SRPSD Grade 6 Math Rubrics

Part A: Number Strand

N6.1a Demonstrate understanding of place value including: greater than one million with and without technology.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance with creating a place value chart to represent quantities greater than 1 000 000.	Student is can represent quantities over 1 000 000 in a place value chart.	Student is able to represent a quantity to greater than 1 000 000 in more than one way.	Student is able to solve problems that explore the quantity of numbers greater than 1 000 000.

N6.1b Demonstrate understanding of place value including: less than one thousandth with and without technology.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance making a place value chart to represent less than one thousandth.	Student can represent quantities less than one thousandth in a place value chart.	Students are able to represent numbers less than one thousandth in more than one way.	Student is able to solve problems that explore the quantity of less than one thousandth.

N6.2a Demonstrate understanding of factors (concretely, pictorially, and symbolically) by determining factors of numbers less than 100, relating factors to multiplication and division, and determining and relating prime and composite numbers.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student is able to explain what a factor is.	Student is able to make a partial list of factors for a given number.	Student is able to determine a set of factors for a number less than one hundred and identify prime and composite numbers.	Student is able to solve a problem involving common factors.

N6.2b Demonstrate understanding of multiples (concretely, pictorially, and symbolically) by, determining factors and multiples of numbers less than 100 and relating multiples to multiplication and division.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student is able to skip count.	Student is able to make a partial list of multiples.	Student is able to determine multiples for a given number less than 100.	Students are able to solve a problem involving common multiples.

N6.3 Demonstrate understanding of the order of operations on whole numbers (excluding exponents) with and without technology.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student is able to do individual basic operations.	Student can list the order of operations.	Student applies the rules of order of operations with and without technology.	Student is able to solve questions involving multiple operations. (can include error analysis)

N6.4a Extend understanding of multiplication to decimals (1-digit whole number multipliers and 1-digit natural number divisors).

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance to identify a situation where you would use multiplication and decimal numbers.	Student is able to estimate and place the decimal correctly.	Student can estimate and multiply decimals (1-digit whole number multipliers).	Student is able to solve situational problems and/or is able to critique statements involving multiplication.

N6.4b Extend understanding of division to decimals (1-digit whole number multipliers and 1-digit natural number divisors).

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance to identify a situation where you would use division and decimal numbers.	Student is able to estimate and place the decimal correctly.	Student can estimate and divide decimals (1-digit whole number divisors).	Student is able to solve situational problems and/or is able to critique statements involving division.

N6.5 Demonstrate understanding of percent (limited to whole numbers to 100) concretely, pictorially, and symbolically.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student is able to describe a situation involving percent.	Student is able to write the percent modelled concretely or pictorially.	Student is able to convert between decimals, fractions (denominator=100), and percent.	Student is able to convert between decimals, fractions and/or percent in a situational problem.

N6.6 Demonstrate understanding of integers concretely, pictorially, and symbolically.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student is able to describe a situation where integers are used.	Student is able to represent integers symbolically.	Student is able to order a set of integers – pictorially.	Student is able to find and explain the pattern on each side of the zero.

N6.7 Extend understanding of fractions to improper fractions and mixed numbers.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student identifies the difference between a mixed number and improper fraction.	Student is able to represent an improper fraction and a mixed number.	Student is able to express improper fractions as mixed numbers and vice versa.	Student is able to order a set of fractions, including whole numbers and improper fractions.

N6.8 Demonstrate an understanding of ratio concretely, pictorially, and symbolically.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student identifies or writes a ratio with assistance.	Student is able to express a ratio in colon and word form.	Student is able to represent ratios in colon, word, or fractional form and compare part/whole and part/part ratios.	Student is able to solve situational problems or critique statements involving ratios.

N6.9 Research and present how First Nations and Métis peoples, past and present, envision, represent, and use quantity in their lifestyles and worldviews.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance to research one FN & M group's understanding of quantity but is not able to explain in their own words.	Student is able to find research on one FN & M group's understanding of quantity but is not able to explain in their own words or represent.	Student is able to research and present one First Nation or Metis peoples understanding of quantity.	Student is able to research, present, and compare (similarities/differences) between FN & M group and their own understanding of quantity.

Part B: Pattern & Relations Strand

P6.1 Extend understanding of patterns and relationships in tables of values and graphs.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student is able to determine missing values in a table of values.	Student is able to determine the input rule, and the output rule.	Student is able to determine the input to output rule and graph the pattern.	Student is able to describe the relationship between a table of values and a graph.

P6.2 Extend understanding of preservation of equality concretely, pictorially, physically, and symbolically.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student is able to explain what equal means.	Student is able to explain equivalent forms pictorially or concretely.	Student is able to create and record symbolically equivalent forms of an equation.	Student is able to create and record symbolically equivalent forms of an equation using a variable.

P6.3 Extend understanding of patterns and relationships by using expressions and equations involving variables.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance in determining the pattern rule.	Student is able write the pattern rule as an expression.	Student is able to write an equation and expression using variables to represent a table of values.	Student is able to use the equation or expression with a variable to extend a table of values.

Part C: Shape & Space Strand

SS6.1 Demonstrate understanding of angles including:

- identifying examples classifying angles
- estimating the measure
- determining angle measures in degrees
- drawing angles
- applying angle relationships in triangles and quadrilaterals.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance in identifying examples of angles.	Student is able to classify angles.	Student is able to estimate and determine angle measures in degrees and draw angles.	Student can apply angle relationships in triangles and quadrilaterals.

SS 6.2 Extend and apply understanding of perimeter of polygons, area of rectangles, and volume of right rectangular prisms (concretely, pictorially, and symbolically) including:

- relating area to volume
- comparing perimeter and area
- comparing area and volume
- generalizing strategies and formulae
- analyzing the effect of orientation
- solving situational questions.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance relating perimeter to area.	Student can relate perimeter to area.	Student can relate area to volume.	Student can solve situational questions.

SS6.3 Demonstrate understanding of regular and irregular polygons including:

- classifying types of triangles
- comparing side lengths
- comparing angle measures
- differentiating between regular and irregular polygons
- analyzing for congruence.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance describing regular and irregular polygons.	Student can differentiate between regular and irregular polygons.	Student can classify types of triangles.	Student can analyze polygons for congruency.

SS6.4 Demonstrate understanding of the first quadrant of the Cartesian plane and ordered pairs with whole number coordinates.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance explaining each number in an ordered pair.	Student can explain each number in an ordered pair.	Student can plot points on a Cartesian plane.	Student can determine what scale to use on a Cartesian plane.

SS.6.5 Demonstrate understanding of single, and combinations of, transformations of 2-D shapes (with and without the use of technology) including:

- identifying
- describing
- performing.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance in performing a single transformation of 2D shapes.	Student can perform a single transformation of 2D shapes.	Student can perform a combination of transformations of 2D shapes.	Student can interpret a combination of successive transformations of 2D shapes.

Part D: Statistics & Probability Strand

SP6.1 Extend understanding of data analysis to include:

- line graphs
- graphs of discrete data
- data collection through questionnaires, experiments, databases, and electronic media
  interpolation and extrapolation.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance to determine the best way to collect data.	Student can determine the best way to collect data.	Student is able to use data to create a line graph.	Student can interpolate and/or extrapolate the line graph or graphs of discrete data.

SP6.2 Demonstrate understanding of probability by:

- determining sample space
- differentiating between experimental and theoretical probability
- determining the theoretical probability
- determining the experimental probability
- comparing experimental and theoretical probabilities.

Beginning (1)	Approaching (2)	Proficiency (3)	Mastery (4)
Student needs assistance determining outcomes for a given event.	Student can determine outcomes for a given event.	Student can determine theoretical and experimental probability.	Student can differentiate between experimental and theoretical probability.