



QUINCY PUBLIC SCHOOLS

Grade One Mathematics Rubric

Operations and Algebraic Thinking

Understands the relationship between addition and subtraction.

1	2	3	4
With teacher support, is not able to use related facts to solve addition and subtraction problems.	With teacher support, is able to use related facts to solve addition and subtraction problems.	Working independently, is consistently able to use related facts to solve addition and subtraction problems.	Working independently, is consistently able to use related facts to solve addition and subtraction problems, and is able to explain how the processes of addition and subtraction are related.

Adds and subtracts fluently within ten.

1	2	3	4
With teacher support and/or manipulatives, is not able to add and subtract accurately within ten.	With teacher support and/or manipulatives, is able to add and subtract accurately within ten.	Working independently, is able to add and subtract quickly and accurately within ten.	Demonstrates automatic and accurate mastery of addition and subtraction facts within ten.

Adds and subtracts accurately within twenty.

1	2	3	4
With teacher support and/or manipulatives, is not able to add and subtract accurately within twenty.	With teacher support and/or manipulatives, is able to add and subtract accurately within twenty.	Working independently, but possibly with manipulatives, is able to add and subtract accurately within twenty.	Demonstrates automatic and accurate recall of addition and subtraction facts within twenty.

Efficiently applies strategies to solve word problems.

1	2	3	4
With teacher support, is not able to apply reasonable strategies to solve word problems.	With teacher support, applies reasonable strategies to solve word problems.	Working independently, chooses appropriate strategies to use when solving word problems, and accurately sees problems through to completion.	Working independently, is able to explain why a certain strategy is most efficient for solving a given word problem, and is able to generate new problems for which a specified strategy could be used.

Numbers and Operations in Base Ten

Counts fluently, from any starting number, within 120.

1.NBT.1

1	2	3	4
With teacher support and/ or manipulatives, is not able to count forward by ones from a given starting number.	With teacher support and/or manipulatives or tools, is able to count forwards by ones from a given starting number.	Working independently, is able to count forwards and backwards by ones from a given starting number.	Recognizes and uses patterns to skip count and/or to count backwards from a given starting number.

Reads, writes, and represents numbers within 120.

1.NBT.1

1	2	3	4
With teacher support, is not able to accurately name, write, draw, and create models of numbers within 120.	With teacher support, is able to accurately name, write, draw, and create models of numbers within 120.	Working independently, is able to accurately name, write, draw, and create models of numbers within 120.	Working independently, is able to accurately name, write, draw, and create models of numbers greater than 120.

Understands that two-digit numbers are comprised of tens and ones.

1NBT.2

1	2	3	4
With teacher support, is not able to use manipulatives to build two-digit numbers, and is not able to explain the meaning of each digit.	With teacher support, is able to use manipulatives to build two-digit numbers, but is not able to explain the meaning of each digit.	Working independently, is able to demonstrate and explain the meaning of each digit in a two digit number.	Working independently, is able to demonstrate and explain the meaning of each digit in a three-digit or four-digit number.

Uses understanding of place value to add and subtract two-digit numbers.

1	2	3	4
With teacher support is not able to accurately solve two-digit addition and subtraction problems when using manipulatives and/or drawings.	With teacher support is able to accurately, solve two-digit addition and subtraction problems when using manipulatives and/or drawings.	Working independently, is able to accurately solve two-digit addition and subtraction problems when using manipulatives and/or drawings.	Working independently, is able to accurately solve two-digit addition and subtraction problems without the use of manipulatives and/or drawings, and is able to extend the process to include working with three-digit numbers.

Compares two-digit numbers using >, <, and =

1	2	3	4
With teacher support and/or drawings and manipulatives, is not able to compare written numerals with one or two digits using the symbols >, <, and =.	With teacher support and/or drawings and manipulatives, is able to compare written numerals with one or two digits using the symbols >, <, and =.	Working independently, is able to compare written numerals with one or two digits using the symbols >, <, and =.	Working independently, is able to compare written numerals with three or more digits using the symbols >, <, and =.

Mathematical Reasoning

Understands and uses appropriate vocabulary.

1	2	3	4
Does not recognize or used expected math vocabulary.	Demonstrates inconsistent use of math vocabulary.	Consistently uses appropriate math vocabulary when prompted.	Consistently uses appropriate math vocabulary, in context, during classroom discussions.

Clearly communicates mathematical thinking verbally.

1	2	3	4
Is unable to explain how a problem has been solved or why it has been solved that way.	Is able to explain how a problem has been solved, but is not able or why it has been solved that way.	Is able to explain how a problem has been solved, and is able to explain why it has been solved that way.	Is able to critique different strategies that have been used to solve a given problem, and is able to identify the most efficient strategies to use in solving a given problem.

Clearly communicates thinking using objects, drawings, equations, and written language.

1	2	3	4
Is unable to use objects, drawings, or equations to solve problems.	Is able to use objects, drawings, or equations to solve problems.	Is able to use objects, drawings, and equations to solve problems.	Is able to use objects, drawings, and equations to solve problems and is able to write to explain their thinking.

Measurement and Data

Measures lengths of objects using non-standard units of measure.

1	2	3	4
With teacher support, is not able to use non-standard units (e.g. paperclips) to accurately measure objects.	With teacher support, is able to use non-standard units (e.g. paperclips) to accurately measure objects.	Working independently, is able to use non-standard units (e.g. paperclips) to accurately measure objects.	Working independently, is able to use standard units and measuring tools (e.g. inches, feet/rulers, tape measures) to accurately measure objects.

Represents and interprets data in graphs and charts.

1	2	3	4
With teacher support, is not able to answer questions about the number of data points in all and in each category of a given graph.	With teacher support, is able to answer questions about the number of data points in all and in each category of a given graph.	Working independently, is able to interpret data to answer “comparison” questions (e.g. how many more or less), and is able to generate graphs using provided data.	Working independently, is able to gather data, generate graphs and/or charts to represent that data.

Tells and writes times to the hour and half-hour.

1	2	3	4
With teacher support, is not able to accurately use a clock to tell time, or to write time, to the hour and half-hour.	Working independently, is able to accurately use a clock to tell time to the hour, but not to the half-hour.	Working independently, is able to accurately use a clock to tell time, and is able to write time, to the hour and half-hour.	Working independently, is able to accurately use a clock to tell time, and is able to write time, to the quarter-hour, or beyond.

Identifies U.S. coins and their values.

1	2	3	4
With teacher support, is not able to identify, compare, and find equivalent values of coins or solve problems involving coins.	Working independently, is able to identify coins by name and value, and with teacher support, is able to compare and find equivalent values of coins, and is able to solve problems involving coins.	Working independently, is able to identify, compare, and find equivalent values of coins, and is able to use appropriate notations, including when solving problems involving coins.	Working independently, is able to identify, compare and find equivalent values of, and solve problems involving paper money as well as coins.

Geometry

Identifies shapes based on their defining attributes.

1	2	3	4
With teacher support, is not able to distinguish between the attributes that define a shape (e.g. number of sides, angles, vertices, faces, edges) and the attributes that do not define a shape (e.g. color, size, orientation)	With teacher support, is able to distinguish between the attributes that define a shape (e.g. number of sides, angles, vertices, faces, edges) and the attributes that do not define a shape (e.g. color, size, orientation)	Working independently, is able to distinguish between the attributes that define a shape (e.g. number of sides, angles, vertices, faces, edges) and the attributes that do not define a shape (e.g. color, size, orientation)	Working independently, is able to identify all of the defining attributes of a given shape

Composes shapes based on their defining attributes.

1	2	3	4
With teacher support, is not able to accurately draw or build a shape when given a list of defining attributes (e.g. rectangle, square, trapezoid, triangle, circle, cube, rectangular prism, cone, and cylinder).	With teacher support, is able to accurately draw or build a shape when given a list of defining attributes (e.g. rectangle, square, trapezoid, triangle, circle, cube, rectangular prism, cone, and cylinder).	Working independently, is able to accurately draw or build a shape when given a list of defining attributes (e.g. rectangle, square, trapezoid, triangle, circle, cube, rectangular prism, cone, and cylinder).	Working independently, is able to build or draw, and name, shapes beyond those that are expected.

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