

# SRPSD Grade 4 Math Rubrics

## Part A: Number Strand

**N4.1a** Demonstrate understanding of whole numbers to 10 000 by representing and describing.

| Beginning (1)  | Approaching (2)  | Proficiency (3)  | Mastery (4)  |
|--|--|--|--|
| Student needs assistance to use base ten blocks to represent a quantity to 10 000. | Student is able to represent a quantity to 10 000 using base ten blocks. | Student is able to represent a quantity to 10 000 using symbolic representation. | Student is able to represent a quantity to 10 000 in a non-standard arrangement and explain. |

**N4.1b** Demonstrate understanding of whole numbers to 10 000 by comparing and ordering.

| Beginning (1)  | Approaching (2)                               | Proficiency (3)                                      | Mastery (4)   |
|--|---|--|---|
| Student needs assistance to compare numbers to 10 000. | Student is able to compare numbers to 10 000. | Student is able to order a set of numbers to 10 000. | Student is able to order a set of numbers to 10 000 and explain their strategy. |

**N4.2a** Demonstrate an understanding of addition of whole numbers with answers to 10 000 (limited to 3 and 4-digit numerals).

| Beginning (1)                                      | Approaching (2)  | Proficiency (3)   | Mastery (4)   |
|--|--|---|---|
| Student needs assistance adding numbers to 10 000. | Student can add numbers to 10 000 that do not require regrouping | Student is able to add numbers to 10 000 using a regrouping strategy. | Student is able to solve situational addition story problems. |

**N4.2b** Demonstrate an understanding of subtraction of whole numbers with answers to 10 000 (limited to 3 and 4-digit numerals).

| Beginning (1)   | Approaching (2)  | Proficiency (3)  | Mastery (4)  |
|---|--|--|--|
| Student needs assistance subtracting numbers to 10 000. | Student can subtract numbers to 10 000 that do not require regrouping. | Student is able to subtract numbers to 10 000 using a regrouping strategy. | Student is able to solve situational subtraction story problems. |

**N4.2c** Demonstrate understanding of estimation using addition or subtraction to 10 000.

| Beginning (1)  | Approaching (2)                             | Proficiency (3)  | Mastery (4)   |
|--|---|--|---|
| Student needs assistance to round numbers to 10 000. | Student is able to round numbers to 10 000. | Student is able to use a personal strategy to estimate an addition or subtraction problem. | Student is able to estimate an addition or subtraction problem and justify their reasoning. |

**N4.3** Demonstrate an understanding of multiplication of whole numbers (limited to numbers less than or equal to 10) by applying mental mathematics strategies and explaining the results of multiplying by 0 and 1.

| Beginning (1)  | Approaching (2)  | Proficiency (3)   | Mastery (4)  |
|--|--|---|--|
| Student needs assistance to determine the result of a multiplication equation. | Student is able to provide an answer to solve a multiplication equation. | Student is able to provide an answer to solve a multiplication equation and explain a strategy. | Student is able to provide additional strategies to solve a multiplication fact. |

**N4.4** Demonstrate an understanding of multiplication (2- or 3-digit by 1-digit) by using personal strategies for multiplication, with and without concrete materials, using arrays to represent multiplication, connecting concrete representations to symbolic representations, estimating products and solving problems.

| Beginning (1)  | Approaching (2)  | Proficiency (3)   | Mastery (4)   |
|--|--|---|---|
| Student needs assistance to determine the result of a multiplication equation. | Student is able to use concrete representations/drawings to solve a multiplication equation. | Student is able to estimate and solve a 2 or 3 digit multiplication equation. | Student is able to solve a multiplication problem and explain their strategy. |

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**N4.5** Demonstrate an understanding of division (1-digit divisor and up to 2-digit dividend) to solve problems by using personal strategies for dividing with and without concrete materials, estimating quotients, explaining the results of dividing by 1, solving problems involving division of whole numbers, and relating division to multiplication.

| Beginning (1)  | Approaching (2)  | Proficiency (3)  | Mastery (4)  |
|--|--|--|--|
| Student needs assistance to determine the result of a division equation. | Student is able to use concrete representations/drawings to solve a division equation. | Student is able to estimate and solve a 2 or 3 digit division problem using a personal strategy. | Student is able to provide additional strategies to solve a division fact. |

**N4.6** Demonstrate an understanding of fractions less than or equal to one by using concrete and pictorial representations to name and record fractions for the parts of a whole or a set, compare and order fractions, model and explain that for different wholes, two identical fractions may not represent the same quantity, and provide examples of where fractions are used.

| Beginning (1)                               | Approaching (2)                               | Proficiency (3)                                 | Mastery (4)  |
|---|---|---|--|
| Student needs assistance to name fractions. | Student is able to name and record fractions. | Student is able to compare and order fractions. | Student is able to provide an example of when 2 identical fractions may not represent the same quantity. |

**N4.7** Demonstrate an understanding of decimal numbers in tenths and hundredths (pictorially, orally, in writing, and symbolically) by describing, representing, and relating to fractions.

| Beginning (1)                                      | Approaching (2)  | Proficiency (3)                                  | Mastery (4)  |
|--|--|--|--|
| Student needs assistance to write decimal numbers. | Student is able to write decimal numbers from a drawing. | Student is able to relate decimals to fractions. | Student is able to provide everyday examples of decimal numbers. |

**N4.8a** Demonstrate an understanding of addition of decimals limited to hundredths (concretely, pictorially, and symbolically) by using compatible numbers, estimating sums and differences, using mental math strategies, and solving problems.

| Beginning (1)                                       | Approaching (2)  | Proficiency (3)  | Mastery (4)   |
|---|--|--|---|
| Student needs assistance adding decimals to 100ths. | Student can add decimals limited to 100ths that do not require regrouping. | Student is able to add decimals limited to 100ths using a regrouping strategy. | Student is able to solve situational addition story problems. |

**N4.8b** Demonstrate an understanding of subtraction of decimals limited to hundredths (concretely, pictorially, and symbolically) by using compatible numbers, using mental math strategies, and solving problems.

| Beginning (1)  | Approaching (2)   | Proficiency (3)   | Mastery (4)  |
|--|---|---|--|
| Student needs assistance subtracting decimals to 100ths. | Student can subtract decimals limited to 100ths that do not require regrouping. | Student is able to subtract decimals limited to 100ths using a regrouping strategy. | Student is able to solve situational subtraction story problems. |

**N4.8c** Demonstrate an understanding of addition and subtraction of decimals limited to hundredths (concretely, pictorially, and symbolically) by estimating sums and differences.

| Beginning (1)   | Approaching (2)                                  | Proficiency (3)  | Mastery (4)   |
|---|--|--|---|
| Student needs assistance to round decimals to 100ths. | Student is able to estimate sums or differences. | Student is able to use a personal strategy to estimate an addition or subtraction problem. | Student is able to estimate an addition or subtraction problem and justify their reasoning. |

## Part B: Pattern & Relations Strand

**P4.1** Demonstrate an understanding of patterns and relations by identifying and describing patterns and relations in a chart, table or diagram, reproducing patterns and relations in a chart, table, or diagram using manipulatives, creating charts, tables, or diagrams to represent patterns and relations, and solving problems involving patterns and relations.

| Beginning (1)   | Approaching (2)   | Proficiency (3)  | Mastery (4)  |
|---|---|--|--|
| Student needs assistance to extend a pattern and identify the pattern rule. | Student is able to describe a pattern or relation in a chart, table or diagram. | Student is able to create a chart, table or diagram to represent a pattern and state the pattern rule. | Student is able to solve a problem involving patterns and relations. |

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**P4.2** Demonstrate an understanding of equations involving symbols to represent an unknown value by writing an equation to represent a problem and solving one step equations. (addition, subtraction, multiplication, division).

| Beginning (1)  | Approaching (2)   | Proficiency (3)                              | Mastery (4)  |
|--|---|--|--|
| Student needs assistance to solve one step addition/subtraction equations. | Student is able to solve one step addition/subtraction equations. | Student is able to solve one step equations. | Student is able to create and solve one step equations related to situational questions. |

## Part C: Shape & Space Strand

**SS4.1a** Demonstrate an understanding of time by reading and recording time using digital and analog clocks (including 24 hour clocks).

| Beginning (1)   | Approaching (2)  | Proficiency (3)  | Mastery (4)  |
|---|--|--|--|
| Student needs assistance to state the number of hours in a day. | Student is able to read and record time using a digital clock. | Student is able to read and record time using an analog clock. | Student is able to use an analog clock to give digital and 24 hour time. |

**SS4.1b** Demonstrate an understanding of time by reading and recording calendar dates in a variety of formats.

| Beginning (1)   | Approaching (2)   | Proficiency (3)  | Mastery (4)   |
|---|---|--|---|
| Student needs assistance to state the number of months in a year. | Student is able to read dates written in format yyyy/mm/dd. | Student is able to write dates in a variety of formats when given a year, date, and month. | Student is able to identify possible interpretations of a date. |

**SS4.2** Demonstrate an understanding of area of regular and irregular 2-D shapes by:

- recognizing that area is measured in square units
- selecting and justifying referents for the units cm<sup>2</sup> or m<sup>2</sup>
- estimating area by using referents for cm<sup>2</sup> or m<sup>2</sup>
- determining and recording area (cm<sup>2</sup> or m<sup>2</sup>)
- constructing different rectangles for a given area (cm<sup>2</sup> or m<sup>2</sup>) in order to demonstrate that many different rectangles may have the same area.

| Beginning (1)   | Approaching (2)  | Proficiency (3)  | Mastery (4)  |
|---|--|--|--|
| Student needs assistance in determining a referent or calculating area. | Student is able to select an appropriate referent in cm <sup>2</sup> . | Student can determine and record the area of 2-D shapes. | Student is able to construct/draw different rectangles for a given area. |

**SS 4.3**Demonstrate an understanding of rectangular and triangular prisms by:

- identifying common attributes
- comparing
- constructing models.

| Beginning (1)  | Approaching (2)  | Proficiency (3)   | Mastery (4)   |
|--|--|---|---|
| Students need help identifying the rectangular and triangular prism. | Student can identify a rectangular and triangular prism. | Student is able to compare prisms using words like face, edge, etc. | Student is able to construct nets for rectangular or triangular prisms. |

**SS4.4** Demonstrate an understanding of line symmetry by:

- identifying symmetrical 2-D shapes
- creating symmetrical 2-D shapes
- drawing one or more lines of symmetry in a 2-D shape.

| Beginning (1)  | Approaching (2)                                  | Proficiency (3)  | Mastery (4)   |
|--|--|--|---|
| Students need assistance in identifying a symmetrical shape. | Student is able to identify a symmetrical shape. | Student is able to create a shape that is symmetrical. | Student is able to identify multiple lines of symmetry. |

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## Part D: Statistics & Probability Strand

**SP4.1** Demonstrate an understanding of many-to-one correspondence by:

- comparing correspondences on graphs
- justifying the use of many-to-one correspondences
- interpreting data shown using a many-to-one correspondence
- creating bar graphs and pictographs using many-to-one correspondence.

| Beginning (1)  | Approaching (2)   | Proficiency (3)  | Mastery (4)  |
|--|---|--|--|
| Student needs assistance understanding many to one correspondence. | Student is able to identify whether a graph is many to one or one-to-one. | Student is able to organize and represent data on a bar graph or pictograph. | Student is able to analyze interpretations of graphs using many to one correspondence. |