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## Instructions

## Administering the Assessments

1. This assessment has been developed with the intention of being split up into individual outcomes and given upon completion of instruction/units throughout the year and not as a comprehensive test in June.
2. The division expectation is for the assessment to be given as both a pre (formative) and post (summative) assessment which will be entered into SRPSD database.
3. Use professional judgment on whether this assessment is given orally or in written form. The intent is to assess mathematical understanding.
4. Refer to the last few pages for any paper manipulatives needed to administer certain questions. Teachers will have to print off a copy for their class.
5. Calculator use is only allowed where indicated.
6. In the case that a student answers a level 4 question correctly but misses the level 2 or 3 , the teacher will need to:
a) reassess
b) use professional judgment (teacher knows student best).
7. This assessment is not intended to assess ELA reading or writing outcomes therefore questions can be read to students and answers can be scribed when needed.
8. The corrected pre-tests are not to be showed to the students as it will affect posttest results.

## Part A: Number Strand

N4.1a Demonstrate understanding of whole numbers to 10000 by representing and describing.

| Beginning (1) | Approaching (2) | Proficiency (3) | Mastery (4) |
| :--- | :--- | :--- | :--- |
| Student needs | Student is able to <br> assistance to use base <br> ten blocks to represent | Student is able to represent <br> repent a quantity <br> a quantity to 10000 using base <br> a quantity to 10000. | Student is able to represent <br> symbolic representation. <br> ten blocks. | | quantity to 10000 in a <br> nondandard arrangement <br> and explain. |
| :--- |

1. Draw a picture to represent 3234 .
2. Represent 3234 in expanded form.
3. Oliver's answer for \#2 was $4+230+3000$. Does Oliver's answer represent the same amount? Explain
$\qquad$

## Part A: Number Strand

N4.1b Demonstrate understanding of whole numbers to 10000 by comparing and ordering.

| Beginning (1) | Approaching (2) | Proficiency (3) | Mastery (4) |
| :--- | :--- | :--- | :--- |
| Student needs <br> assistance to compare <br> numbers to 10000. | Student is able to <br> compare numbers to <br> 10000. | Student is able to order a <br> set of numbers to 10000. | Student is able to order a set <br> of numbers to 10000 and <br> explain their strategy. |

1. Compare these two numbers using "greater than" or "less than".

$$
4254 \quad 4425
$$

2. Order the following numbers (least to greatest or greatest to least).
425442454425
3. Chloe ordered these numbers from greatest to least. Explain the strategy she used. 5422, 5014, 4475
$\qquad$

## Part A: Number Strand

N4.2a Demonstrate an understanding of addition of whole numbers with answers to 10000 (limited to 3 and 4 -digit numerals).

| Beginning (1) | Approaching (2) | Proficiency (3) | Mastery (4) |
| :--- | :--- | :--- | :--- |
| Student needs | Student can add numbers to | Student is able to add | Student is able to solve |
| assistance adding | 10000 that do not require | numbers to 10000 using a <br> situational addition <br> numbers to 10000. | regrouping. |

1. a) Solve the following number sentence.

$$
7436+2141
$$

b) Solve the following number sentence.

$$
2436+217
$$

2. How many people went to the fair? 3642 people went to the fair on Friday. 4795 people went on Saturday.

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## Part A: Number Strand

N4.2b Demonstrate an understanding of subtraction of whole numbers with answers to 10000 (limited to 3 and 4-digit numerals)

| Beginning (1) | Approaching (2) | Proficiency (3) | Mastery (4) |
| :--- | :--- | :--- | :--- |
| Student needs | Student can subtract | Student is able to subtract | Student is able to solve <br> assistance subtracting <br> numbers to 10000. |
| numbers to 10000 that do <br> not require regrouping. | numbers to 10000 using a <br> regrouping strategy. | story problems. <br> notrab |  |

1. a) Solve the following:

$$
6789-5432
$$

b) Solve the following:
$3454-1999$
2. In 1971, the Prince Albert Raiders were formed. How many years have the Raiders been around?

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## Part A: Number Strand

N4.2c Demonstrate understanding of estimation using addition or subtraction to 10000.

| Beginning (1) | Approaching (2) | Proficiency (3) | Mastery (4) |
| :--- | :--- | :--- | :--- |
| Student needs <br> assistance to round <br> numbers to 10000. | Student is able to round <br> numbers to 10000. | Student is able to use a <br> personal strategy to <br> estimate an addition or <br> subtraction problem. | Student is able to estimate an <br> addition or subtraction <br> problem and justify their <br> reasoning. |

1. For a read-a-thon, Natalie read 786 pages, Kevin read 815 pages, Mario read 623 pages, and altogether, they read over 2000 pages.
a) Is 2000 exact or an estimate? How do you know?

b) About how many more pages did Kevin read than Mario?
2. Justify your answer.
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## Part A: Number Strand

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 | Student is able to | Student is able to provide an | Student is able to |
| to determine the result of | provide an answer to |  |  |
| a multiplication equation. | answer to solve a <br> solve a multiplication <br> equation. | multiplication equation and <br> explain a strategy. | strategies to solve a <br> multiplication fact. |

1. Solve.

$$
6 \times 7
$$

2. What strategy did you use? If you know it automatically what strategy could you use?
3. Jane was given the question $6 \times 8$ and asked to explain her strategy. She explained that she skipped counted by 8 six times and got the answer of 48 . She wants you to help come up with a more efficient way to solve 6 x 8 . What is your strategy?
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## Part A: Number Strand

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 | Student is able to use | Student is able to | Student is able to solve a |
| assistance to | concrete | estimate and solve a 2 | multiplication problem |
| determine the result of |  |  |  |
| a multiplication | representations/drawings to <br> or 3 digit <br> solve a multiplication <br> equation. | multiplication <br> equation. | and explain their <br> strategy. |

1. Estimate the product.
$5 \times 31$
2. Solve.

## $5 \times 31$

3. Explain the strategy for solving.
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## Part A: Number Strand

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 <br> assistance to <br> determine the result <br> of a division equation. | Student is able to use <br> concrete <br> representations/drawings <br> to solve a division equation. | Student is able to estimate <br> and solve a 2 or 3 digit <br> division problem using a <br> personal strategy. | Student is able to <br> provide additional <br> strategies to solve a <br> division fact. |

1. How many canoes will be needed? Grade 4 students are going on a canoe trip. There are 35 students in the class. 5 students can go in each canoe. Draw a picture to solve.

2. a) Estimate.

$$
49 \div 5
$$

b) Solve

$$
49 \div 5
$$

3. Ashley was given the question $70 \div 7$ and asked to explain her strategy. She explained that she used long division to get an answer of 7 . She wants you to help come up with a more efficient way to solve $70 \div 7$. What is your strategy?
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## Part A: Number Strand

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 <br> assistance to name <br> fractions. | Student is able to <br> name and record <br> fractions. | Student is able to <br> compare and order <br> fractions. | Student is able to provide an <br> example of when 2 identical <br> fractions may not represent the <br> same quantity. |

1. Name the following fractions.

2. Order the following numbers.

$$
\frac{1}{2}, 0,1, \frac{2}{3}, \frac{3}{4}, \frac{3}{8}
$$

3. Lucy ate half a pizza and Matt ate half a pizza. However, Matt ate more pizza. Explain how that's possible.

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## Part A: Number Strand

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 <br> assistance to write <br> decimal numbers. | Student is able to write <br> decimal numbers from a <br> drawing. | Student is able to relate <br> decimals to fractions. | Student is able to provide <br> everyday examples of <br> decimal numbers. |

1. Write the decimal that represents this picture.

2. Convert $\mathbf{0 . 0 9}$ to a fraction.
3. Provide an example of everyday context in which tenths or hundredths are used.
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## Part A: Number Strand

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 <br> assistance adding <br> decimals to 100ths. | Student can add decimals <br> limited to 100ths that do <br> not require regrouping. | Student is able to add <br> decimals limited to 100ths <br> using a regrouping strategy. | Student is able to solve <br> situational addition <br> story problems. |

1. Solve.

$$
2.43+1.52
$$

2. Solve.

$$
14.86+2.7
$$

3. Kim had 2.6 m of blue fabric and 4.54 m of yellow fabric.

How much fabric did Kim have altogether?

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## Part A: Number Strand

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 | Student can subtract | Student is able to subtract | Student is able to |
| assistance | decimals limited to 100ths | decimals limited to 100ths | solve situational |
| subtracting decimals | that do not require | using a regrouping | subtraction story |
| to 100ths. | regrouping. | strategy. | problems. |

1. Solve.
9.83-7.21
2. Solve.
$8.8-2.72$
3. How much mass did the puppy gained? Kelly adopted a puppy from the PA SPCA. Its mass was 4.7 kg . At the $1^{\text {st }}$ visit to the vet, the puppy had a mass of 5.4 kg .

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## Part A: Number Strand

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 <br> assistance to round <br> decimals to 100ths. | Student is able to <br> estimate sums or <br> differences. | Student is able to use a <br> personal strategy to <br> estimate an addition or <br> subtraction problem. | Student is able to estimate an <br> addition or subtraction <br> problem and justify their <br> reasoning. |

1. Will the sum be greater than or less than 3 ?

$$
2.1+0.4
$$

2. a) Estimate the sum
$4.16+3.92$
b) Estimate the difference

$$
8.9-6.2
$$

3. a) Use your estimation skills, does Tyson have enough money to buy the muffins? Tyson has $\$ 7.00$. Tyson wants to buy some muffins. The price is $\$ 5.95$ plus tax. The tax is $\$ 0.36$.

b) How do you know?
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## 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 <br> to extend a pattern and <br> identify the pattern rule. | Student is able to <br> describe a pattern or <br> relation in a chart, table <br> or diagram. | Student is able to create a <br> chart, table or diagram to <br> represent a pattern and <br> state the pattern rule. | Student is able to <br> solve a problem <br> involving patterns <br> and relations. |

1. Describe the pattern rule in the chart.

| Figure | Counters |
| :--- | :--- |
| 1 | 3 |
| 2 | 7 |
| 3 | 11 |
| 4 | 15 |

2. 


a) Create a table to represent the area of these figures.

b) State the pattern rule.
c) How many blocks would be the $6^{\text {th }}$ figure?
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## Part B: Pattern \& Relations Strand

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 | Student is able to solve | Student is able to | Student is able to create and <br> to solve one step <br> one step <br> addition/subtraction <br> equations. |
| addition/subtraction one step equations <br> equate | equations. | related to situational <br> questions. |  |

1. Solve.

$$
\Delta+16=37
$$

2. Solve

$$
\Delta \div 8=3
$$

3. How many muffin pans will Tina need? She needs to bake 48 muffins for the bake sale. She only has muffin pans that hold 6 muffins. Write 2 equations (one multiplication and one division) to represent the story.

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## 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 <br> to state the number of <br> hours in a day. | Student is able to read <br> and record time using <br> a digital clock. | Student is able to read <br> and record time using an <br> analog clock. | Student is able to use an <br> analog clock to give digital <br> and 24 hour time. |

1. The digital time is $2: 46$.
a) What is the hour?
b) What are the minutes?
2. Write the time that this clock represents?

3. Write this time in digital time and 24 hour time.


Digital Time: $\qquad$

24 Hour Time: $\qquad$
$\qquad$

## Part C: Shape \& Space Strand

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 <br> to state the number of <br> months in a year. | Student is able to read <br> dates written in <br> format yyyy $/ \mathrm{mm} / \mathrm{dd}$. | Student is able to write <br> dates in a variety of formats <br> when given a year, date, and <br> month. | Student is able to identify <br> possible interpretations <br> of a date. |

1. Write the date using words and numbers.

2015/09/27
2. a) State the date represented on the calendar.

| MARCH 2012 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| SUN | MON | TUE | WED | THU | FRI |
| SAT |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  | 23 |
|  |  |  |  |  |  |

b) Using the above calendar record the other $\mathbf{3}$ possible ways to represent the date.
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## Part C: Shape \& Space Strand

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 $\mathrm{cm}^{2}$ or $\mathrm{m}^{2}$
- estimating area by using referents for $\mathrm{cm}^{2}$ or $\mathrm{m}^{2}$
- determining and recording area ( $\mathrm{cm}^{2}$ or $\mathrm{m}^{2}$ )
- constructing different rectangles for a given area ( $\mathrm{cm}^{2}$ or $\mathrm{m}^{2}$ ) 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 | Student is able to select | Student can determine | Student is able to |
| determining a referent or | an appropriate referent | and record the area of <br> construct/draw different <br> calculating area. | 2-D shapes. |
| rectangles for a given area. |  |  |  |

1. State a referent for $\mathrm{cm}^{2}$.
2. Find the area of the shape.

3. The area of a rectangular garden is $27 \mathrm{~m}^{2}$. The garden is 9 m long.

Draw a model of the garden on grid paper. $1 \mathrm{~m}^{2}=1$ square

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## Part C: Shape \& Space Strand

SS 4.3Demonstrate 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 <br> identifying the <br> rectangular and <br> triangular prism. | Student can identify a <br> rectangular and <br> triangular prism. | Student is able to compare <br> prisms using words like face, <br> edge, etc. | Student is able to <br> construct nets for <br> rectangular or triangular <br> prisms. |

1. Use the pictures below:

a) Identify a triangular prism.
b) Identify a rectangular prism.
c) Write one similarity between a triangular and a rectangular prism.
d) Write one difference between a triangular and a rectangular prism.
2. Draw the net for a triangular prism.
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## Part C: Shape \& Space Strand

SS4.4 Demonstrate an understanding of line symmetry by:

- identifying symmetrical 2-D shapes
- creating symmetrical $2-\mathrm{D}$ shapes
- drawing one or more lines of symmetry in a 2-D shape.

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

1. Circle the shape that has symmetry.

2. Draw a shape that is symmetrical, include a line of symmetry.
3. Draw the lines of symmetry in the following shape.

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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 <br> understanding many to <br> one correspondence. | Student is able to <br> identify whether a <br> graph is many to one <br> or one-to-one. | Student is able to organize <br> and represent data on a bar <br> graph or pictograph. | Student is able to analyze <br> interpretations of graphs <br> using many to one <br> correspondence. |

1. Is this a many-to-one or one-to-one graph?


Name: $\qquad$
2. This table shows the number of earthquakes per year, from 1994 to 1999.

| Year | Number of Earthquakes |
| :---: | :---: |
| 1994 | 15 |
| 1995 | 25 |
| 1996 | 22 |
| 1997 | 20 |
| 1998 | 16 |
| 1999 | 23 |

a) Draw a bar graph to show this data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
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Scale: $\qquad$
b) Write a question you could answer by looking at the graph. Answer the question

