

# Mathematics

## Grade 3

### QUARTER 1

#### Processes of Mathematics

*(These processes are the structure for delivery of mathematics content objectives.)*

Objectives – The students will be able to:

- Select and apply appropriate strategies to solve a problem. (Problem Solving) (3.7.A.1.a-h)
- Justify solutions to problems with logic and evidence. (Reasoning and Proof) (3.7.B.1.a-d)
- Represent mathematical concepts in a variety of ways including visual, concrete, and abstract. (Representation)
- Write about and discuss mathematical concepts. (Communication) (3.7.C.1.a-h)
- Connect mathematical concepts to related concepts and/or connect mathematical concepts to real-world applications. (Connections) (3.7.D.1.a-d)

#### Algebra, Patterns, and Functions

Objectives - The students will be able to:

- Identify, describe, and extend a variety of numeric, non-numeric, and growing patterns (symbols, shapes, designs, and pictures). (3.1.A.2.a, 3.1.A.2.b)
- Identify, describe, extend, and create a variety of numeric patterns (multiples including 2s, 3s, 4s, 5s, 10s, 25s). (3.1.A.1.a, 3.1.A.1.b, 3.1.A.1.c)

#### Number Relationships and Computation

Objectives - The students will be able to:

- Identify place value and state the value of each digit in a given numeral to 100,000. (3.6.A.1.c)
- Identify numbers as odd or even. (3.6.B.1.a)
- Read, write, and compare (using  $>$ ,  $<$ ,  $=$ ,  $\neq$ ) numerals to 100,000. (3.6.A.1.d)
- Plot points to represent whole numbers on a number line. (3.1.C.1.a)
- Write numbers in expanded form. (3.6.A.1.b)
- Apply the order (commutative) and grouping (associative) properties for addition.
- Add whole numbers with regrouping with sums up to 1,000.
- Use benchmarks of 10, 100, or 25 to reorder combinations of numbers that are more easily added or subtracted (decomposition of numbers).

- i. Subtract whole numbers (up to 3–digits) with regrouping as needed. (3.6.C.1.a)
- j. Estimate sums and differences using rounding to the nearest ten and hundred. (3.6.C.2.a)
- k. Apply addition and subtraction number combinations to story problems and multi-step problems. (3.6.C.1.c)
- l. Identify, name, compare, and determine the value of a given set of currency through \$100 and represent money amounts in different ways. (3.6.A.3.a)
- m. Identify the amount of money needed to match a price through \$100 and determine the simplest combination of coins and bills. (3.6.A.3.b)
- n. Solve problems involving money (adding, subtracting, and counting change) with and without a calculator. (3.6.A.3.d)

### **Statistics (Analyze and Interpret Data)**

Objective - The students will be able to:

- a. Interpret and compare data sets and make predictions (in oral and written form) based on tables, scale pictographs (1:1, 2:1, and 5:1), and bar graphs. (3.4.B.1.b, 3.4.B.1.c, 3.4.B.1.d)

## **QUARTER 2**

### **Processes of Mathematics**

*(These processes are the structure for delivery of mathematics content objectives.)*

Objectives – The students will be able to:

- a. Select and apply appropriate strategies to solve a problem. (Problem Solving) (3.7.A.1.a-h)
- b. Justify solutions to problems with logic and evidence. (Reasoning and Proof) (3.7.B.1.a-d)
- c. (Representation): Represent mathematical concepts in a variety of ways including visual, concrete, and abstract. (Representation)
- d. Write about and discuss mathematical concepts. (Communication) (3.7.C.1.a-h)
- e. Connect mathematical concepts to related concepts and/or connect mathematical concepts to real-world applications. (Connections) (3.7.D.1.a-d)

### **Number Relationships and Computation (Multiplication and Division of Whole Numbers)**

Objectives - The students will be able to:

- a. Use models, manipulatives, arrays, and number sentences to represent multiplication. (3.6.C1.f)
- b. Use models, manipulatives, arrays, and number sentences to represent division. (3.6.C1.f)

- c. Identify the concept of inverse operation for multiplication and division. (3.6.C.1.j)
- d. Apply the zero, identity, and commutative properties to basic multiplication facts. (3.6.C.1.g)
- e. Write a word problem based on multiplication or division number sentences. (3.6.C.1.k)

### **Computational Fluency (Basic Facts, Strategies At Work 3)**

Objectives - The students will be able to:

- a. Apply invented and acquired strategies to recall basic facts that multiply by 0.
- b. Apply invented and acquired strategies to recall basic facts that multiply and divide by 1.

### **Number Relationships and Computation (Fractions)**

Objectives - The students will be able to:

- a. Represent a variety of fractions for a region or a set using manipulatives and/or drawings. (3.6.A.2.b)
- b. Read and write a fraction for a given region or set (halves, thirds, fourths, fifths, sixths, eighths, and tenths). (3.6.A.2.b)
- c. Compare and order like fractions.
- d. Represent equivalent fractions using manipulatives and/or drawings equal to one whole and one half.
- e. Plot points to represent fractions with denominators of 2, 3, and 4 on a number line. (3.1.C.1.b)
- f. Estimate the value of a fraction as being close to zero, one-half, or one.

### **Probability**

Objectives - The students will be able to:

- a. List possible outcomes for an event. (3.5.A.1, 3.5.A.1.b)
- b. Describe the likelihood of an event by using certain, impossible, more likely, less likely, and equally likely. (3.5.B.1.a)

### **Algebra, Patterns, and Functions**

Objectives - The students will be able to:

- a. Represent numeric relationships using the symbols: +, -, <, > or =.
- b. Explain the meaning of the equal sign in a number sentence.
- c. Find the missing number in a number sentence (addition, subtraction, multiplication, and division) using a variety of strategies. (3.1.C.1.b)

## QUARTER 3

### Processes of Mathematics

*(These processes are the structure for delivery of mathematics content objectives.)*

Objectives – The students will be able to:

- a. Select and apply appropriate strategies to solve a problem. (Problem Solving) (3.7.A.1.a-h)
- b. Justify solutions to problems with logic and evidence. (Reasoning and Proof) (3.7.B.1.a-d)
- c. (Representation): Represent mathematical concepts in a variety of ways including visual, concrete, and abstract. (Representation)
- d. Write about and discuss mathematical concepts. (Communication) (3.7.C.1.a-h)
- e. Connect mathematical concepts to related concepts and/or connect mathematical concepts to real-world applications. (Connections) (3.7.D.1.a-d)

### Computational Fluency (Basic Facts, Strategies At Work 3)

Objective - The students will be able to:

- a. Apply invented and acquired strategies to recall basic facts that multiply and divide by 2. (3.6.A.2.a)
- b. Apply invented and acquired strategies to recall basic facts that multiply and divide by 10. (3.6.A.2.a)

### Geometry

Objectives - The students will be able to:

- a. Identify, define, and construct or draw a point, line segment, line, and ray (using paper and pencil or technology). (3.2.C.1.a, 3.2.A.1.a)
- b. Identify and label the vertex of an angle.
- c. Determine whether angles found in geometric figures and in the environment are greater than, equal to, or less than a right angle.
- d. Identify, describe, and classify polygons including triangles, quadrilaterals, pentagons, hexagons, and octagons. (3.2.A.1.b)
- e. Identify quadrilaterals (squares, rectangles, rhombi, parallelograms, trapezoids) by the length of sides. (3.2.A.1.b)
- f. Identify triangles, rectangles or squares as part of a composite figure. (3.2.A.1.d)
- g. Identify the faces, vertices, and edges of cubes, rectangular prisms, and triangular prisms. (3.2.B.1.a)
- h. Describe and demonstrate slides, flips, and turns using pictures or other simple objects. (3.2.E.1.a)
- i. Identify, describe, and represent congruency of geometric figures and real-world objects. (3.2.D.1.a)
- j. Identify, describe, and represent symmetry of geometric figures and real-world objects. (3.2.E.2.a)

## Measurement

Objectives - The students will be able to:

- a. Estimate, measure, and record in standard units of length (including width, height, and distance) (inches [to 1/2 inch increments], feet, yard, centimeters, meters) using the appropriate tool/unit. (3.3.A.1.a, 3.3.B.1.a)
- b. Estimate and count linear units to find perimeter of figures on grids including real world objects. (3.3.C.1.a)
- c. Estimate and count square units to find the area of figures on grids including real world objects. (3.3.C.2.b)
- d. Estimate, measure, and record in standard units of weight (grams, ounces, and pounds) using the appropriate tool/unit. (3.3.A.1.c, 3.3.B.1.c)
- e. Estimate, measure, and record temperature (Celsius, Fahrenheit) using the appropriate tool/unit. (3.3.A.1.c)
- f. Estimate, measure, and record capacity (cups, pints, quarts, gallons, liters, and milliliters) using the appropriate tool/unit. (3.3.A.1.b)
- g. Determine and use equivalent units within the same system (Convert between inches, feet, and yards; centimeters and meters). (3.3.C.2.a)
- h. Estimate and count cubic units to find the volume of figures and real world objects. (3.3.C.2.c)
- i. Tell time in days, hours, minutes, and seconds. (3.3.A.1.b)

## QUARTER 4

### Processes of Mathematics

*(These processes are the structure for delivery of mathematics content objectives.)*

Objectives – The students will be able to:

- a. Select and apply appropriate strategies to solve a problem. (Problem Solving) (3.7.A.1.a-h)
- b. Justify solutions to problems with logic and evidence. (Reasoning and Proof) (3.7.B.1.a-d)
- c. (Representation): Represent mathematical concepts in a variety of ways including visual, concrete, and abstract. (Representation)
- d. Write about and discuss mathematical concepts. (Communication) (3.7.C.1.a-h)
- e. Connect mathematical concepts to related concepts and/or connect mathematical concepts to real-world applications. (Connections) (3.7.D.1.a-d)

### Computational Fluency (Basic Facts, Strategies At Work 3)

Objective - The students will be able to:

- a. Apply invented and acquired strategies to recall basic facts that multiply and divide by 5.

## **Number Relationships and Computation (Multiplication and Division of Whole Numbers)**

Objectives - The students will be able to:

- a. Multiply a two or three-digit number by a one-digit number with regrouping. (3.6.C.1.h)
- b. Represent division as both the processes of sharing and grouping.
- c. Recognize that a number divided by itself is equal to one and a number divided by one is equal to that number.
- d. Divide a one- or two-digit dividend by a one-digit divisor with a remainder. (3.6.C.1.I)
- e. Interpret the remainder for a given situation.
- f. Multiply and divide whole numbers using a calculator.

## **Algebra, Patterns, and Functions**

Objective - The students will be able to:

- a. Complete a function table using a given addition or subtraction rule. (3.1.A.1.d)

## **Statistics (Analyze and Interpret Data)**

Objectives - The students will be able to:

- a. Interpret, compare, and make predictions (in oral and written form) based on tables, scale pictographs (1:1, 2:1, and 5:1), bar graphs, and line plots. (3.4.B.1.a)
- b. Organize and display data using tables, scale pictographs (1:1, 2:1, and 5:1), bar graphs, and line plots using paper/pencil and technology. (3.4.A.1.a-e)

## **Number Relationships and Computation (Decimals)**

Objectives - The students will be able to:

- a. Read, write, and represent decimals through hundredths.
- b. State the value of each digit in a given decimal through hundredths.
- c. Identify the relationship between common fractions and decimals.
- d. Compare and order decimals through hundredths.
- e. Add and subtract decimals through hundredths.