Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: Understand Place Value**
Time Allotment: 10 days **Unit Sequence: Chapter 1**

Major Concepts to be learned:

- Group Tens as Hundreds
- Explore 3-Digit Numbers
- Model 3-Digit Numbers
- Hundreds, Tens, and Ones
- Place Value to 1,000
- Word Form for Numbers
- Different Forms of Numbers
- Different Ways to Show Numbers

Expected Skills to be demonstrated:

- To understand that each group of 10 tens is equivalent to 1 hundred.
- To write a 3-digit number for a group of tens.
- To use concrete and pictorial models to represent 3-digit numbers.
- To apply place-value concepts to write 3-digit numbers that are represented by pictorial models.
- To use place value to describe the values of digits in numbers to 1,000.
- To read and write 3-digit numbers using words.
- To write three-digit numbers in expanded form and standard form.
- To apply place-value concepts to find equivalent representations of numbers.

PA Standards/Anchors:	Eligible Content:
Standard - CC.2.1.2.B.1 Standard - CC.2.1.2.B.2	• Use place value concepts to represent amounts of tens and ones and to compare three-digit numbers. • Use place value concepts to read, write, and skip count to 1000.

Instructional Strategies:		Assessments:
Number line	Hands-on activity	• Quick Check Quizzes • Chapter Review Test
Visualizations for greater than and less than	Graphic organizers	
Manipulatives	Written work	
Class lecture	Class discussion	
Math vocabulary		

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: Use Place Value to Count & Compare**
Time Allotment: 9 days **Unit Sequence: Chapter 2**

Major Concepts to be learned:

- Counting Patterns Within 100
- Counting Patterns Within 1,000
- Count on and Count Back by 10 and 100
- Compare Numbers
- Use a Number Line to Compare Numbers
- Use Symbols to Compare Numbers
- Order Numbers

Expected Skills to be demonstrated:

- To extend counting sequences within 100, counting by ones, fives, and tens.
- To extend counting sequences within 1,000, counting by ones, fives, tens, and hundreds.
- To identify 10 more, 10 less, 100 more, and 100 less than a given number.
- To solve problems involving number comparisons by using the strategy *make a model.*
- To use number lines to compare numbers.
- To compare 3-digit numbers using the >, <, and = symbols.
- To use place value and number lines to order numbers.

PA Standards/Anchors:	Eligible Content:
Standard - CC.2.1.2.B.1 Standard - CC.2.1.2.B.2	• Use place value concepts to represent amounts of tens and ones and to compare three-digit numbers. • Use place value concepts to read, write, and skip count to 1000.

Instructional Strategies:		Assessments:
Ten frame	Hands-on activity	• Quick Check Quizzes • Chapter Review Test
Visualizations for doubles	Graphic organizers	
Manipulatives	Written work	
Class lecture	Class discussion	
Number line	Math vocabulary	

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: Basic Facts**
Time Allotment: 9 day **Unit Sequence: Chapter 3**

Major Concepts to be learned:

- Use Doubles Facts to Add
- Practice Addition Facts
- Make a Ten to Add
- Relate Addition and Subtraction
- Practice Subtraction Facts
- Use Ten to Subtract
- Use Equations to Represent Problems

Expected Skills to be demonstrated:

- To use doubles facts as a strategy for finding sums for near doubles facts.
- To recall sums for basic facts using properties and strategies.
- To recall sums for addition facts using the *make a ten* strategy.
- To use the inverse relationship of addition and subtraction to recall basic facts.
- To recall differences for basic facts using mental strategies.
- To find differences on a number line to develop the mental strategy of decomposing to simplify facts.
- To write equations to represent and solve a variety of addition and subtraction situations.

PA Standards/Anchors:

Standard - CC.2.1.2.B.3
Standard - CC.2.2.2.A.1
Standard - CC.2.2.2.A.2

Eligible Content:

- Use place value understanding and properties of operations to add and subtract within 1000.
- Represent and solve problems involving addition and subtraction within 100.
- Use mental strategies to add and subtract within 20.

Instructional Strategies:

Workmats	Hands-on activity
Two-color counters	Graphic organizers: part-part-whole
Manipulatives	Written work
Class lecture	Class discussion
Number line	Math vocabulary

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: Equal Groups**
Time Allotment: 6 days **Unit Sequence: Chapter 4**

Major Concepts to be learned:

- Even and Odd Numbers
- Represent Even Numbers
- Equal Groups
- Repeated Addition

Expected Skills to be demonstrated:

- To classify numbers up to 20 as even or odd.
- To write equations with equal addends represent even numbers.
- To solve problems involving equal groups by using the strategy *act it out.*
- To write equations using repeated addition to find the total number of objects.

PA Standards/Anchors:

Standard - CC.2.1.2.B.3
Standard - CC.2.2.2.A.1
Standard - CC.2.2.2.A.2
Standard - CC.2.2.2.A.3

Eligible Content:

- Use place value understanding and properties of operations to add and subtract within 1000.
- Represent and solve problems involving addition and subtraction within 100.
- Use mental strategies to add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

Instructional Strategies:

Hands-on activity
Tally charts
Coordinate grid
Manipulatives
Class lecture
Math vocabulary
Graphic organizers
Class discussion
Written work

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: 2-Digit Addition**
Time Allotment: 7 days **Unit Sequence: Chapter 5**

Major Concepts to be learned:

- Break Apart Ones to Add
- Use Compensation
- Break Apart Addends as Tens and Ones
- Model Regrouping for Addition
- Model and Record 2-Digit Addition

Expected Skills to be demonstrated:

- To find a sum by breaking apart a 1-digit addend to make a 2-digit addend a multiple of ten.
- To use compensation to develop flexible thinking for 2-digit addition.
- To apply place-value cocepts when using a break-apart strategy for 2-digit addition.
- To model 2-digit addition with regrouping.
- To draw quick pictures and record 2-digit addition using the standard algorithm.

PA Standards/Anchors:

Standard - CC.2.1.2.B.3
Standard - CC.2.2.2.A.1
Standard - CC.2.2.2.A.2
Standard - CC.2.2.2.A.3

Eligible Content:

- Use place value understanding and properties of operations to add and subtract within 1000.
- Represent and solve problems involving addition and subtraction within 100.
- Use mental strategies to add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

Instructional Strategies:

Place value blocks
Workmats 3 and 5
Hundreds chart
Manipulatives
Class lecture
Triangle pattern blocks
Mnemonic device (ex: alligator)
Hands-on activity
Graphic organizers
Connecting cubes
Written work
Class discussion
Math vocabulary

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: More 2-Digit Addition**
Time Allotment: 9 days **Unit Sequence: Chapter 6**

Major Concepts to be learned:

- 2-Digit Addition
- Practice 2-Digit Addition
- Rewrite 2-Digit Addition
- Model Addition
- Write Equations to Represent Addition
- Find Sums for 3 Addends
- Find Sums for 4 Addends

Expected Skills to be demonstrated:

- To record 2-digit addition using the standard algorithm.
- To practice 2-digit addition with and without regrouping.
- To rewrite horizontal addition problems vertically in the standard algorithm format.
- To solve problems involving 2-digit addition by using the strategy *draw a diagram.*
- To represent addition situations with equations using a symbol for the unknown number.
- To find sums of three 2-digit numbers.
- To find sums of four 2-digit numbers.

PA Standards/Anchors:

Eligible Content:

Standard - CC.2.1.2.B.3 Standard - CC.2.2.2.A.1 Standard - CC.2.2.2.A.2	• Use place value understanding and properties of operations to add and subtract within 1000. • Represent and solve problems involving addition and subtraction within 100. • Use mental strategies to add and subtract within 20.

Instructional Strategies:

Learning tools	Hands-on activity
Workmats	Graphic organizers
Hundreds chart	Connecting cubes
Manipulatives	Written work
Class lecture	Class discussion
Math vocabulary	

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: 2-Digit Subtraction**
Time Allotment: 6 days **Unit Sequence: Chapter 7**

Major Concepts to be learned:

- Break Apart Ones to Subtract
- Break Apart Numbers to Subtract
- Model Regrouping for Subtraction
- Model and Record 2-Digit Subtraction

Expected Skills to be demonstrated:

- To break apart a 1-digit subtrahend to subtract it from a 2-digit number.
- To break apart a 2-digit subtrhend to subtract it from a 2-digit number.
- To model 2-digit subtraction with regrouping.
- To draw quick pictures and record 2-digit subtraction using the standard algorithm.

PA Standards/Anchors:

Standard - CC.2.1.2.B.3
Standard - CC.2.2.2.A.1
Standard - CC.2.2.2.A.2

Eligible Content:

- Use place value understanding and properties of operations to add and subtract within 1000.
- Represent and solve problems involving addition and subtraction within 100.
- Use mental strategies to add and subtract within 20.

Instructional Strategies:

Learning tools	Hands-on activity	Dot paper
Large paper cutouts of plane shapes	Graphic organizers	Written work
Class discussion	Class lecture	Pattern blocks
Manipulatives (Ex: 2-color counters)	Math vocabulary	

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: More 2-Digit Subtraction**
Time Allotment: 8 days **Unit Sequence: Chapter 8**

Major Concepts to be learned:

- 2-Digit Subtraction
- Practice 2-Digit Subtraction
- Rewrite 2-Digit Subtraction
- Add to Find Differences
- Model Subtraction
- Write Equations to Represent Subtraction

Expected Skills to be demonstrated:

- To record 2-digit subtraction using the standard algorithm.
- To practice 2-digit subtraction with and without regrouping.
- To rewrite horizontal subtraction problems vertically in the standard algorithm format.
- To use addition to find differences.
- To solve problems involving 2-digit subtraction by using the strategy *draw a diagram.*
- To represent subtraction situations with equations using a symbol for the unknown number.

PA Standards/Anchors:	Eligible Content:
Standard - CC.2.1.2.B.3 Standard - CC.2.2.2.A.1 Standard - CC.2.2.2.A.2	• Use place value understanding and properties of operations to add and subtract within 1000. • Represent and solve problems involving addition and subtraction within 100. • Use mental strategies to add and subtract within 20.

Instructional Strategies:		Assessments:
Learning tools	Hands-on activity	• Quick Check Quizzes • Chapter Review Test
Solid shapes	Graphic organizers	
Manipulatives	Written work	
Class lecture	Class discussion	
Pattern blocks	Math vocabulary	

Grade Level: 2 | **Course Title: Mathematics** | **Topic/Concept: 2-Digit Addition and Subtraction**

Time Allotment: 6 days | **Unit Sequence: Chapter 9**

Major Concepts to be learned:

- Models for Multistep Problems
- Write Problem Situations
- Balance Number Sentences
- Equal and Not Equal

Expected Skills to be demonstrated:

- To analyze word problems to determine what operations to use to solve 2-step problems.
- To write a real-world problem that can be shown by an equation.
- To apply the concept of equations to solve for unknown numbers in addition equations.
- To compare expressions using the = and ≠ symbols.

PA Standards/Anchors:

Standard - CC.2.1.2.B.3
Standard - CC.2.2.2.A.1
Standard - CC.2.2.2.A.2

Eligible Content:

- Use place value understanding and properties of operations to add and subtract within 1000.
- Represent and solve problems involving addition and subtraction within 100.
- Use mental strategies to add and subtract within 20

Instructional Strategies:

Learning tools
Solid shapes
Workmat
Written work
Class discussion
Math vocabulary
Connecting cubes
Hands-on activity
Graphic organizers
Manipulatives
Class lecture
Pattern blocks
Two-color counters

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: 3-Digit Addition and Subtraction**

Time Allotment: 13 days **Unit Sequence: Chapter 10**

Major Concepts to be learned:

- Draw to represent 3-Digit Addition
- Break Apart 3-Digit Addends
- 3-Digit Addition: Regroup Ones
- 3-Digit Addition: Regroup Tens
- Addition: Regroup Ones and Tens
- 3-Digit Subtraction
- 3-Digit Subtraction: Regroup Tens
- 3-Digit Subtraction: Regroup Hundreds
- Subtraction: Regroup Tens and Hundreds
- Regrouping with Zeros

Expected Skills to be demonstrated:

- To draw quick pictures or use a number line model to represent 3-digit addition.
- To apply place value concepts when using a break-apart strategy for 3-digit addition.
- To record 3-digit addition using the standard algorithm with possible regrouping of ones.
- To record 3-digit addition using the standard algorithm with possible regrouping of the tens.
- Record 3-digit addition using the standard algorithm with possible regrouping of both ones and tens.
- To solve problems involving 3-digit subtraction by using a number line model.
- To record 3-digit subtraction using the standard algorithm with possible regrouping of tens.
- To recod 3-digit subtraction using the standard algorithm with possible regrouping of the hundreds.
- To record subtraction using the standard algorithm when there are zeros in the minuend.

PA Standards/Anchors:

Standard - CC.2.1.2.B.3
Standard - CC.2.2.2.A.1
Standard - CC.2.2.2.A.2

Eligible Content:

- Use place value understanding and properties of operations to add and subtract within 1000.
- Represent and solve problems involving addition and subtraction within 100.
- Use mental strategies to add and subtract within 20

Instructional Strategies:

Learning tools	Hands-on activity
Math vocabulary	Graphic organizers
Workmats	Place value blocks
Manipulatives	Written work
Class lecture and discussion	Paper clips

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: Money**
Time Allotment: 8 days **Unit Sequence: Chapter 11**

Major Concepts to be learned:

- Find the Total Coin Value
- Equal Amounts
- One Dollar
- One, Five, and Ten Dollar Bills
- Compute the Value of Dollar Combinations
- Solve problems Involving Money

Expected Skills to be demonstrated:

- To find the value of a group of coins.
- To solve a problem by acting it out.
- To use coins to show the value of a dollar.
- To tell the values of $1, $5, $10 dollar bills.
- To find the value of a group of bills.
- To solve problems involving money.

PA Standards/Anchors: Eligible Content:

Standard - CC.2.4.2.A.3	Solve problems and make change using coins and paper currency with appropriate symbols.

Instructional Strategies:

Learning tools 28 – 30	Hands-on activity
Floor number line	Graphic organizers
Workmat 3	Place value blocks
Manipulatives	Written work
Class lecture and discussion	Calculators
Math vocabulary	

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: Time**
Time Allotment: 6 days **Unit Sequence: Chapter 12**

Major Concepts to be learned:

- Time to 15 Minutes
- Time to 5 Minutes
- Practice Telling Time
- A.M. and P.M.

Expected Skills to be demonstrated:

- To tell time to 15 minutes on an analog ordigital clock.
- To tell and write time to the nearest five minutes.
- To practice telling time on digital and analog clocks.
- To tell and write time using A.M. and P.M.

PA Standards/Anchors:

Standard - CC.2.4.2.A.2

Eligible Content:

- Tell and write time to the nearest five minutes using both analog and digital clocks.

Instructional Strategies:

Workmats (3,5)
Cubes (ones and tens)
Manipulatives
Class lecture
Hundred Chart
Practice clocks
Hands-on activity
Graphic organizers
Written work
Class discussion
Math vocabulary

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: Length in Customary Units**

Time Allotment: 13 days **Unit Sequence: Chapter 13**

Major Concepts to be learned:

- Meausre with Inch Models
- Make and Use a Ruler
- Estimate Lengths in Inches
- Measure with an Inch Ruler
- Add and Subtract Lengths in Inches
- Measure in Inches and Feet
- Estimate lengths in Feet
- Estimate and Measure to the Nearest Yard
- Estimate Lengths to Solve Problems
- Choose a Tool
- Display Measurement Data

Expected Skills to be demonstrated:

- To use concrete mondels to measure the lengths of objects in inches.
- To make an inch ruler and use it to measure the lengths of objects.
- To estimate the lengths of objects by mentally partitioning the lengths into inches.
- To measure the lengths of objects to the nearest inch using an inch ruler.
- To solve addition and subtraction problems involving lengths of objects by using the strategy *draw a diagram.*
- To measure the lengths of objects in both inches and feet to explore the inverse relationship between size and number of units.
- To estimate the length of objects in feet.
- To estimate the length of objects in yards.
- To estimate lengths to solve measurement problems.
- To select appropriate tools for measuring different lengths.
- To measure the lengths of objects and use a line plot to display the measurement data.

PA Standards/Anchors:

Standard - CC.2.4.2.A.1
Standard - CC.2.4.2.A.4
Standard - CC.2.4.2.A.6

Eligible Content:

- Measure and estimate lengths in standard units using appropriate tools.
- Represent and interpret data using line plots, picture graphs, and bar graphs.
- Extend the concepts of addition and subtraction to problems involving length.

Instructional Strategies:

Thermometer
Balance
Written work
Class lecture
Various objects to weigh
Containers (cup, pint, quart, gallon, liter)
Hands-on activity
Learning Tool 49
Math vocabulary
Class discussion
Ruler and Yard Stick

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 | **Course Title: Mathematics** | **Topic/Concept: Length in Metric Units**

Time Allotment: 9 days | **Unit Sequence: Chapter 14**

Major Concepts to be learned:

- Measure with a Centimeter Model
- Estimate Lengths in Centimeters
- Measure with a Centimeter Ruler
- Add and Subtract Lengths in Centimeters
- Centimeters and Meters
- Estimate Lengths in Meters
- Measure and Compare Lengths

Expected Skills to be demonstrated:

- To use a concrete model to measure the lengths of objects in centimeters.
- To estimate lengths of objects in centimeters by comparing them to known lengths.
- To measure lengths of objects to the nearest centimeter using a centimeter ruler.
- To solve problems involving adding and subtracting the lengths by using the strategy *draw a diagram.*
- To measure the lengths of objects in both centimeters and meters to explore the inverse relationship between size and number of units.
- To estimate the length of objects in meters.
- To measure and then find the difference in the lengths of two objects.

PA Standards/Anchors:

Standard - CC.2.4.2.A.1
Standard - CC.2.4.2.A.6

Eligible Content:

- Measure and estimate lengths in standard units using appropriate tools.
- Extend the concepts of addition and subtraction to problems involving length.

Instructional Strategies:

Hands-on activitie	Hundred Chart
Written work	Math vocabulary
Various items to measure	Class lecture
Class discussion	Rulers and Meter stick

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 | **Course Title: Mathematics** | **Topic/Concept: Geometry**

Time Allotment: 9 days | **Unit Sequence: Chapter 15**

Major Concepts to be learned:

- Three-Dimensional Shapes
- Attributes of Three-Dimensional Shapes
- Two-Dimensional Shapes
- More Two-Dimensional Figures
- Draw Two-Dimensional Figures
- Sort Two-Dimensional Figures
- Partition Rectangles

Expected Skills to be demonstrated:

- To identify and name three-dimensional shapes and objects that match.
- To identify and describe three-dimensional shapes according to the number of faces, edges, and vertices.
- To name 3-, 4-, 5-, and 6-sided figures according to the number of sides and angles.
- To identify the number of sides and the number of angles of a polygon.
- To draw two-dimensional figures.
- To sort two-dimensional figures according to their attributes.
- To partition rectangles into equal-sized squares that will cover a rectangle.

PA Standards/Anchors:	Eligible Content:
Standard - CC.2.3.2.A.1 Standard - CC.2.3.2.A.2	• Analyze and draw two- and three-dimensional shapes having specified attributes. • Use the understanding of fractions to partition shapes into halves, quarters, and thirds.

Instructional Strategies:		Assessments:
Hands-on activites Math vocabulary Class discussion	Written work Class lecture Square counters	• Quick Check Quizzes • Chapter Review Test

Grade Level: 2 **Course Title: Mathematics** **Topic/Concept: Fraction Concepts**
Time Allotment: 6 days **Unit Sequence: Chapter 16**

Major Concepts to be learned:

- Equal Parts
- Show Equal Parts of a Whole
- Describe Equal Parts
- Equal Shares

Expected Skills to be demonstrated:

- To identify and name equal parts of circles and rectangles as halves, thirds, or fourths.
- To paritition shapes to show halves, thirds, or fourths.
- To identify and describe one equal part as a half of, a third of, or a fourth of a whole.
- To solve problems involving wholes divided into equal shares by using the strategy *draw a diagram.*

PA Standards/Anchors:

Eligible Content:

Standard - CC.2.3.2.A.2	• Use the understanding of fractions to partition shapes into halves, quarters, and thirds.

Instructional Strategies:

Clocks	Hands-on activity
Cubes	Learning Tool 38, 44
Written work	Math vocabulary
Class lecture	Class discussion

Assessments:

- Quick Check Quizzes
- Chapter Review Test

Grade Level: 2 | **Course Title: Mathematics** | **Topic/Concept: Data**

Time Allotment: 8 days | **Unit Sequence: Chapter 17**

Major Concepts to be learned:

- Collect and Represent Data
- Picture Graphs
- Make Picture Graphs
- Read bar Graphs
- Make Bar Graphs
- Practice Picture and Bar Graphs

Expected Skills to be demonstrated:

- To collect data in a survey and record that data in a tally chart.
- To interpret data in a picture graph and use that information to solve problems.
- To make picture graphs to represent data.
- To interpret data in bar graphs and use that information to solve problems.
- To make bar graphs to represent data.
- To make a picture graph and a bar graph using a scale of 1.

PA Standards/Anchors:

Eligible Content:

PA Standards/Anchors:	Eligible Content:
Standard - CC.2.4.2.A.4	• Represent and interpret data using line plots, picture graphs, and bar graphs.

Instructional Strategies:

Assessments:

Instructional Strategies:		Assessments:
Hands-on activity Math vocabulary Class discussion	Written work Class lecture Graph Paper	• Quick Check Quizzes • Chapter Review Test

Grade Level: 2 **Course Title: Math Basic Facts** **Topic/Concept: Addition Facts to 18**
Time Allotment: 90 days **Unit Sequence: Addition Set I – Set X**

Major Concepts to be learned:

- Automaticity with Addition Number Facts to 18

Expected Skills to be demonstrated:

- Demonstrate Number of Math Facts Completed in 1 Minute

PA Standards/Anchors:	Eligible Content:
2.2.2.A	• Develop fluency and the use of basic facts for addition.

Instructional Strategies:	Assessments:
Addition Basic Training Sheets Set I – Set X Timer Basic Training Answer Sheets Basic Training Score Cards Addition Flashcards	• Weekly Test

Grade Level: 2 **Course Title: Math Basic Facts** **Topic/Concept: Subtraction Facts to 18**
Time Allotment: 90 days **Unit Sequence: Subtraction Set I – Set X**

Major Concepts to be learned:

- Automaticity with Subtraction Number Facts to 18

Expected Skills to be demonstrated:

- Demonstrate Number of Math Facts Completed in 1 Minute

PA Standards/Anchors:	Eligible Content:
2.2.2.A	• Develop fluency and the use of basic facts for subtraction.

Instructional Strategies:	Assessments:
Subtraction Basic Training Sheets Set I – Set X Timer Basic Training Answer Sheets Basic Training Score Cards Subtraction Flashcards	• Weekly Test