Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Explain that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that* 700÷70=10 *by applying concepts of place value and division.* (CCSS: 4.NBT.A.1
Student Friendly:	In this standard we will learn that in a multi-digit number, each place is ten times more than the number to it's left.
Success Criteria:	1. I can name the places and value of each digit in a number up to one millions place. 2. I can see that a digit in a number would be worth ten times more if it were on place to the left. 3. I understand that the value of a digit increases as it moves to the left and decreases as it moves to the right. 4. I can use cubes and arrays to show place value. 5. I can understand decimals play a part in place value. 6. I can use money to show value of each place and compare the places.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using > , =, and < symbols to record the results of comparisons. (CCSS: 4.NBT.A.2)
Student Friendly:	In this standard you will learn how to read and write numbers in standard, expanded and written form using number names to the one million place. You will also learn to compare multi-digit numbers using their place value and symbols (>,<, =) to show comparisons.
Success Criteria:	1. Students will understand standards, expanded and word form. 2. Students will understand symbols to compare. 3. Students will compare numbers based upon value of digits.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Use place value understanding to round multi-digit whole numbers to any place. (CCSS: 4.NBT.A.3)
Student Friendly:	In this standard you will round a multi-digit number to a given place.
Success Criteria:	1. Students will understand rounding rules. 2. Students will use number line to round. 3. Students will round using place value.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Fluently add and subtract multi-digit whole numbers using the standard algorithm. (CCSS: 4.NBT.B.4)
Student Friendly:	You will add and subtract whole numbers using the standard algorithm (method).
Success Criteria:	1. Students will understand the basic algorithms for adding and subtracting up to 100,000 place value without regrouping or carrying. 2. Students will understand how to carry over into the next place value to add. 3. Students will understand how to regroup to subtract. 4. Students will understand how to subtract from zero by regrouping. 5. Students will know how to estimate using addition and subtraction.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (CCSS: 4.NBT.B.5)
Student Friendly:	You will multiply a four digit number by a one digit number and multiply a two digit number by another two digit number using methods based upon place value and the order of operations. You will also illustrate and explain your answer using equations, arrays, and area models.

Success Criteria:	1. Students will know basic vocab and parts of an multiplication equation.
	2. Students will understand operation properties.
	    a. Zero Property
	    b. Identity Property
	    c. Commutative Property
	    d. Associative Property
	3. Students will have multiplication facts mastered through 12's.
	4. Students will learn basic multiplication algorithm.
	5. Students will understand the array models of multiplication.
	6. Students will understand how to use area models.
	7. Students will use break apart method.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (CCSS: 4.NBT.B.6)
Student Friendly:	You will use division to find the quotient using whole number divisors and dividends, up to four digit dividends and one digit divisors using strategies with place value, order of operations, properties and relationships between multiplication and division. Use illustrations and explain the process and calculations using equations, arrays and area models.
Success Criteria:	1. Students will know basic vocab and parts of a division equation. 2. Students will understand divisibility rules. 3. Students will understand properties of division 4. Students will understand the basic algorithm of division. 5. Students will understand the rectangle array models. 6. Students will understand area models.

Learning Intentions and Success Criteria
Mathematics K-6

MATH- 4.NF.A1

Colorado Standard:	Explain why a fraction *a/b* is equivalent to a fraction *nxa/nxb* by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. (CCSS: 4.NF.A.1)
Student Friendly:	You will create equivalent fractions using both multiplication and visual models. You will understand the difference in partitioning between the two equal fractions even though they both represent equal amounts.
Success Criteria:	1. Students will understand vocabulary related to fractions. 2. Students will understand benchmark fractions. 3. Students will be able to verbally represent fractions. 4. Students will be able to visually represent an equivalent fraction using models. 5. Students will be able to visually represent an equivalent fraction on a number line. 6. Students will be able to create equivalent fractions using multiplication or division. 7. Students will understand simplest form and how to find it.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols *>,=,or <* and justify the conclusions, e.g., by using a visual fraction model. (CCSS: 4.NF.A.2)
Student Friendly:	You will compare fractions. Compare by creating an equivalent fraction in order to compare fractions that have a common denominators and compare using benchmark fractions. You will use the >,<,= to record your answers.
Success Criteria:	1. Students will understand how to compare benchmark fractions. 2. Students will compare fractions using visual representations. 3. Students will understand how to find a common factor. 4. Students will understand how to find a common denominator. 5. Students will understand how to compare using common denominator or common factor.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Understand a fraction a/b with $a>1$ as a sum of fractions $1/b$. (CCSS: 4.NF.B.3) a. Understand addition and subtraction of fractions as joining seperate ,parts referring to the same whole.
Student Friendly:	You will understand unit fractions, whole fractions fractional parts and how to add and subtract amongst them.
Success Criteria:	1. Students will understand unit fractions. 2. Students will understand how to add unit fractions to get a whole fraction.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Understand a fraction *a/b* with *a>1* as a sum of fractions *1/b*. (CCSS: 4.NF.B.3) B. Decompose a fraction into a sum of fractions with like denominators in more than one way, recording each decomposition by an equation. Justify decompositions, by using visual modules.
Student Friendly:	You will subtract fractions with like denominators multiple ways to get the same answer. You will represent this using visual fractions as well.
Success Criteria:	1. Students will understand how to breakdown a fraction into unit fractions. 2. Students will understand how to decompose a fraction multiple ways. 3. Students will represent these decompositions using visual representations.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Understand a fraction *a/b* with *a>1* as a sum of fractions *1/b*. (CCSS: 4.NF.B.3) C. Add and subtract numbers with like denominators by replacing each mixed number with an equivalent fractions and or by using properties of operations and the relationship between addition and subtraction.
Student Friendly:	You will add and subtraction fractions and mixed numbers by composing and decomposing, using visual models, number lines and standard algorithm.
Success Criteria:	1. You will add fractions with like denominators. 2. You will subtract fractions with like denominators. 3. You will recognize relationship between adding and subtracting fractions.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Understand a fraction *a/b* with *a>1* as a sum of fractions *1/b*. (CCSS: 4.NF.B.3) D. Solve word problems involving adding and subtracting of fractions referring to the same whole and having the denominators by using visual fraction models and equations to represent the problem.
Student Friendly:	You will add and subtraction fractions and mixed numbers by composing and decomposing, using visual models, number lines and standard algorithm.
Success Criteria:	1. You will solve simple word problems using the addition and subtraction of fractions. 2. You will solve word problems using addition and subtraction of fractions using visual representations.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. (CCSS: 4.NF.B.4) a. Understand a fraction a/b as a multiple of 1/b.
Student Friendly:	You will use previous knowledge to multiply a fraction by a whole number.
Success Criteria:	1. Students will understand how to multiply a unit fraction by a whole number to get a whole fraction.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. (CCSS: 4.NF.B.4) B. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number.
Student Friendly:	You will use previous knowledge to multiply a fraction by a whole number.
Success Criteria:	1. Students will understand how multiplying fractions by a whole number ends up as a mixed number or fraction. 2. Students will multiply a fraction by a whole number.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. (CCSS: 4.NF.B.4). C. Solve word problems involving multiplication of a fraction by a whole number, by using visual fraction models and equations to represent the problem.
Student Friendly:	You will use previous knowledge to multiply a fraction by a whole number in word problems.
Success Criteria:	1. Apply previous concepts of multiplying whole numbers by fractions into word problems using visual representation.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. (Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.) *For example, express* 3/10 *as* 30/100, *and add* 3/10+4/100=34/100. (CCSS: 4.NF.C.5)
Student Friendly:	You will be able to find a fraction that equal is equal to the given fraction in order to add two fractions together.
Success Criteria:	1. Find equivalent fractions for fractions with the denominators of 10 and 100. 2. Add fractions with unlike denominators by finding equivalent fractions with common denominators.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Use decimal notation for fractions with denominators 10 or 100.
Student Friendly:	You will change fractions to decimals.
Success Criteria:	1. Students will learn decimal place value up to the hundredths place value.. 2. Students will learn how to write decimals in standard, word and expanded form. 3. Students will learn how to convert decimals to fractions.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >,=, or<, and justify the conclusions, e.g., by using a visual model. (CCSS: 4.NF.C.7)
Student Friendly:	You will compare decimals up to hundredths based upon their place value using symbols to record your answers and using visual models to represent your answers.
Success Criteria:	1. Students will compare decimals within the tenths place value using visual models. 2. Students will compare decimals within the hundredths place value using visual models. 3. Students will compare decimals up to hundredths using symbols to record answers.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Interpret a multiplication equation as a comparison, e.g., interpret $35=5×7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. (CCSS: 4.OA.A.1)
Student Friendly:	You will be able to understand that the product is found by multiplying two groups together or one group by another. You will be able to write the problem as an equation.
Success Criteria:	1. Understand what equations are. 2. Understand how to multiply two separate groups by each other to represent a multiplicative comparison. 3. Be able to represent two groups multiplied together as an equation.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. (See Appendix, Table 2) (CCSS: 4.OA.A.2)
Student Friendly:	You will multiply and divide word problems using equations, visual models, symbols and variables to represent an unknown number.
Success Criteria:	1. Make sense of multi-step word problems by understanding the relationships between known and unknown quantities. (MP1) 2. Reason quantitatively with word problems by considering the units involved and how the quantities they describe increase or decrease with addition and subtraction or scale with multiplication and division. (MP2) 3. Students will represent unknown quantities using "a" or any given letter to represent the unknown in an equation.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (CCSS: 4.OA.A.3)
Student Friendly:	You will solve a word problem that involves multiple steps in order to come to a conclusion or answer for the problem. You will understand the answer and interpret it.
Success Criteria:	1. Students will be able to recognize what needs to be found with the information given and represent with an equation. 2. Students will recognize there may be multiple steps involved in a problem. 3. Students will solve word problems with remainders and be able to interpret the remainder.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Find all factor pairs for a whole number in the range $1/100$ Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range $1/100$ is a multiple of a given one-digit number. Determine whether a given whole number in the range $1/100$ is prime or composite. (CCSS: 4.OA.B.4)
Student Friendly:	You will find all the factor pairs for a given multiple and understand the terms prime and composite.
Success Criteria:	1. Students will understand the terms composite and prime. 2. Students will review factorization rules. 3. Students will find all the given factors using a hundreds chart. 4. Students will find all the given factors using the butterfly method. 5. Students will find all the given factors by listing.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number* 1, *generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.* (CCSS: 4.OA.C.5)
Student Friendly:	You will be able to identify a pattern and continue the pattern using the knowledge learned by looking at the pattern and identifying features or rules to continue the pattern.
Success Criteria:	1. Continue a shape pattern by identifying the pattern already given. 2. Create a shape pattern based upon a given rule. 3. Right a rule for a shape pattern. 4. Continue a pattern with a rule given. 5. Identify a number pattern and rule. 6. Continue a pattern based upon the rule found. 7. Use an in and out box and complete using rule given. 8. Use an in and out box and complete by find the rule given.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that* 1*ft is* 12 *times as long as* 1 *in. Express the length of a* 4 *ft snake as* 48 *in. Generate a conversion table for feet and inches listing the number pairs* (1,12), (2,24), (3,36). (CCSS: 4.MD.A.1)
Student Friendly:	You will be able to identify different measurment systems and units for length, weight, and capacity.
Success Criteria:	1. Visually identify measurement system and unit for a given shape within in the U.S. Customary (Standard) System. 2. Be able to identify different length measurements and units in Standard system. 3. Convert between the different units of length in the Standard system. 4. Be able to identify different weight measurements and units in Standard system. 5. Convert between the different units of weight in the Standard system. 6. Be able to identify different capacity measurements and units in Standard system. 7. Convert between the different units of capacity in the Standard system. 8. Visually identify measurement system and unit for a given shape within in the Metric System. 9. Be able to identify different length measurements and units in Metric system. 10. Convert between the different units of length in the Metric system. 11. Be able to identify different weight measurements and units in Metric system. 12. Convert between the different units of weight in the Metric system. 13. Be able to identify different capacity measurements and units in Metric system. 14. Convert between the different units of capacity in the Metric system.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. (CCSS: 4.MD.A.2)
Student Friendly:	Solve word problems using the addition, subtraction, multiplication and division properties to answer problems involving measurement.
Success Criteria:	1. Students will identify different money increments. 2. Students will be able to answer money problems using the four operations. 3. Students will be able to answer word problems using the four operations to solve decimal problems 4. Students will be able to answer word problems using the four operations for measurement questions involving the standard system. 5. Students will be able to answer word problems using the four operations for measurement questions involving the metric system. 6. Students will be able to use diagrams. 7. Students will be able to use different types of graphs and answer measurement problems.

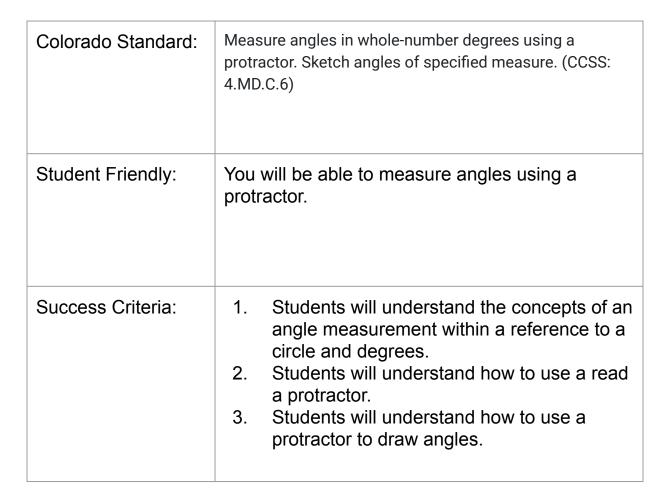# Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.* (CCSS: 4.MD.A.3)
Student Friendly:	You will be able to find the area and perimeter of rectangles to solve word problems.
Success Criteria:	1. Students will be able to identify the area formula. 2. Students will be able to apply the area formula. 3. Students will be able to apply the area formula to word problems. 4. STudents will be able to identify the perimeter formula. 5. Students will be able to apply the perimeter formula. 6. Students will be able to apply the perimeter formula to word problems. 7. Students will be able to apply the area and perimeter formula to word problems.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Make a line plot to display a data set of measurements in fractions of a unit (½, ¼, ⅛). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.* (CCSS: 4.MD.B.4)
Student Friendly:	You will use a line plot to display fractions and add and subtract within those fractions to solve answers about the line plot.
Success Criteria:	1. Students will be able to use line plots. 2. Students will be able to create line plots 3. Students will be able to apply the use of fractions when creating line plots. 4. Students will be able to answer questions about given line plots using addition and subtraction.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: (CCSS: 4.MD.C.5)
Student Friendly:	You will know that shapes are formed when two rays share a common point.
Success Criteria:	1. Students will know what Rays, Points, LInes, Segments are. 2. Students will be able to identify the different types of angles based upon angle measure. 3. Students will be able to draw different types of angles.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure. (CCSS: 4.MD.C.6)
Student Friendly:	You will be able to measure angles using a protractor.
Success Criteria:	1. Students will understand the concepts of an angle measurement within a reference to a circle and degrees. 2. Students will understand how to use a read a protractor. 3. Students will understand how to use a protractor to draw angles.

Learning Intentions and Success Criteria Mathematics K-6

Colorado Standard:	Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure. (CCSS: 4.MD.C.7)
Student Friendly:	You will be able to add and subtract angels from within each other to find missing angle measures or totals of angles together.
Success Criteria:	1. Students will understand that angles are formed within a two dimensional shape and can be added for a total degree of rotation. 2. Students will understand that angels are additive. 3. Students will understand that angels can be subtracted. 4. Students will be able to find a missing angle measure. 5. Students will be able to use an algebraic equation to solve angle measure problems.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. (CCSS: 4.G.A.1)
Student Friendly:	You will be able to draw different geometric shapes based upon given attributes.
Success Criteria:	1. Students will identify and draw points, lines, line segments, perpendicular and parallel lines. 2. Students will be able to draw acute, obtuse and right angles 3. Students will be able to identify different attributes of two-dimensional shapes.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. (CCSS: 4.G.A.2)
Student Friendly:	You will be able to name different shapes based upon their attributes of angles, side lengths and lines.
Success Criteria:	1. Students will know what Rays, Points, LInes, Segments are. 2. Students will be able to identify the different types of angles. 3. STudents will be able to identify the different types of triangles based upon the attributes of angles. 4. Students will be able to identify Triangles based upon the attributes of lines. 5. Students will be able to identify the different quadrilaterals and name them based upon different attributes. 6. Students will be able to identify different two dimensional shapes based upon number of sides.

Learning Intentions and Success Criteria
Mathematics K-6

Colorado Standard:	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. (CCSS: 4.G.A.3)
Student Friendly:	You will be able to identify lines of symmetry, draw line off symmetry, and create lines of symmetry.
Success Criteria:	1. Students will be able to use mirrors to identify lines of symmetry. 2. Students will be able to draw in lines of symmetry. 3. Students will be able to draw shapes with given number of lines of symmektry.