3rd Grade Math Skills Unit

Content Area: **Mathematics**
Course(s): **Generic Course, TAG Mathematics 3**
Time Period: **Generic Time Period**
Length: **Length of unit**
Status: **Published**

Unit Overview

This unit extends students problem solving skills on specific topics in order to make connections to using math in the real world. Students are taught above level math skills and then are asked to create thier own puzzles using those skills. Puzzles can be kept for the end of the 4th grade unit.

Transfer

Students will be able to independently use their learning to...

-What kinds of long term, independent accomplilshments are desired?

-persevere to solve problems.

-have confidence in thier ability to solve problems.

-identify a variety of ways to solve problems

-make connections to the real world in math

Meaning

Understandings

Students will understand that...

-What specifically do you want students to understand?

-What inferences should they make/grasp/realize?

-Apply math skills to real-world situations.

-they can follow a series of steps to solve problems.

-math is in the world around them.

Essential Questions

Students will keep considering...

-What thought provoking questions will foster inquiry, meaning making and transfer?

-Where and how do your parents use math?

-Are there easier ways to solve math problems?

-What skills will help you solve math problems?

Application of Knowledge and Skill

Students will know...

Students will know...

What facts and basic concepts should students know and be able to recall?

-how to identify patterns and sequencing

-how to solve coin riddles

-how to use logical reasoning

-how to find area and perimeter of polygons

-how to solve algebraic expressions and equations.

-how to find probability

Students will be skilled at...

Students will be skilled at...

What discrete skills and processes should students be able to use?

-problem solve

-think outside the box

-relate math to the real world

-work collaboratively

Academic Vocabulary

Multiply
Product
Divide
Quotient
Remainder
Array
Unknown
Equal shares
Factor
Variable
Pattern
Even
Odd
Round
Unit fraction
Equivalent
Whole number
Fraction bar
Numerator
Denominator
Elapsed time
Open number line
Gram
Kilogram
Liter
Scale (of graph)

Unit square
Area
Perimeter
Rhombus
Quadrilaterals
Formula
Estimation
Factor pairs
Multiples
Prime
Composite
Sequence
Area model
Equation
Equivalent fractions
Mixed number
Improper fraction
Decimal
Hundredths
Tenths
Pound
Ounce
Conversion
Table
Line plot
Angle
Ray
Endpoint
Degrees
Protractor
Points
Lines
Line segments
Right angle
Acute angle
Obtuse angle
Perpendicular lines
Parallel lines
Right triangle
Line of symmetry
Parentheses
Brackets
Braces
Numerical expression
Evaluate
Powers of 10
Decimal point
Thousandths
Volume
Origin
formula

Ratio
diagram
Percent
Greatest Common Factor
Least Common Multiple
Distributive Property
Positive Number
Negative Number
Opposite
Inequality
Exponents
Order of operations
Substitution

variable
Median
Mode
Range
Mean

Learning Goal 1

Apply critical thinking and problem-solving skills.

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.A-SSE.A	Interpret the structure of expressions
MA.K-12.2	Reason abstractly and quantitatively.
MA.5.OA.A.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
MA.5.OA.A.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.5.OA.B.3	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.
MA.K-12.5	Use appropriate tools strategically.
MA.4.OA.C.5	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.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.2.MD.C	Work with time and money.
MA.2.MD.C.8	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $

	and ¢ symbols appropriately.
MA.7.G.B	Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
MA.G-GPE	Expressing Geometric Properties with Equations
MA.4.MD.A.2	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.
MA.4.MD.A.3	Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
MA.6.G.A	Solve real-world and mathematical problems involving area, surface area, and volume.
MA.7.SP.C.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
MA.3.MD.D.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
MA.7.SP.C.7a	Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.
MA.7.SP.C.7b	Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.
MA.G-MG.A	Apply geometric concepts in modeling situations

Target 1

Generate and test patterns and seqences.

Target 2

Solve and Create coin riddles.

Target 3

Design logical reasoning puzzles.

Target 4

Create a zoo using area and perimeter.

Target 5

Predict and test probability models.

Target 6

Solve algebraic expressions and equations.

Summative Assessment

Student created puzzles

21st Century Life and Careers

Select all applicable standards from the applicable standards

CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP11	Use technology to enhance productivity.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.

Formative Assessment and Performance Opportunities

Teacher observation

Class Participation

Class Discussion

Classwork

Debate/Defend Work

Partner work

Differentiation/Enrichment

As this is a TAG class, rigor is already increased. Students have the opportunity to participate in:

invention convention

Math night

Noetic Math Compeition

Creating their own math problems

Brainsteasers

Unit Resources