Program Transfer Goals

- Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
- Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.
- Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.
- Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

PACING

First Grading Period			Second Grading Period		Third Grading Period			Fourth Grading Period	
Unit 1: Whole Number Operations	Unit 2: Decimal Place Value	Unit 3: Decimal Operations	Unit 4: Personal Financial Literacy	Unit 5: Operations with Fractions	Unit 6: Expressions and Equations	Unit 7: Coordinate Plane	Unit 8: 2D Figures	Unit 9: Measurement	Unit 10: Application of Operations
BOY Screener					MOY Screener			EOY Screener	

Assurances for a Guaranteed and Viable Curriculum [STANDARDIZED ACROSS ALL CONTENT AREAS]

Adherence to this scope and sequence affords every member of the learning community clarity on the knowledge and skills on which each learner should demonstrate proficiency. In order to deliver a guaranteed and viable curriculum, our team commits to and ensures the following understandings:

Shared Accountability: Responding to the Needs of All Learners

- High levels of learning for all students.
- The district and course formative assessments aligned to the standards for this course support educators and learners in monitoring academic achievement and leveraging interventions.

Shared Understanding: Curriculum Design

- The district curriculum design weaves together the elements of content, skills and assessments in order to adhere to curriculum design at the macro and micro level, ensuring vertical alignment.
- The district curriculum incorporates standards, scope and sequence, enduring understandings, essential questions, performance assessments, and recommended resources.

Interdependence: Curriculum Units

Members of the learning community utilize the curriculum units, plan collaboratively, and reflect on results for continuous improvement.

Unit 1: Whole Number Operations

Timeline: 2 weeks - 1st Grading Period

Learners continue to develop their skills of solving various types of problems by adding and subtracting whole numbers and multiplying 2-digit by 2-digit whole numbers by using the standard algorithm, expressions with letters representing unknowns, and strip diagrams. Learners apply their understanding further by multiplying 3-digit whole numbers by 2-digit whole numbers and dividing 4-digit whole numbers by 2-digit whole numbers. Learners use their knowledge of the properties of operations and strategies such as compensation, the area model, partial quotients, and the standard algorithm to solve multi-step problems. When solving problems, learners may use estimation strategies such as front-end estimation (one keeps the first digit of the number and changes all remaining digits to zero), compatible numbers (with values that lend themselves to mental calculations), rounding up or down, and/or compensation (one adjusts estimates to draw closer to an exact calculation). Throughout this unit, learners will summarize numerical and categorical data (that includes whole numbers and decimals) using a bar graph, frequency table, dot plot, and stem and leaf. Learners solve problems using data.

- **Transfer Goal:**
  - Use written and oral language to communicate strategies used to add, subtract, multiply, and divide whole numbers
  - Use a problem-solving model to solve multistep addition, subtraction, multiplication, and division word problems involving whole numbers
  - Communicate mathematical ideas being addressed in multi-step problems using representations, including strip diagrams and expressions
  - Select tools to estimate sums, differences, products, and quotients of real-world problems that involve whole numbers
  - Select tools to collect, sort, and organize data
  - Use tables and graphs to communicate the organization of data

Students will know…
various strategies can be used to compute numbers; the properties of operations; the mathematical relationships found in the place value system

Students will be skilled at…
multiplying with fluency a 3-digit number by a 2-digit number using the standard algorithm; solving with proficiency for quotients of up to a 4-digit dividend by a two digit divisor using strategies and algorithms; estimating to determine solutions; adding and subtracting positive rational numbers fluently; representing and solving multi-step problems, using a letter standing for the unknown quantity; summarizing numerical and categorical data using a bar graph, frequency table, dot plot, and stem and leaf; solve problems using data

UNIT 2: DECIMAL PLACE VALUE

TIMELINE: 3 WEEKS - 1ST GRADING PERIOD

Learners apply their knowledge of the place value system to interpret the value of decimals (to the thousandths place) and represent decimals using expanded notation and numbers. An understanding of place value is used when comparing and ordering decimals and represent comparisons using comparison symbols. Learners round decimals using the relative sizes of numbers as opposed to memorizing rounding "rules." Throughout this unit, learners will summarize numerical and categorical data (that includes whole numbers and decimals) using a bar graph, frequency table, dot plot, and stem and leaf. Learners solve problems using data.

- ■ **Transfer Goal:**
    - o Explain and represent the value of decimals based on the pattern of the place-value system
    - o Communicate comparisons of decimals using written and oral language, and symbols
    - o Select tools, such as understanding of place value, to estimate, compare, and order decimals
    - o Use written or oral language to explain and justify the order and comparisons of decimals
    - o Select tools to collect, sort, and organize data
    - o Use tables and graphs to communicate the organization of data

Students will know…
the mathematical relationships found in the place value system

Students will be skilled at…
Representing the value of the digit in decimals through the thousandths using expanded notation and numerals; comparing and ordering two decimals to the thousandths; representing comparisons using symbols; rounding decimals to tenths and hundredths; summarizing numerical and categorical data using a bar graph, frequency table, dot plot, and stem and leaf; solve problems using data

UNIT 3: DECIMAL OPERATIONS

TIMELINE: 3 WEEKS - 1ST GRADING PERIOD

Learners apply their understanding of multiplication of whole numbers to represent and solve problems that involve multiplication and division of whole numbers, as well as decimals. Representations used are manipulatives and pictorial models, which include area models. Learners use their understanding of place value and the properties of operations to solve problems using mental math and partial products. Learners round decimals to solve problems using the relative sizes of numbers as opposed to memorizing rounding "rules." Learners continue to add and subtract positive rational numbers (whole numbers and decimals) fluently. Throughout this unit, learners will summarize numerical and categorical data (that includes whole numbers and decimals) using a bar graph, frequency table, dot plot, and stem and leaf. Learners solve problems using data.

- **Transfer Goal:**
    - o   Use written and oral language to communicate strategies used to add and subtract whole numbers and decimals
    - o   Use a problem-solving model to solve multiplication and division problems involving whole numbers and decimals
    - o   Communicate mathematical ideas being addressed in problems using representations, including objects, pictures, and area models
    - o   Select tools, such as an understanding of place value to estimate products and quotients of whole numbers and decimals
    - o   Select tools to collect, sort, and organize data
    - o   Use graphs to communicate the organization of data

Students will know…
there are various strategies for solving problems; the properties of operations; the mathematical relationships found in the place value system

Students will be skilled at…
representing multiplication of decimals using objects, pictorial models and area models; solving for products of decimals to the hundredths; using strategies such as mental math and partial products/quotients to multiply and divide decimals; representing quotients of decimals to the hundredths using objects, pictorial models, and area models; solving for quotients of decimals to the hundredths using mental math and partial products; adding and subtracting positive rational numbers fluently; estimate products and quotients; summarizing numerical and categorical data using a bar graph, frequency table, dot plot, and stem and leaf; solve problems using data

UNIT 4: PERSONAL FINANCIAL LITERACY

TIMELINE: 2 WEEKS - 2ND GRADING PERIOD

Learners explore the effects of financial decisions. Learners develop a way to organizing and documenting financial decisions. Learners balance a simple budget, paying attention when expenses exceed income, and discover ways that budgets can be effected. Learners explain different types of income (gross income and net income) and define various types of taxes (income tax, payroll tax, sales tax, and property tax). Learners explore and explain how different forms of payment (check, credit card, debit card, electronic payments) are appropriate for different purposes. Throughout this unit, learners will summarize numerical and categorical data (that includes whole numbers, decimals, fractions) using a bar graph, frequency table, dot plot, and stem and leaf. Learners solve problems using data.

- ■ **Transfer Goal:**
  - o Communicate the ideas of taxes, income, and payment methods and their implications
  - o Select tools to develop a system to organize financial records
  - o Select tools to balance a simple budget
  - o Select tools to collect, sort, and organize data
  - o Use graphs to communicate the organization of data

Students will know…
the definition of tax, payroll tax, sales tax, and property tax; differences between gross income and net income; advantages and disadvantages of different methods of payment (check, credit card, debit card, electronic payments); actions that might be taken to balance a budget when expenses exceed income; summarizing numerical and categorical data using a bar graph, frequency table, dot plot, and stem and leaf; solve problems using data

Students will be skilled at…
developing a system for keeping and using financial records; balancing a simple budget

UNIT 5: OPERATIONS WITH FRACTIONS

TIMELINE: 6 WEEKS - 2ND GRADING PERIOD

Learners further develop their skills with fractions, by representing adding and subtracting fractions with unlike denominators with objects, pictures (including strip diagrams), and an understanding of properties of operations. These representations are used to solve problems. Learners begin to multiply and divide fractions using objects, pictures, and area models. Learners use objects, pictures, and area models to represent and solve the division of a unit fractions (fractions with a one as the numerator) by whole number, and a whole number by unit fraction. Learners continue to add and subtract positive rational numbers (whole numbers, decimals and fractions) fluently. Throughout this unit, learners will summarize numerical and categorical data (that includes whole numbers, decimals, fractions) using a bar graph, frequency table, dot plot, and stem and leaf. Learners solve problems using data.

- **Transfer Goal:**
  - o Select tools, including real objects and pictures to represent and solve problems involving addition, subtraction, multiplication, and division of whole numbers, decimals, and fractions
  - o Select tools to add and subtract positive rational numbers fluently
  - o Use a problem-solving model to solve addition, subtraction, multiplication, and division problems involving whole numbers, decimals, and fractions
  - o Select tools to collect, sort, and organize data
  - o Use graphs to communicate the organization of data

Students will know…
the definition of a positive rational number; properties of operations

Students will be skilled at…
representing and solving addition of fraction; representing and solving subtraction of fractions; representing and solving multiplication of whole numbers and fractions; representing and solving division of unit fractions by whole numbers, and whole numbers by unit fractions; adding and subtracting positive rational numbers fluently; summarizing numerical and categorical data using a bar graph, frequency table, dot plot, and stem and leaf; solve problems using data

TIMELINE: 3 WEEKS - 3RD GRADING PERIOD

Learners can explain the meaning of the parentheses and brackets in a numerical expressions and simplify the expression. Learners may use objects and pictures to analyze factor pairs to identify prime and composite numbers Throughout this unit, learners will summarize numerical and categorical data (that includes whole numbers, decimals, fractions) using a bar graph, frequency table, dot plot, stem and leaf, and scatterplots. Learners solve problems using data from multiple sources.

- ■ **Transfer Goal:**
  - o Use written and oral language to describe a numerical expression
  - o Select tools to identify prime and composite numbers
  - o Select tools to simplify a numerical expression
  - o Select tools to collect, sort, and organize data
  - o Use graphs to communicate the organization of data

Students will know…
differences in prime and composite numbers; definition of an expression; the meaning of parentheses and brackets in a numeric expression

Students will be skilled at…
simplifying numerical expressions; summarizing numerical and categorical data using a bar graph, frequency table, dot plot, scatterplot, and stem and leaf; solve problems using data from multiple sources

Unit 7: Coordinate Plane

Timeline: 4 weeks - 3rd Grading Period

Learner explore the coordinate plane and describes its key features (axes, origin, x-coordinate, y-coordinate, ordered pair). Learners plot ordered pairs (first quadrant only) that are represented in an input-output table with a real world context, and describe the process used to plot the ordered pairs. Learners use the table or graph to recognize the difference between a multiplicative and additive pattern, and generate the numerical pattern in a table or graph when given the multiplicative (y=ax) or additive pattern (y=a+x). Throughout this unit, learners will summarize numerical and categorical data (that includes whole numbers, decimals, fractions) using a bar graph, frequency table, dot plot, stem and leaf, and scatterplots. Learners solve problems using data from multiple sources.

- **Transfer Goal:**
    - o   Use written and oral language to plot ordered pairs and describe the process of graphing ordered pairs
    - o   Use written and oral language to describe key features of a coordinate plane
    - o   Communicate numerical patterns represented by numbers plotted on a coordinate plane
    - o   Select tools to collect, sort, and organize data
    - o   Use graphs to communicate the organization of data

Students will know...
key attributes of a coordinate plane (axes, origin, x-coordinate, y-coordinate, ordered pair)

Students will be skilled at...
Graphing ordered pairs in the first quadrant of the coordinate plane; generating a numerical pattern when given a rule in the form of y=ax or y=a+x; recognizing the differences between additive and multiplicative numerical patterns in a table or graph; summarizing numerical and categorical data using a bar graph, frequency table, dot plot, scatterplot, and stem and leaf; solve problems using data from multiple sources

UNIT 8: TWO-DIMENSIONAL FIGURES

TIMELINE: 3 WEEKS - 3RD GRADING PERIOD

Learners identify two-dimensional figures based on their attributes and properties. Through multiple experiences, learners develop a hierarchy of sets and subsets of two-dimensional figures. Learners represent the hierarchy using a graphic organizer. on the presence or attributes of specific attributes. Learners may notice that some polygons can fit into two categories based on their attributes. Throughout this unit, learners will summarize numerical and categorical data (that includes whole numbers, decimals, fractions) using a bar graph, frequency table, dot plot, stem and leaf, and scatterplots. Learners solve problems using data from multiple sources.

- **Transfer Goal:**
    - o   Use written and oral language to describe and classify two-dimensional figures based on specific geometric attributes
    - o   Select tools to collect, sort, and organize data
    - o   Use graphs to communicate the organization of data

Students will know…
Attributes of two-dimension figures; properties of two-dimensional figures; names of two-dimensional figures

Students will be skilled at…
Classifying two-dimensional shapes by attributes and properties; representing a hierarchy of two-dimensional figures with a graphic organizer; summarizing numerical and categorical data using a bar graph, frequency table, dot plot, scatterplot, and stem and leaf; solve problems using data from multiple sources

UNIT 9: MEASUREMENT

TIMELINE: 4 WEEKS - 4TH GRADING PERIOD

Learners recognizes that cubes (1 cubic unit) can be used to find the volume of a 3-dimensional figure, and use the cubes to find the volume of a rectangular prism. Through multiple experiences, learners begin to understand that the length of the sides of of a rectangular prism represent the number of layers. These layers have the same area as the base. Using this knowledge, learners use models to develop the formulas for volume of a rectangular prism (including a cube). Learners apply their knowledge of measurement and formulas to represent and solve problems that involve perimeter, area and volume. Learners also convert measurements (which may include decimal values or fractional portions of a unit) within the same measurement system. Throughout this unit, learners will summarize numerical and categorical data (that includes whole numbers, decimals, fractions) using a bar graph, frequency table, dot plot, stem and leaf, and scatterplots. Learners solve problems using data from multiple sources.

- ■ **Transfer Goal:**
    - o   Select tools to determine volume, using cubic units
    - o   Use a problem-solving model to solve problem involving area, perimeter, and volume
    - o   Select tools to convert measurements within the same system
    - o   Select tools to collect, sort, and organize data
    - o   Use graphs to communicate the organization of data

Students will know…
differences in area, perimeter, and volume; contexts in which area, perimeter, or volume should be calculated

Students will be skilled at…
Determining the volume of a rectangular prism; selecting appropriate units, strategies, and tools to solve problems involving measurement; solving problems related to perimeter, area, and volume; summarizing numerical and categorical data using a bar graph, frequency table, dot plot, scatterplot, and stem and leaf; solve problems using data from multiple sources

Unit 10: Application of Operations

Timeline: 6½ weeks - 4th Grading Period

Learners continue to develop their understanding of addition, subtraction, multiplication and division as they continue to apply it in various situations. Learners explore connections between the authentic situations and all four operations through various projects and experiences. Throughout this unit, learners will summarize numerical and categorical data (that includes whole numbers, decimals, fractions) using a bar graph, frequency table, dot plot, stem and leaf, and scatterplots. Learners solve problems using data from multiple sources.

- **Transfer Goal:**
  - o Select tools to model and solve contextual situations involving any or all of the four operations
  - o Use written and oral language to communicate strategies to solve situations involving any or all of the four operations
  - o Use written and oral language to communicate mathematical ideas in authentic situations that involving any or all of the four operations
  - o Select tools to collect, sort, and organize data
  - o Use graphs to communicate the organization of data

Students will know...
Addition, subtraction, multiplication, and division is applicable in authentic contexts; a variety of tools can be used to communicate and represent connected ideas

Students will be skilled at...
Connecting addition, subtraction, multiplication, and division to authentic situations; explaining ways that addition, subtraction, multiplication, and division are used in authentic situations; Recalling addition, subtraction, multiplication, and division facts; applying divisibility to authentic situations; solving problems involving addition, subtraction, multiplication, and division; representing problems using models; representing real-world relationships using number pairs in a table; summarizing numerical and categorical data using a bar graph, frequency table, dot plot, scatterplot, and stem and leaf; solve problems using data from multiple sources