

# 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

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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

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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

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## Understandings

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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**

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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**

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### **Students will know...**

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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...**

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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**

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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

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Apply critical thinking and problem-solving skills.

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.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.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.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.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.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.6.G.A	Solve real-world and mathematical problems involving area, surface area, and volume.
MA.7.G.B	Solve real-life and mathematical problems involving angle measure, 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.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
MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
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.A-SSE.A	Interpret the structure of expressions
MA.G-GPE	Expressing Geometric Properties with Equations

## **Target 1**

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Generate and test patterns and sequences.

## **Target 2**

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Solve and Create coin riddles.

## **Target 3**

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Design logical reasoning puzzles.

## Target 4

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Create a zoo using area and perimeter.

## Target 5

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Predict and test probability models.

## Target 6

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Solve algebraic expressions and equations.

## Summative Assessment

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Student created puzzles

## 21st Century Life and Careers

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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

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Teacher observation

Class Participation

Class Discussion

Classwork

Debate/Defend Work

Partner work

### **Differentiation/Enrichment**

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

invention convention

Math night

Noetic Math Competition

Creating their own math problems

Brainsteasers

### **Unit Resources**

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