the different strands of mathematics
	Consistently represents, compares and orders a wide range of whole numbers, integers, decimals, mixed numbers, and fractions accurately	Routinely represents, compares and orders whole numbers, integers, decimals, mixed numbers, and fractions accurately	Sometimes represents, compares and orders whole numbers, integers, decimals, mixed numbers, and fractions accurately; may require pictorial or other models	Rarely represents, compares and orders whole numbers, integers, decimals, mixed numbers, and fractions accurately, even with concrete or pictorial models
	Consistently makes connections between a wide range of fractions, decimals, whole numbers, mixed numbers, ratios, percent, & integers	Routinely makes connections between fractions, decimals, whole numbers, mixed numbers, ratios, percent, and integers	Sometimes makes connections between fractions, decimals, whole numbers, mixed numbers, ratios, percent, and integers	Rarely makes connections between fractions, decimals, whole numbers, mixed numbers, ratios, percent, and integers
	Consistently and independently uses referents and estimation strategies effectively and efficiently	Routinely and effectively uses referents and estimation strategies	Sometimes uses referents and estimation strategies	Rarely uses referents and estimation strategies
	Consistently and independently uses benchmarks and patterns effectively and efficiently	Routinely and effectively uses benchmarks and patterns	Sometimes uses benchmarks and patterns	Rarely uses benchmarks and patterns
	Makes efficient and logical estimates to predict outcomes and check for reasonableness	Routinely makes effective, logical estimates to predict outcomes and check for reasonableness	Sometimes makes effective and logical estimates to predict outcomes and check for reasonableness	Rarely makes logical estimates to predict outcomes or check for reasonableness
	Uses strategies (including mental math) effectively and efficiently	Routinely uses strategies (including mental math) effectively	Sometimes uses strategies (including mental math) effectively	Rarely uses strategies effectively (including mental math)
	Consistently explains strategies and reasoning with clarity, precision, and thoroughness	Routinely and clearly explains strategies and reasoning	Sometimes explains strategies and reasoning, or explanations may be incomplete	Has difficulty explaining strategies and reasoning
	Consistently and independently selects and applies the correct operation to solve problems with accuracy	Routinely selects and applies the correct operation to solve problems with accuracy	Sometimes selects and applies the correct operation to solve problems	Has difficulty selecting and applying the correct operation to solve problems
	Rarely makes minor errors	Few minor errors	Some major errors	Many major errors

Evidence: (following Statistics and Probability section)
Glossary of key words: (following Evidence section at end of document)

Patterns and Relations

	4 - Exceeding	3 - Meeting	2 - Approaching	1 - Working Below
Expectations included in all 4 strands-	Consistently uses precise mathematical language	Routinely uses correct mathematical language	Sometimes uses correct mathematical language	Rarely uses correct mathematical language
	Consistently and independently makes appropriate connections among concrete, pictorial and symbolic representations	Routinely makes effective connections among concrete, pictorial and symbolic representations	Sometimes makes connections among concrete, pictorial and symbolic representations with support	Rarely makes connections among concrete, pictorial and symbolic representations
	Consistently and independently selects and applies appropriate strategies to solve a range of complex problems	Routinely selects and applies appropriate strategies to solve problems	Sometimes selects and applies appropriate strategies to solve problems	Rarely selects or applies appropriate strategies to solve problems
	Consistently and independently makes insightful connections between and within the different strands of mathematics	Routinely makes effective connections between and within the different strands of mathematics	Sometimes makes connections between and within the different strands of mathematics	Rarely makes connections between and within the different strands of mathematics
	Consistently and independently makes connections among a wide range of representations of patterns (concrete, pictorial, symbolic, tables, charts)	Routinely makes connections among various representations of patterns (concrete, pictorial, symbolic, tables, charts)	Sometimes makes connections among various representations of patterns (concrete, pictorial, symbolic, tables, charts)	Rarely makes connections among various representations of patterns (concrete, pictorial, symbolic, tables, charts)
	Consistently includes precise labels and headings in tables, graphs and other representations	Routinely includes appropriate labels and headings in tables, graphs and other representations	Sometimes includes appropriate labels and headings in tables, graphs and other representations	Rarely includes labels and headings in tables, graphs and other representations
	Consistently and independently uses patterns and relationships to solve a wide range of problems	Routinely uses patterns and relationships to solve problems	Sometimes uses patterns and relationships to solve problems	Rarely able to use patterns and relationships to solve problems
	Consistently and independently explains patterns and reasoning with clarity, precision, and thoroughness	Routinely and clearly explains patterns and reasoning	Sometimes explains patterns and reasoning	Has difficulty explaining patterns and reasoning
	Consistently and independently represents a wide variety of relationships using equations and variables (including equivalent equations)	Routinely represents relationships using equations and variables (including equivalent equations)	Sometimes represents relationships using equations and variables (including equivalent equations)	Rarely represents relationships using equations and variables (including equivalent equations)
	Rarely makes minor errors	Few minor errors	Some major errors	Many major errors

Evidence: (following Statistics and Probability section)
Glossary of key words: (following Evidence section at end of document)

Shape and Space

	4 - Exceeding	3 - Meeting	2 - Approaching	1 - Working Below
Expectations included in all 4 strands-	Consistently uses precise mathematical language	Routinely uses correct mathematical language	Sometimes uses correct mathematical language	Rarely uses correct mathematical language
	Consistently and independently makes appropriate connections among concrete, pictorial and symbolic representations	Routinely makes effective connections among concrete, pictorial and symbolic representations	Sometimes makes connections among concrete, pictorial and symbolic representations with support	Rarely makes connections among concrete, pictorial and symbolic representations
	Consistently and independently selects and applies appropriate strategies to solve a range of complex problems	Routinely selects and applies appropriate strategies to solve problems	Sometimes selects and applies appropriate strategies to solve problems	Rarely selects or applies appropriate strategies to solve problems
	Consistently and independently makes insightful connections between and within the different strands of mathematics	Routinely makes effective connections between and within the different strands of mathematics	Sometimes makes connections between and within the different strands of mathematics	Rarely makes connections between and within the different strands of mathematics
	Consistently and independently (and accurately) solves a wide range of problems involving perimeter, area and volume	Routinely and accurately solves problems involving perimeter, area and volume	Sometimes solves problems involving perimeter, area and volume	Has difficulty solving problems involving perimeter, area and volume
	Consistently and independently estimates, uses referents, and measures angles, recording with correct unit	Routinely estimates, uses referents, and measures angles, recording with correct unit	Sometimes estimates appropriately, using referents, and measures angles, recording with correct unit	Has difficulty estimating, using referents, and measuring angles, recording with correct unit
	Consistently explains strategies and reasoning with clarity, precision, and thoroughness	Routinely and clearly explains strategies and reasoning	Sometimes explains strategies and reasoning or explanations may be incomplete	Has difficulty explaining strategies and reasoning
	Consistently and independently uses attributes to correctly describe, construct and compare triangles and a wide range of other polygons	Routinely and accurately uses attributes to describe, construct and compare triangles and other polygons	Sometimes uses attributes to correctly describe, construct and compare triangles and other polygons	Has difficulty using attributes to correctly describe, construct and compare triangles and other polygons
	Consistently and independently identifies, describes, predicts and draws transformations (including the first quadrant on a Cartesian plane) of a wide range of shapes	Routinely and accurately identifies, describes, predicts and draws transformations (including the first quadrant on a Cartesian plane)	Sometimes identifies, describes, predicts and draws transformations (including the fist quadrant on a Cartesian plane)	Has difficulty identifying, describing, predicting and drawing transformations (including the first quadrant on a Cartesian plane)
	Consistently uses precise labels (including units) in diagrams; drawings are proportional	Routinely uses appropriate labels (including units) in diagrams; drawings are proportional	Sometimes uses appropriate labels (including units) in diagrams; drawings may not be proportional	Rarely uses appropriate labels (including units) in diagrams
	Rarely makes minor errors	Few minor errors	Some major errors	Many major errors
Evidence: (following Statistics and Probability section)				
Glossary of key words: (following Evidence section at end of document)				

Statistics and Probability

	4 - Exceeding	3 - Meeting	2 - Approaching	1 - Working Below
Expectations included in all 4 strands-	Consistently uses precise mathematical language	Routinely uses correct mathematical language	Sometimes uses correct mathematical language	Rarely uses correct mathematical language
	Consistently and independently makes appropriate connections among concrete, pictorial and symbolic representations	Routinely makes effective connections among concrete, pictorial and symbolic representations	Sometimes makes connections among concrete, pictorial and symbolic representations with support	Rarely makes connections among concrete, pictorial and symbolic representations
	Consistently and independently selects and applies appropriate strategies to solve a range of complex problems	Routinely selects and applies appropriate strategies to solve problems	Sometimes selects and applies appropriate strategies to solve problems	Rarely selects or applies appropriate strategies to solve problems
	Consistently and independently makes insightful connections between and within the different strands of mathematics	Routinely makes effective connections between and within the different strands of mathematics	Sometimes makes connections between and within the different strands of mathematics	Rarely makes connections between and within the different strands of mathematics
	Consistently and independently selects appropriate strategies for collecting or finding data to answer questions or solve a wide range of problems	Routinely selects appropriate strategies for collecting or finding data to answer questions or solve problems	Sometimes selects appropriate strategies for collecting or finding data to answer questions or solve problems	Rarely selects appropriate strategies for collecting or finding data to answer questions or solve problems
	Consistently and independently organizes data in a format appropriate to a wide range of purposes and problems	Routinely organizes data in a format appropriate to purpose, and to solve problems	Sometimes organizes data in a format appropriate to purpose, and to solve problems	Rarely organizes data in a format appropriate to purpose, and to solve problems
	Consistently includes precise labels in charts, tables and graphs	Routinely includes appropriate labels in charts, tables and graphs	Sometimes includes appropriate labels in charts, tables and graphs	Rarely includes labels in charts, tables and graphs
	Consistently and independently interprets data in a wide range of graphs appropriately	Routinely interprets data appropriately to answer questions and solve problems	Sometimes interprets data in graphs appropriately	Has difficulty interpreting data in graphs appropriately
	Consistently and independently describes, makes predictions and compares possible outcomes for a wide range of contexts	Routinely describes, makes predictions and compares possible outcomes	Sometimes describes, makes predictions and compares possible outcomes	Has difficulty describing, making predictions and comparing possible outcomes
	Consistently and independently explains and distinguishes between experimental and theoretical probability for a wide range of contexts	Routinely explains and distinguishes between experimental and theoretical probability	Sometimes explains and distinguishes between experimental and theoretical probability	Has difficulty explaining and distinguishing between experimental and theoretical probability
	Consistently explains strategies and reasoning with clarity, precision, and thoroughness	Routinely and clearly explains strategies and reasoning	Sometimes explains strategies and reasoning, or explanations may be incomplete	Has difficulty explaining strategies and reasoning
	Rarely makes minor errors	Few minor errors	Some major errors	Many major errors

Evidence: (following Statistics and Probability section)
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Evidence of Learning: Suggested Sources

Observations:
- Observe students using models (materials and manipulatives) and diagrams
- Observe students playing games.
- Observe students completing tasks
- Observe student presentations and demonstrations
- Use listening checklist of mathematical language
- Notes from guided math sessions
- "Gallery" walks

Conversations (oral/written):
- Conferences
- Interviews
- Whole class and group discussions
- Guided tasks
- Math talks
- Math journal entry
- Exit slips (written responses)
- Self- and peer assessment and reflection

Products:
- Quizzes (oral/written)
- Projects
- Tests
- Graphs
- Song, poem, art
- Work samples
- Exit slips or other responses to questions
- Math journal entry
- Photos of student use of models
- Group problem solving records
- Portfolios

Glossary

Appropriate: is aligned with the expectations of the curriculum document (e.g., *Routinely selects and applies appropriate strategies to solve problems*).

Benchmarks: numbers used to compare and order other numbers (e.g., 5, 10, 25, 50, 100).

Concrete representation: using materials/manipulatives (e.g., counters, pattern blocks) to show a mathematical concept or solve a problem

Consistently: always acting or behaving in the same way and of the same quality

Effective: approach used consistently provides an accurate solution

Efficient: approach used has minimal number of steps (based on the expectations of the curriculum) and consistently provides an accurate solution

Pictorial representation: using drawings/diagrams (e.g., drawings of the model, number lines) to show a mathematical concept or solve a problem

Rarely: not often; even with support

Referent: a concrete representation of a quantity or a unit of measurement (it is helpful if the representation is personally meaningful)

Routinely: done very often with no support

Sometimes: occasionally and/or with support

Subitizing: using familiar arrangements of objects to determine how many there are without counting (e.g., dice)

Symbolic representation: using numbers and mathematical symbols (e.g., 9, +, ÷) to show a mathematical concept or solve a problem