Math Mastery Scale

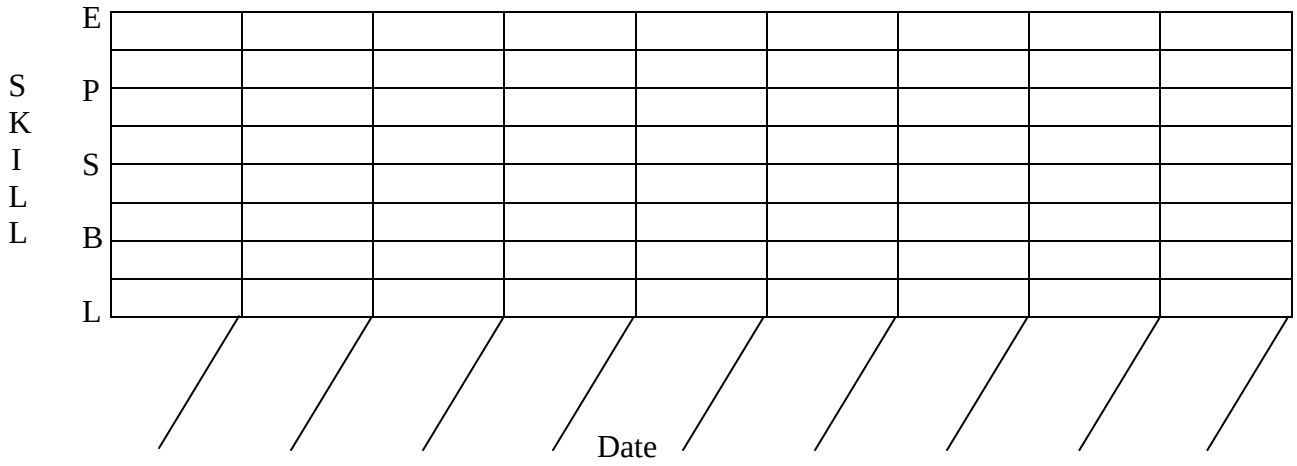
Skill	Descriptor
Excelling **A+**	I know (can do) it well enough to make connections that weren't taught, and I'm right about those connections.
thriving **A**	I know (can do) it well enough to make connections that weren't taught, but I'm not always right about those connections.
Proficient **A-**	I know (can do) everything that was taught (the easy parts and the harder parts) without making mistakes.
gaining Stride **B+**	I know (can do) all the easy parts and some (but not all) of the harder parts.
Satisfactory **B**	I know (can do) all the easy parts, but I don't know (can't do) the harder parts yet.
developing **C+**	I know (can do) some of the easier parts, but I make some mistakes.
Basic **C**	With help I know (can do) some of the harder parts and some of the easier parts.
emerging **N**	With help, I know (can do) some of the easier parts but not the harder parts.
Limited **N**	I don't know (can't do) any of it.

Strand: Number **General Outcome:** Develop number sense.

7N1. Divisibility Rules – Determine and explain why a number is divisible by 2, 3, 4, 5, 6, 8, 9, or 10, and why a number cannot be divided by zero.

- ✓ I can use divisibility rules to determine if a number can be divided by 2, 3, 4, 5, 6, 8, 9, 10.
- ✓ I can explain why a number can not be divided by zero.
- ✓ I can sort numbers based on their divisibility using various organizers.
- ✓ I can use divisibility rules to find factors.
- ✓ I can explain the difference between factors and multiples, prime numbers and composite numbers.

7N1 - Divisibility Rules



Reflections

My goal is:		
Date	**Specific Things I Will Do To Improve:**	**Teacher Initial**

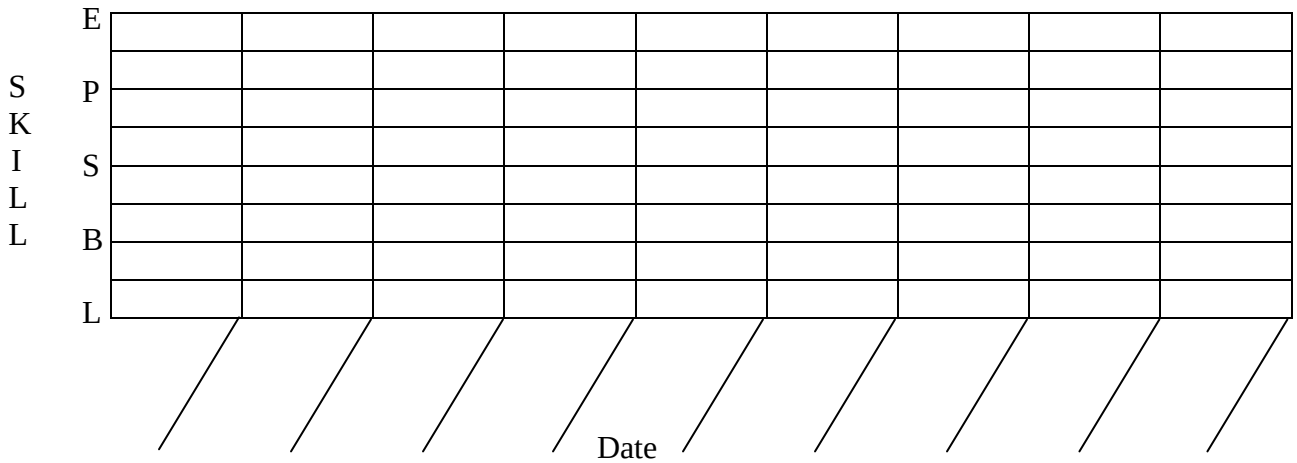
Math 7 Name: _____

Strand: Number **General Outcome:** Develop number sense.

7N2. Decimal Operations – Demonstrate an understanding of the addition, subtraction, multiplication, and division of decimals to solve problems.

- ✓ I can add, subtract, multiply, and divide decimal numbers, without technology.
- ✓ I can determine whether to add, subtract, multiply or divide, in a problem situation.
- ✓ I can use estimation to justify my answer.
- ✓ I can apply the use of order of operations correctly when evaluating expressions with decimals.

7N2 - Decimal Operations



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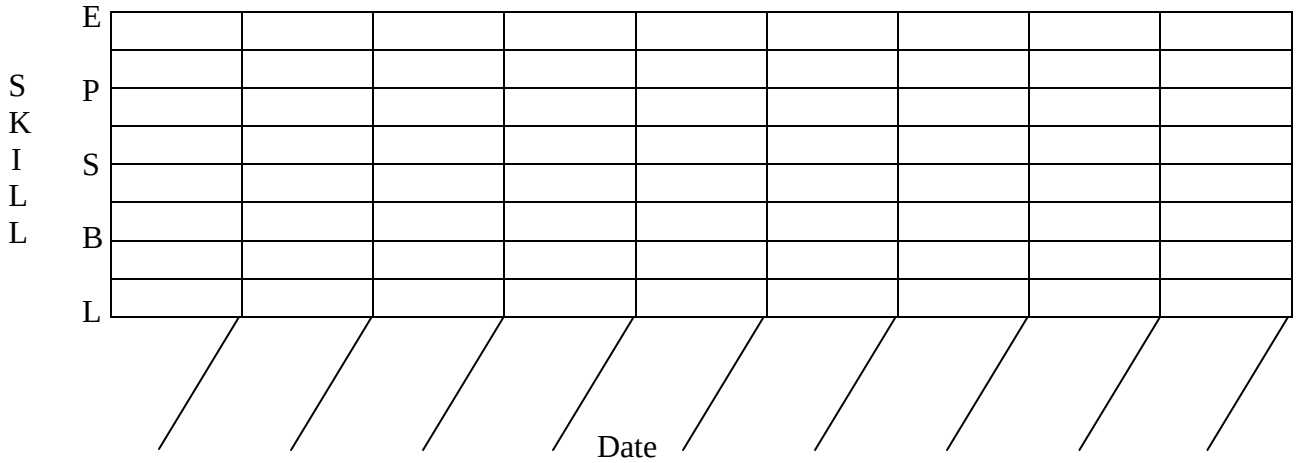
Math 7 Name: _____

Strand: Number **General Outcome:** Develop number sense.

7N3. Percents – Solve problems involving percents from 1% to 100%.

- ✓ I can calculate a percentage.
- ✓ I can express percents as fractions and decimals.
- ✓ I can calculate percent of a number.
- ✓ I can use percent calculations appropriately in problem situations (such as, sales tax, discounts, tips, total costs, percent increase and decrease, etc.)

7N3 - Percents



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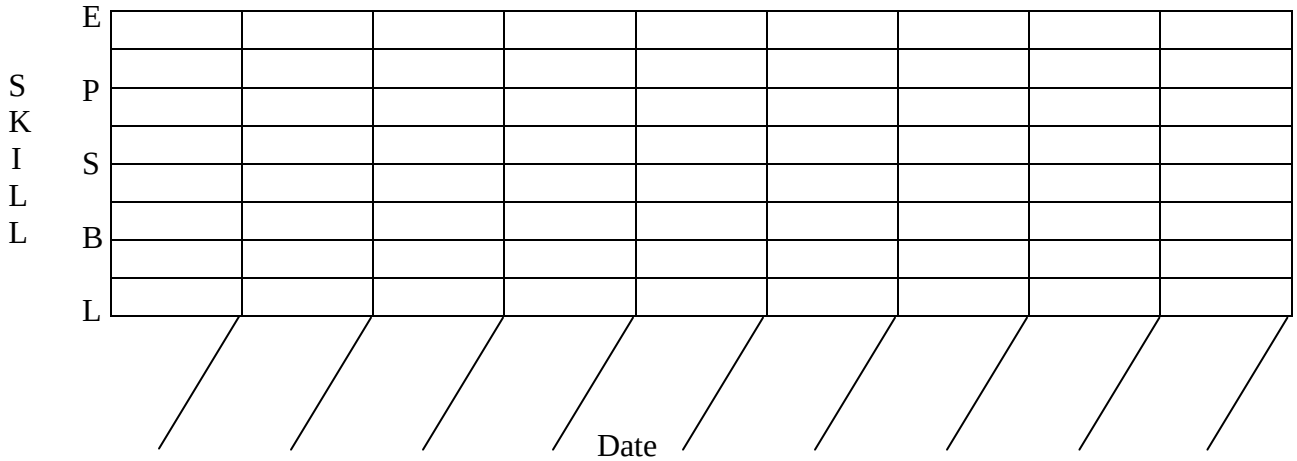
Strand: Number **General Outcome:** Develop number sense.

7N4. Fraction Decimal Conversions – Demonstrate an understanding of the relationship between positive terminating decimals and positive fractions and between positive repeating decimals and positive fractions.

- ✓ I can express fractions as decimals.
- ✓ I can express terminating decimals as fractions.
- ✓ I can express repeating decimals as fractions.
- ✓ I can write a repeating decimals using bar notation.
- ✓ I can determine when it is appropriate to round, and to what place value.

7N4 - Fraction Decimal Conversions



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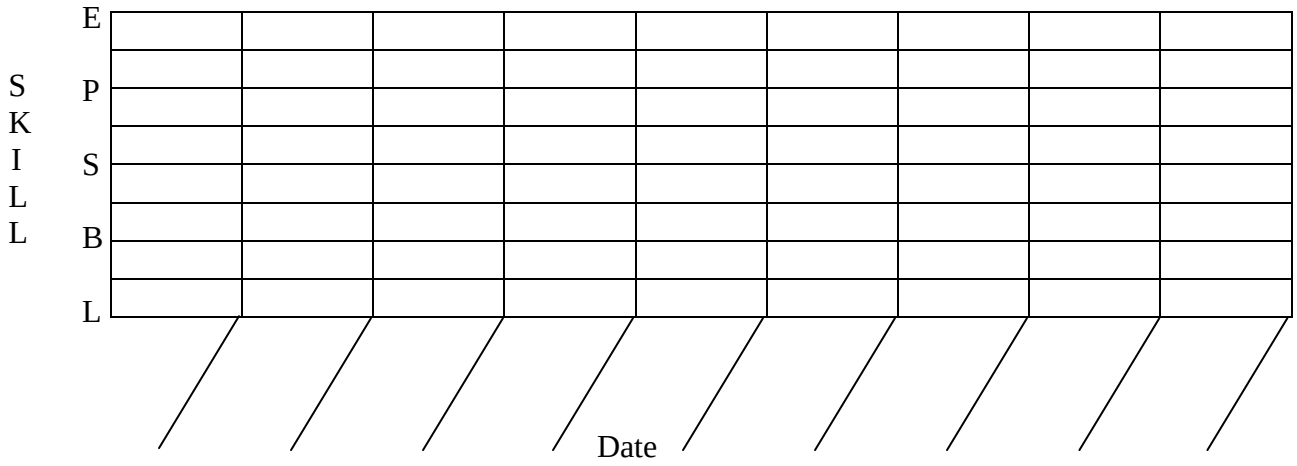
Strand: Number **General Outcome:** Develop number sense.

7N5. Addition & Subtraction of Fractions – Demonstrate an understanding of adding and subtracting positive fractions and mixed numbers, with like and unlike denominators, concretely, pictorially, and symbolically.

- ✓ I can create equivalent fractions.
- ✓ I can simplify or reduce fractions to their lowest terms.
- ✓ I can model the addition and subtraction of fractions concretely, pictorially, and symbolically.
- ✓ I can use equivalent fractions to add and subtract fractions.
- ✓ I can solve problems involving fractions and determine if the solution is reasonable.

7N5 - Addition & Subtraction of Fractions



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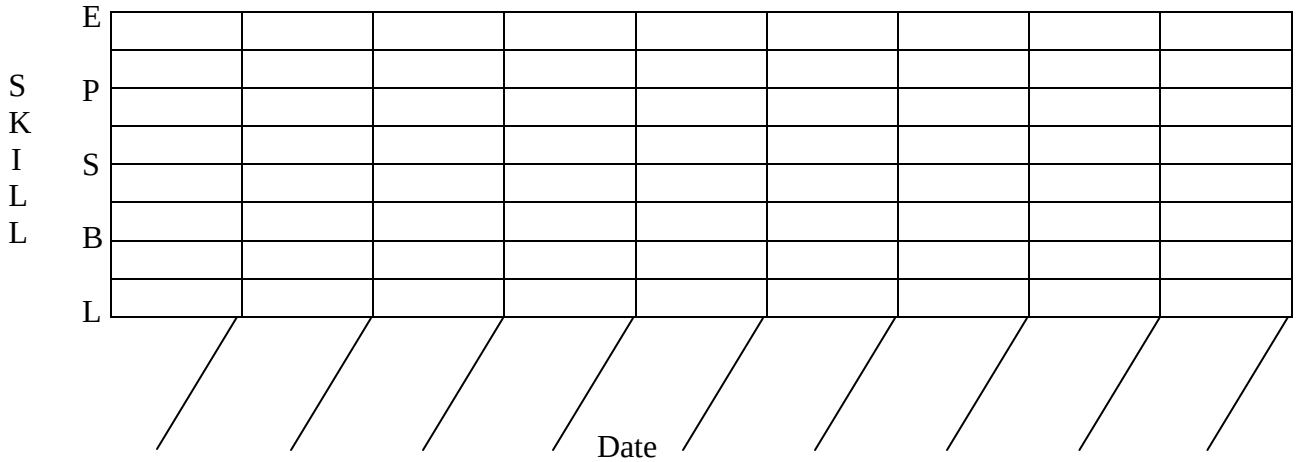
Strand: Number **General Outcome:** Develop number sense.

7N6. Addition & Subtraction of Integers – Demonstrate an understanding of addition and subtraction of integers, concretely, pictorially, and symbolically.

- ✓ I can demonstrate concretely and pictorially the zero principle.
- ✓ I can add and subtract integers concretely and pictorially, and record the process symbolically.
- ✓ I can solve problems involving the addition and subtraction of integers.

7N6 - Addition & Subtraction of Integers



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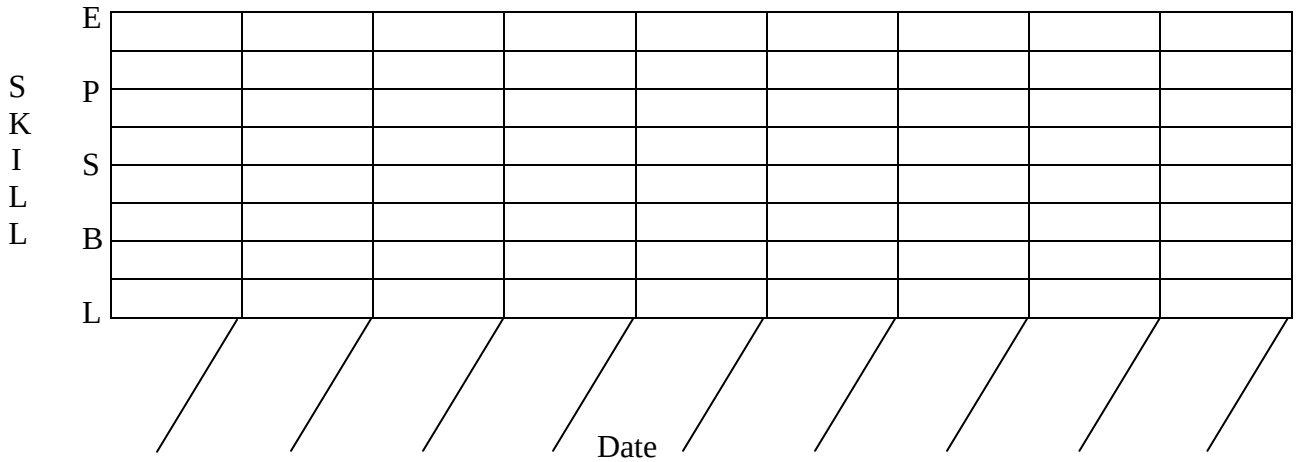
Strand: Number **General Outcome:** Develop number sense.

7N7. Value Comparison – Compare and order positive fractions, positive decimals (to thousandths) and whole numbers by using: benchmarks, place value, equivalent fractions and/or decimals.

- ✓ I can compare whole numbers, fractions, and decimals.
- ✓ I can order whole numbers, fractions, and decimals.
- ✓ I can correctly place whole numbers, fractions, and decimals on a number line.

7N7 - Value Comparison



Reflections

My goal is:		
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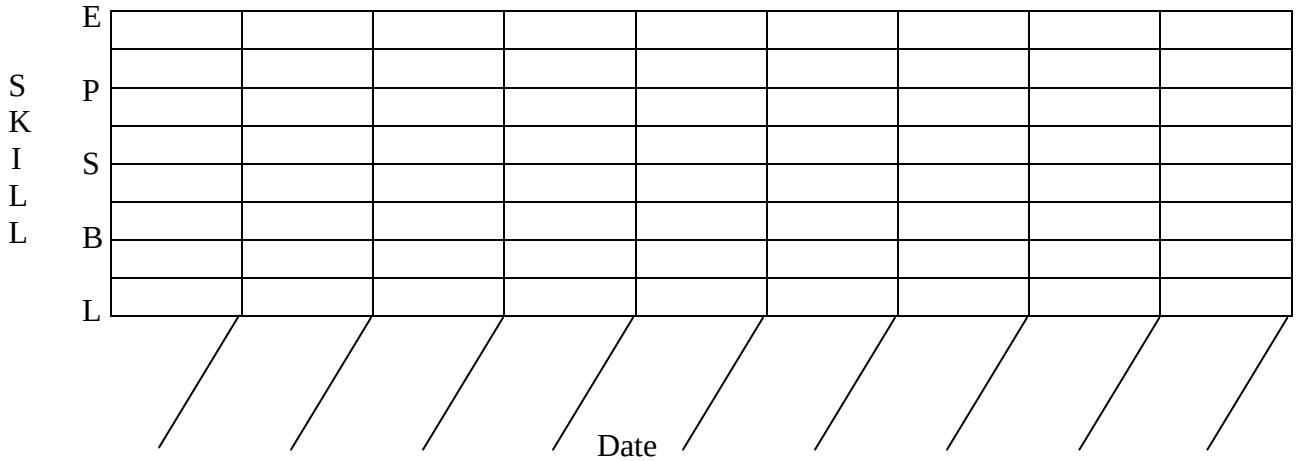
Strand: Patterns & Relations
General Outcome: Use patterns to describe the world and to solve problems.
7PR1. Patterns & Rules – Demonstrate an understanding of oral and written patterns and their equivalent linear relations.

- ✓ I can identify and predict the next stage in a pattern.
- ✓ I can describe the relationship between the stage number and the output of the pattern.
- ✓ I can create an algebraic expression to represent a pattern.
- ✓ I can create a pattern from a given algebraic expression.

7PR1 - Patterns & Rules



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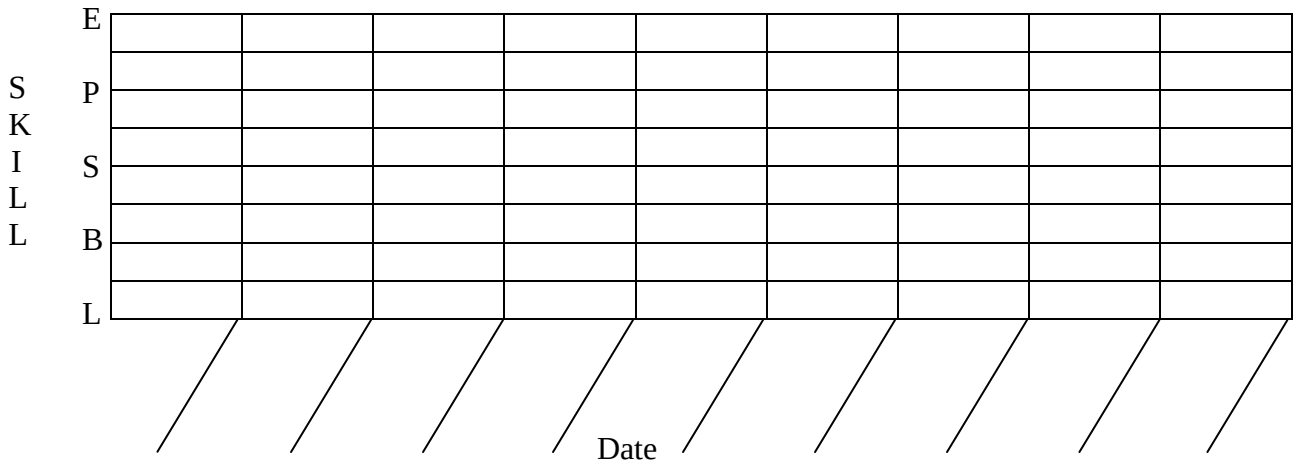
Strand: Patterns & Relations
General Outcome: Use patterns to describe the world and to solve problems.
7PR2. Table of Values – Create a table of values from a linear relation, graph the table of values, and analyze the graph to draw conclusions and solve problems.

- ✓ I can substitute into an equation to create a table of values.
- ✓ I can graph a table of values.
- ✓ I can use a graph to solve problems.

7PR2 - Table of Values



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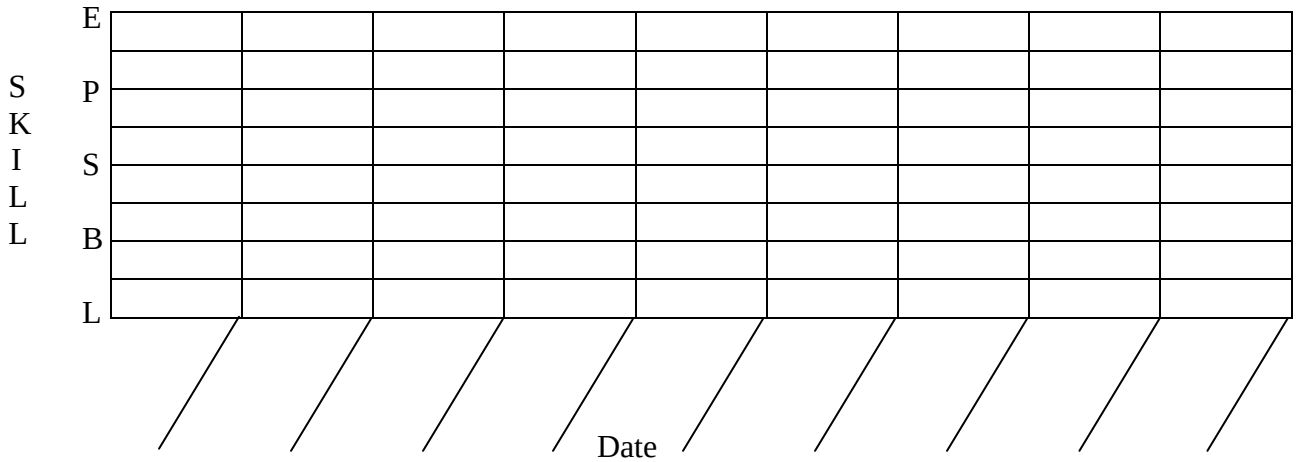
Strand: Patterns & Relations
General Outcome: Represent algebraic expressions in multiple ways.
7PR3. Preservation of Equality – Demonstrate an understanding of preservation of equality by: modeling preservation of equality, concretely, pictorially, and symbolically, applying preservation of equality to solve equations.

- ✓ I can model preservation of equality concretely, pictorially, and symbolically.
- ✓ I can solve equations using preservation of equality.

7PR3 - Preservation of Equality



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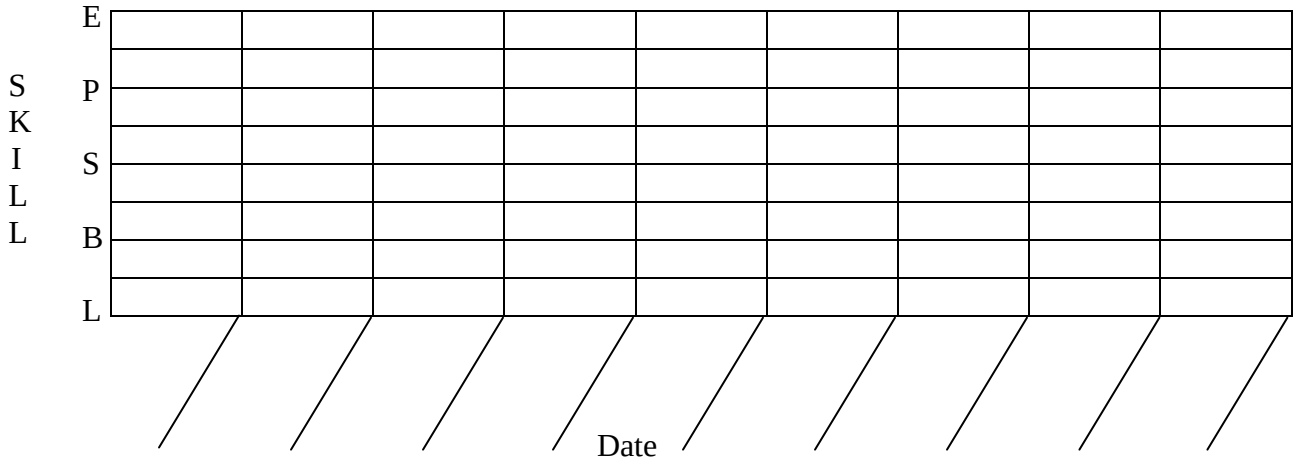
Strand: Patterns & Relations
General Outcome: Represent algebraic expressions in multiple ways.
7PR4. Expressions & Equations – Explain the difference between an expression and an equation.

- ✓ I can explain the difference between an expression and an equation.
- ✓ I can identify and provide examples of constant terms, numerical coefficients, and variables.
- ✓ I can explain how constant terms, numerical coefficients, and variables are used to create an algebraic expression.

7PR4 - Expressions & Equations



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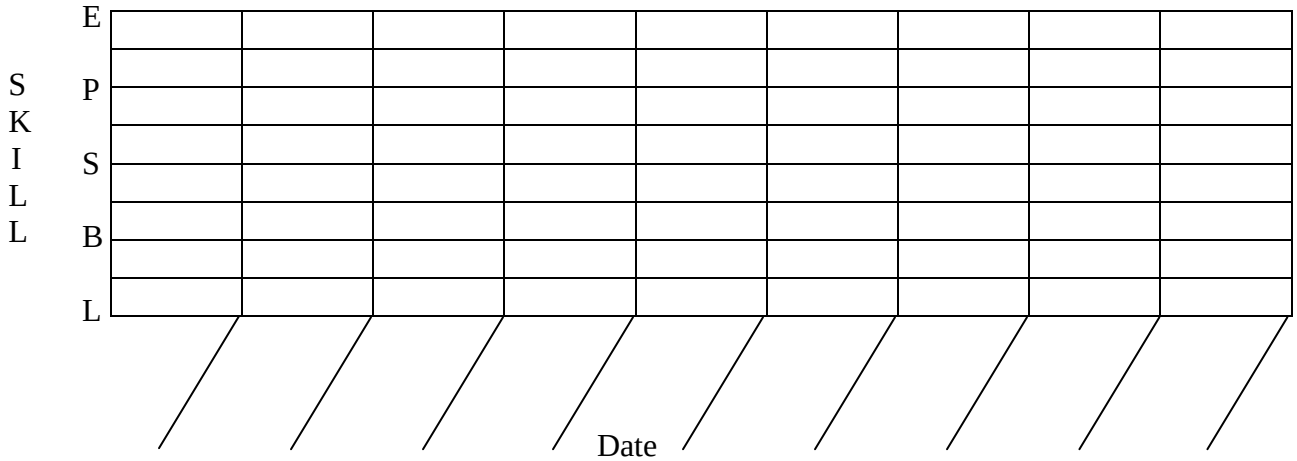
Strand: Patterns & Relations
General Outcome: Represent algebraic expressions in multiple ways.
7PR5. Evaluating Expressions – Evaluate an expression, given the value of the variable(s).

- ✓ I can use substitution to evaluate an expression.

7PR5 - Evaluating Expressions



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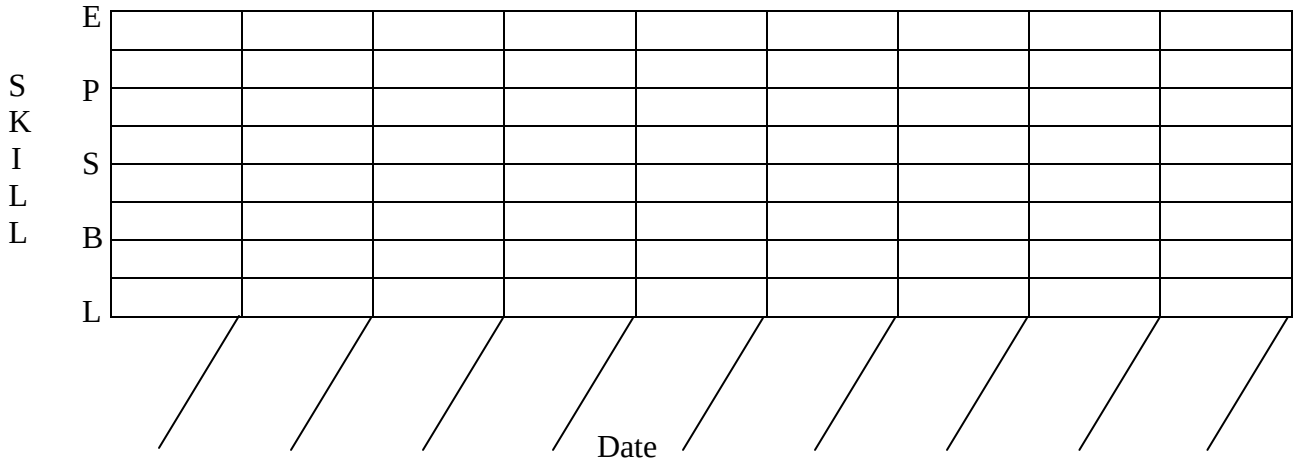
Strand: Patterns & Relations

General Outcome: Represent algebraic expressions in multiple ways.

7PR6. Solving Equations I – Model and solve, concretely, pictorially, and symbolically, problems that can be represented by one-step linear equations of the form $x + a = b$, where a and b are integers.

- ✓ I can represent a given problem with an algebraic equation and solve concretely, pictorially, and symbolically.
- ✓ I can verify the solution to an algebraic equation.

7PR6 - Solving Equations I



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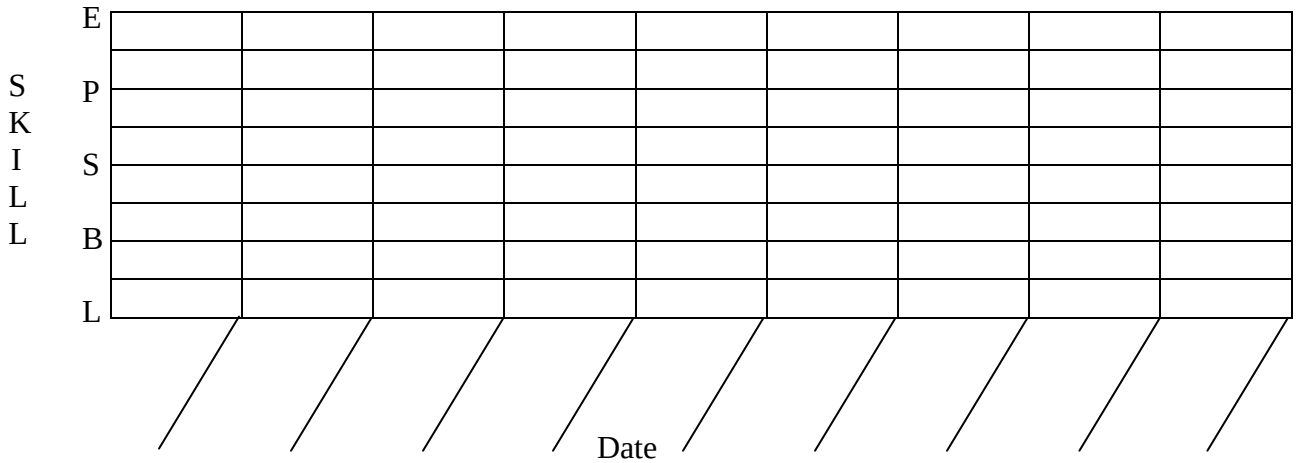
Strand: Patterns & Relations
General Outcome: Represent algebraic expressions in multiple ways.
7PR7. Solving Equations II – Model and solve, concretely, pictorially, and symbolically, problems that can be represented by linear equations of the form:

$ax + b = c$, $ax = b$, $\frac{x}{a} - b, a \neq 0$, where *a*, *b*, and *c* are whole numbers.

- ✓ I can represent a given problem with an algebraic equation and solve concretely, pictorially, and symbolically.
- ✓ I can verify the solution to an algebraic equation.

7PR7 - Solving Equations II



Reflections

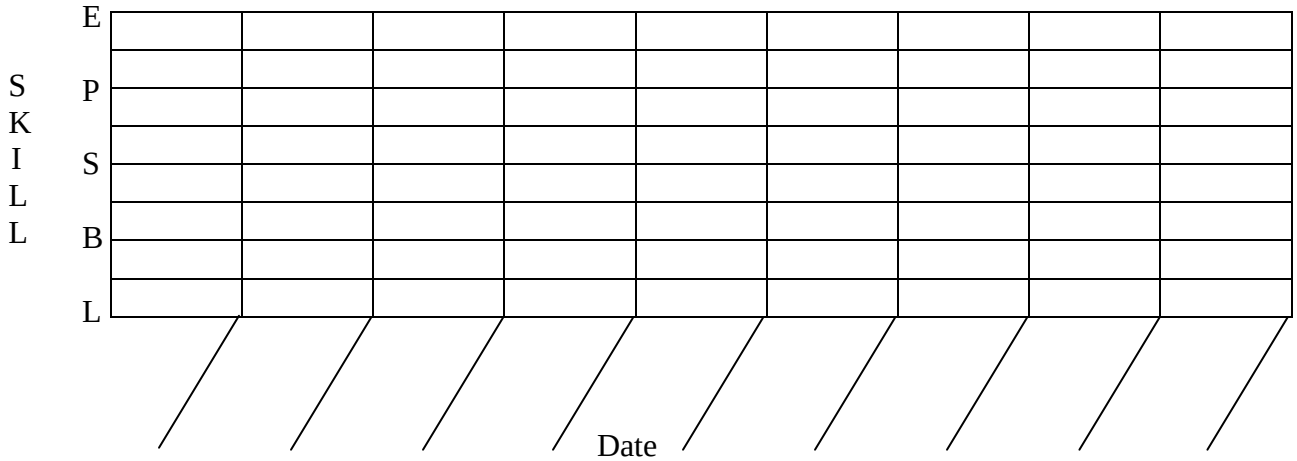
My goal is:		
Date	**Specific Things I Will Do To Improve:**	**Teacher Initial**

Strand: Shape & Space
General Outcome: Use direct and indirect measurement to solve problems.

7SS1. Circle Properties – Demonstrate an understanding of circles by: describing the relationships among radius, diameter and circumference, relating circumference to pi, determining the sum of the central angles, constructing circles with a given radius or diameter, solving problems involving the radii, diameters, and circumference of circles.

- ✓ I can illustrate and explain the relationship between radius and diameter.
- ✓ I can illustrate and explain the relationship between diameter, pi, and circumference.
- ✓ I can construct circles with a given radius or diameter.
- ✓ I can demonstrate that the sum of the central angles in any circle is 360º.
- ✓ I can use the properties of circles to solve problems.

7SS1 - Circle Properties



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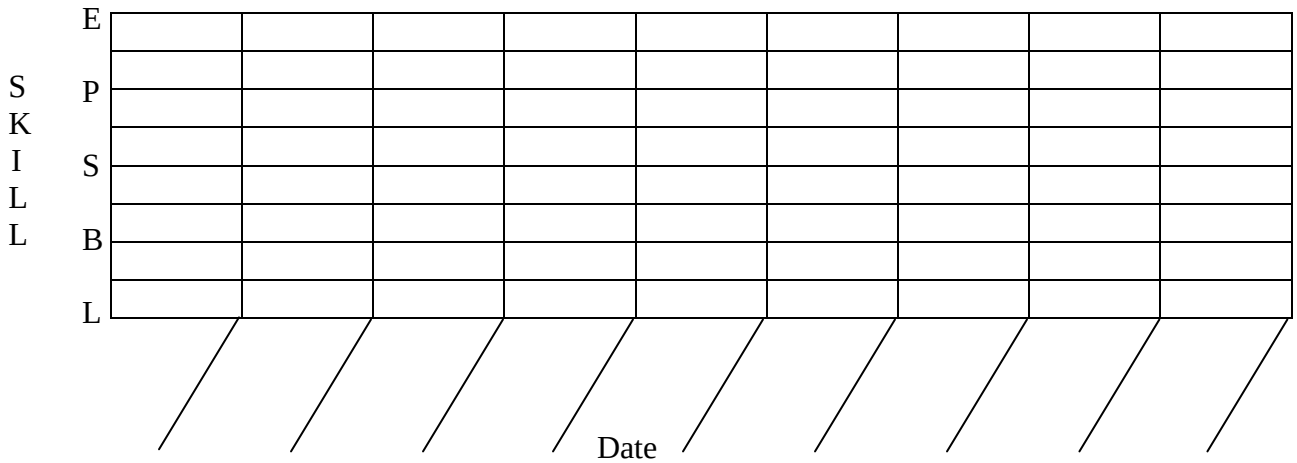
Strand: Shape & Space
General Outcome: Use direct and indirect measurement to solve problems.
7SS2. Area – Develop and apply a formula for determining the area of: triangles, parallelograms, circles.

- ✓ I can use the formula for the area of a rectangle, to develop formulas for the areas of triangles and parallelograms.
- ✓ I can demonstrate and explain how to estimate the area of a circle.
- ✓ I can apply formulas to calculate the area of triangles, parallelograms, and circles.
- ✓ I can solve problems involving the area of triangles, parallelograms, and circles.

7SS2 - Area



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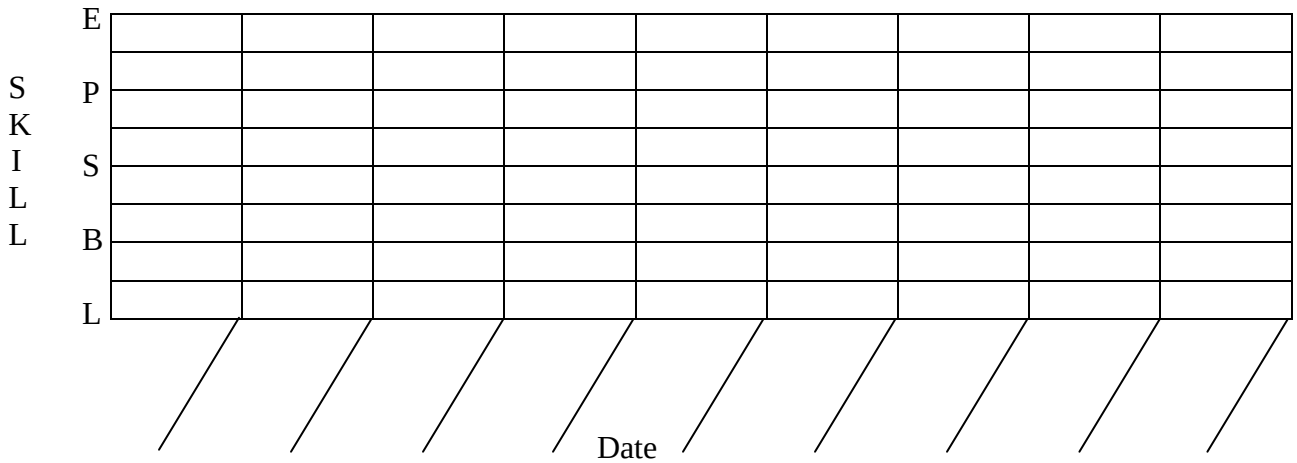
Strand: Shape & Space

General Outcome: Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.

7SS3. Geometric Constructions – Perform geometric constructions including: perpendicular line segments, parallel line segments, perpendicular bisectors, angle bisectors.

- ✓ I can find examples of parallel line segments, perpendicular line segments, perpendicular bisectors, and angle bisectors in the environment.
- ✓ I can construct perpendicular lines and verify that they are perpendicular.
- ✓ I can construct parallel lines and verify that they are parallel.
- ✓ I can construct the bisector of an angle and verify that the resulting angles are equal.
- ✓ I can construct a perpendicular bisector and verify that the line segments are equal.

7SS3 - Geometric Constructions



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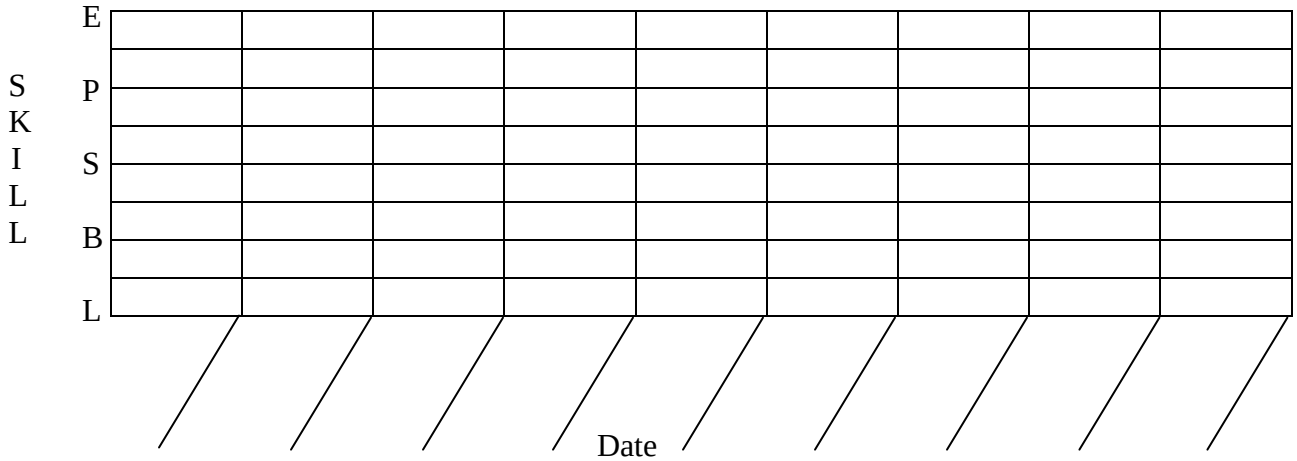
Strand: Shape & Space
General Outcome: Describe and analyze position and motion of objects and shapes.
7SS4. Graphing on a Cartesian Plane – Identify and plot points in the four quadrants of a Cartesian plane, using integral ordered pairs.

- ✓ I can identify the origin and label the axes of a 4-Quadrant Cartesian Plane.
- ✓ I can plot ordered pairs in all four quadrants.
- ✓ I can write the ordered pair of a point in any quadrant on a Cartesian Plane.

7SS4 - Graphing on a Cartesian Plane



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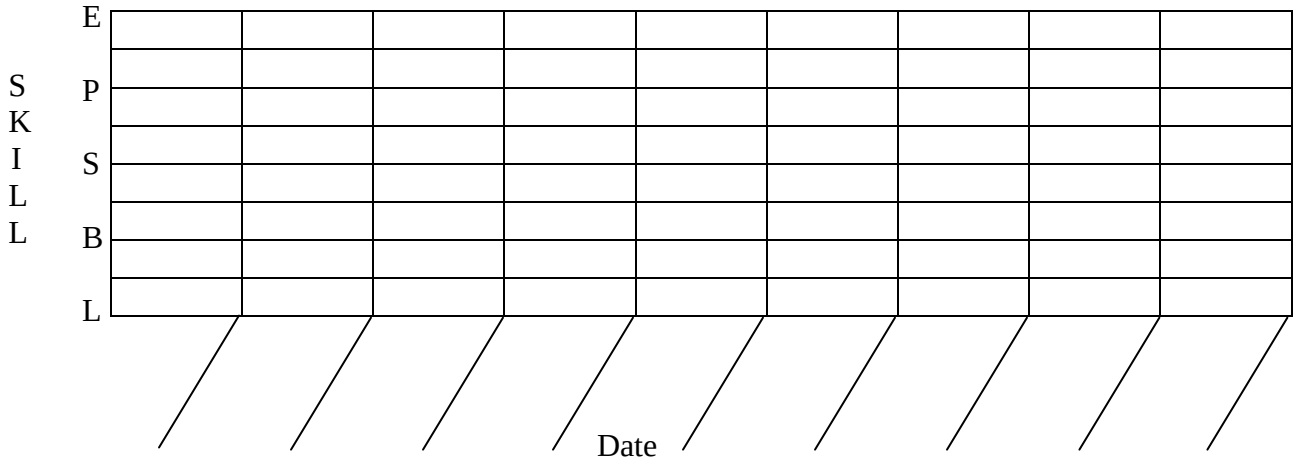
Strand: Shape & Space
General Outcome: Describe and analyze position and motion of objects and shapes.
7SS5. Transformations – Perform and describe transformations (translations, reflections, or rotations) of a 2-D shape in all four quadrants of a Cartesian plane. (It is intended that the original shape and its image have vertices with integral coordinates.)

- ✓ I can identify and describe a transformation.
- ✓ I can perform a given transformation.
- ✓ I can identify and perform combinations of transformations.

7SS5 - Transformations



Reflections

My goal is:		
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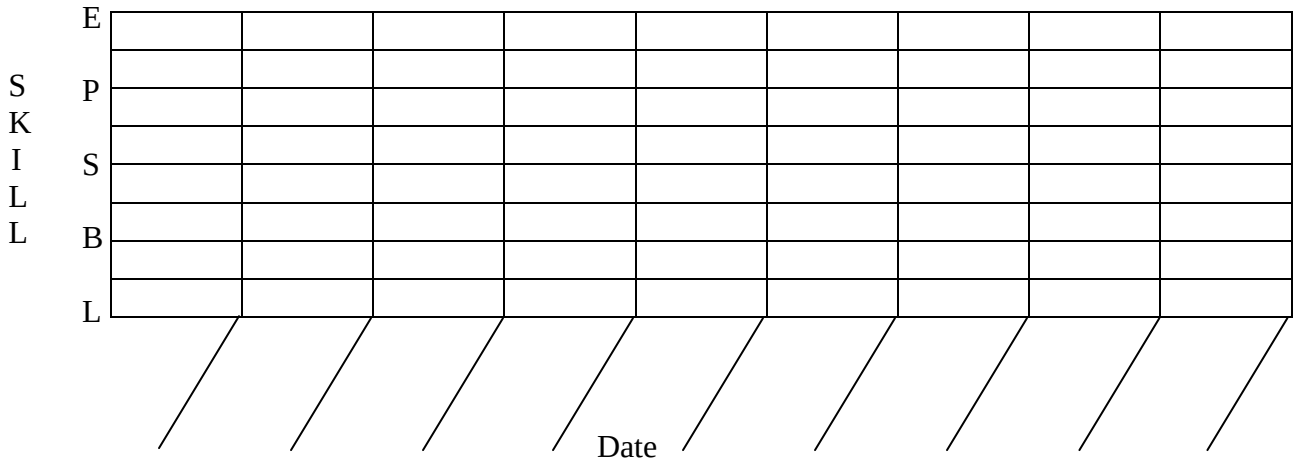
Strand: Statistics & Probability
General Outcome: Collect, display and analyze data to solve problems.
7SP1. Mean, Median, Mode, & Range – Demonstrate an understanding of central tendency and range by: determining the measures of central tendency and range, determining the most appropriate measures of central tendency to report findings.

- ✓ I can define central tendency, mean, median, mode, and range.
- ✓ I can calculate mean, median, mode, and range.
- ✓ I can determine which measure of central tendency is most appropriate (which to use and when.)
- ✓ I can compare the measures of central tendency to each other.
- ✓ I can solve problems involving measures of central tendency.

7SP1 - Mean, Median, Mode, & Range



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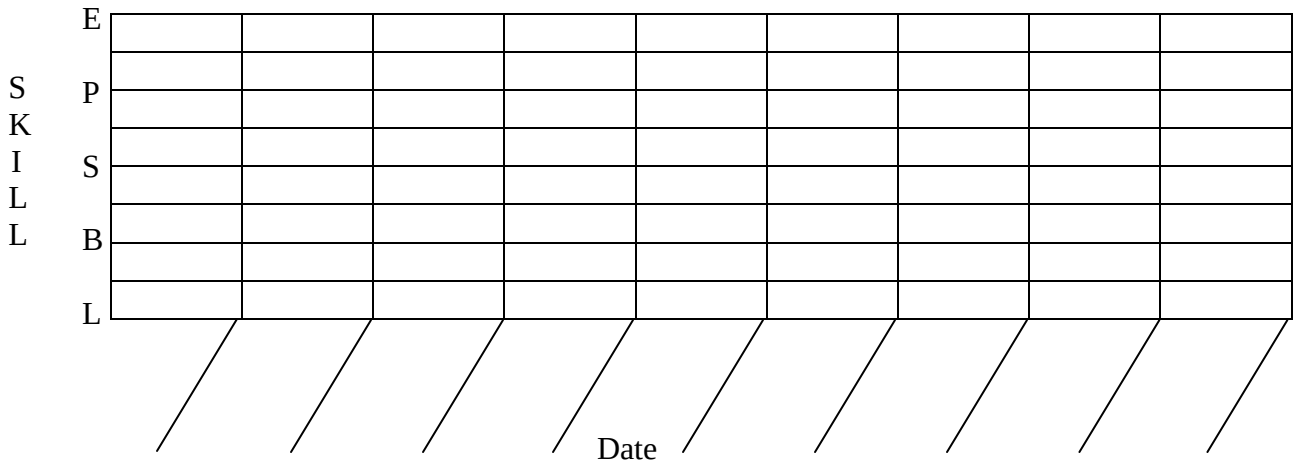
Strand: Statistics & Probability
General Outcome: Collect, display and analyze data to solve problems.
7SP2. Outliers – Determine the effect on the mean, median, and mode when an outlier is included in a data set.

- ✓ I can identify outliers in a set of data.
- ✓ I can explain the effect of outliers on the measures of central tendency.
- ✓ I can explain when to include or exclude an outlier.

7SP2 - Outliers



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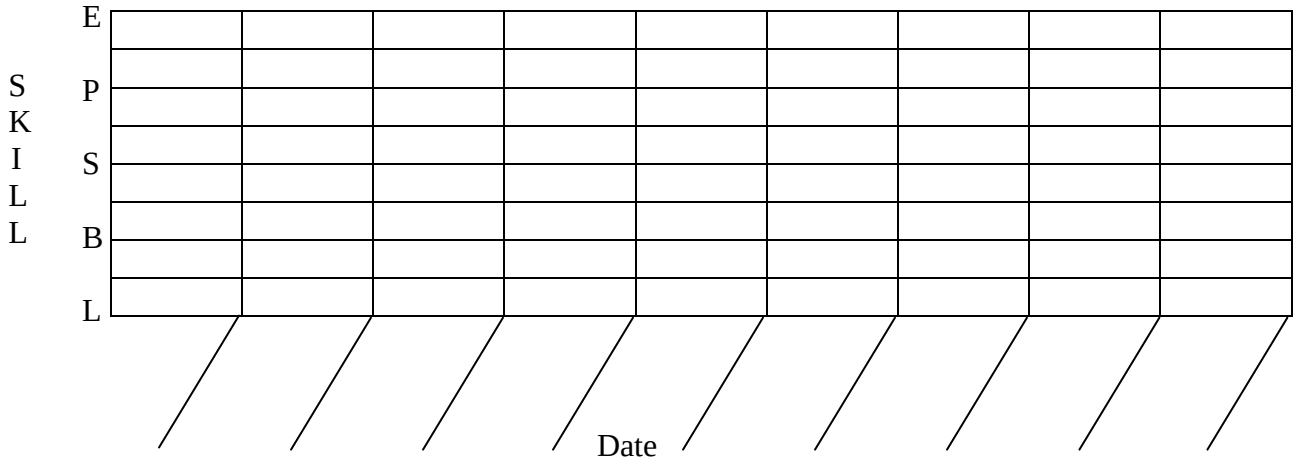
Math 7 Name: _____

Strand: Statistics & Probability
General Outcome: Collect, display and analyze data to solve problems.
7SP3. Circle Graphs – Construct, label, and interpret circle graphs to solve problems.

- ✓ I can convert raw data into percents and portions of 360º.
- ✓ I can construct and label (title, legend, percents, categories, etc.) a circle graph without technology.
- ✓ I can construct and label (title, legend, percents, categories, etc.) a circle graph with technology.
- ✓ I can interpret circle graphs to answer questions.

7SP3 - Circle Graphs



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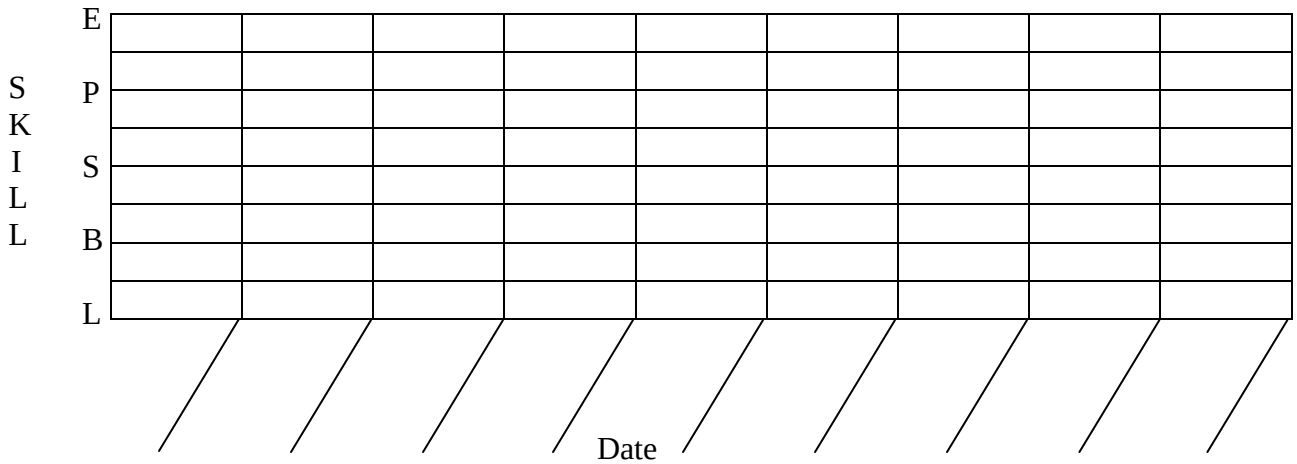
Math 7 Name: _____

Strand: Statistics & Probability
General Outcome: Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.
7SP4. Probability – Express probabilities as ratios, fractions, and percents.

- ✓ I can determine the probability of a given outcome.
- ✓ I can express probabilities as ratios, fractions, (*decimals,*) and percents.
- ✓ I can explain the meaning of probabilities equal to 0 (0%) or 1 (100%).

7SP4 - Probability



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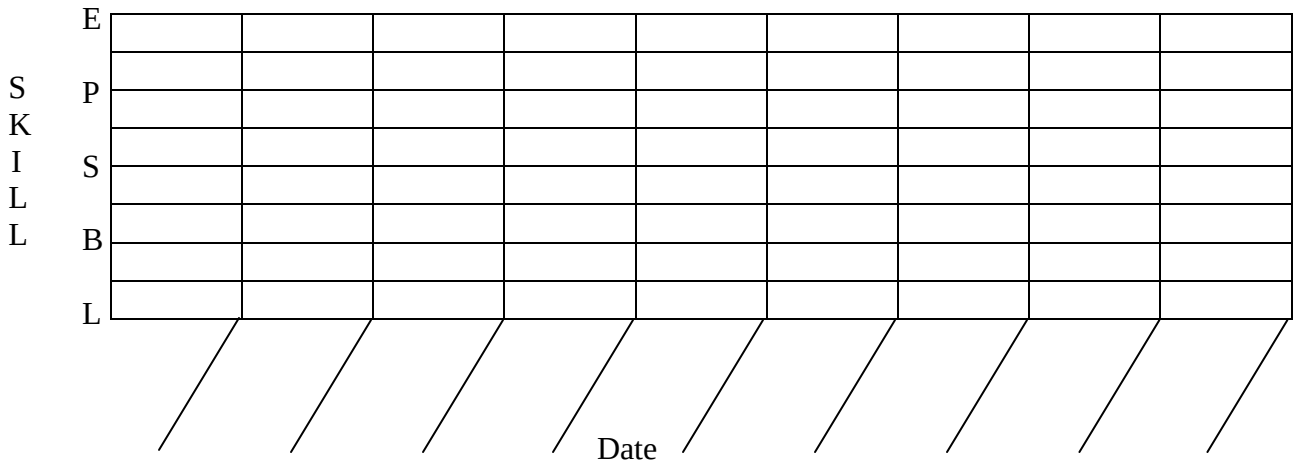
Strand: Statistics & Probability
General Outcome: Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.

7SP5. Sample Spaces – Identify the sample space for a probability experiment involving two independent events.

- ✓ I can define and provide examples of independent and dependent events.
- ✓ I can display the sample space for two independent events.

7SP5 - Sample Spaces



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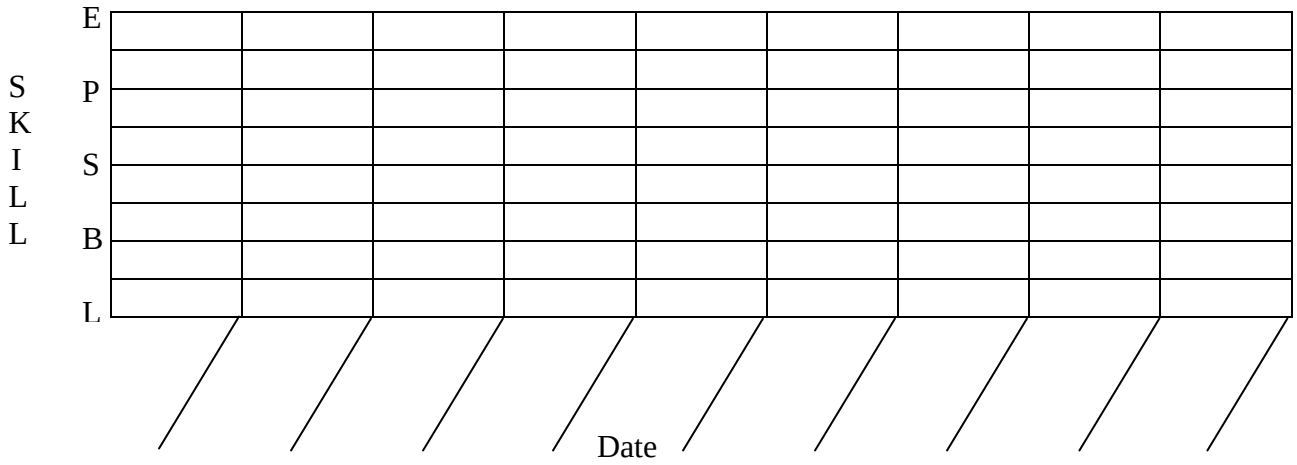
Strand: Statistics & Probability

General Outcome: Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.

7SP6. Experimental & Theoretical Probability – Conduct a probability experiment to compare the theoretical probability (determined using a tree diagram, table, or other graphic organizer) and experimental probability of two independent events.

- ✓ I can define theoretical and experimental probability for two independent events.
- ✓ I can find theoretical probability for two independent events.
- ✓ I can conduct a probability experiment, with and without technology, to determine the experimental probability of two independent events.
- ✓ I can compare the theoretical and experimental probabilities of two independent events.
- ✓ I can solve probability problems involving two independent events.

7SP6 - Experimental & Theoretical Probability



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