Southern York County School District Instructional Plan

Name: Second Grade	**Dates: August-September**
Course/Subject: Math	**Unit 1: Numbers & Routines**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

Number and Operations in Base Ten:

- **Use place value concepts to read, write, and skip count to 1,000 CC.2.1.2.B.2**
- **Use place value understanding and properties of operations to add and subtract within 1,000 CC.2.1.2.B.3;**
- **Use place value concepts to represent amounts of tens & ones and compare three digit numbers CC.2.1.2.B.1**

Operations & Algebraic Thinking:

- **Use mental strategies to add and subtract within 20 CC.2.2.2.A.2**

Measurement, Data, and Probability:

- **Tell and write time to the nearest five minutes using both analog and digital clocks CC.2.4.2.A.2;**
- **Solve problems and make change using coins and paper currency with appropriate symbols CC.2.4.2.A.3**
- **Represent & interpret data using line plots/pictographs/bar graphs CC.2.4.2.A.4**
- **Use appropriate tools strategically.**
- **Model with mathematics.**
- **Make sense of problems & persevere in solving them.**

Understanding(s): ***Students will understand . . .***	**Essential Question(s):**
1. Number order, sequence, and compare numbers to 1,000 2. Counting, calculating, and comparing total value of coin and bill combinations 3. Telling and showing time to half-hour 4. Basic addition facts 5. Identifying and using number patterns 6. Writing equivalent names for numbers	▪ How do numbers relate to each other? ▪ How can patterns be used to describe relationships in mathematical situations?

Learning Objectives:
Students will know and be able to . . .

- Number order, sequence, and compare numbers to 1,000
- Count, calculate, and compare total value of coin and bill combinations
- Tell and show time to half-hour
- Use basic addition facts
- Identify and use number patterns
- Write equivalent names for numbers

Name: Second Grade	**Dates: September-October**
Course/Subject: Math	**Unit 2: Addition & Subtraction Facts**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

Number and Operations in Base Ten:

- **Use place value concepts to read, write, and skip count to 1,000 CC.2.1.2.B.2;**
- **Use place value understanding and properties of operations to add and subtract within 1,000 CC.2.1.2.B.3**

Operations & Algebraic Thinking:

- **Use mental strategies to add and subtract within 20 CC.2.2.2.A.2;**
- **Represent and solve problems involving addition and subtraction within 100 CC.2.2.2.A.1**

Measurement, Data, & Probability:

- **Solve problems & make change using appropriate symbols CC.2.4.2.A.3**
- **Represent & interpret data using line plots/pictographs/bar graphs CC.2.4.2.A.4**

Make sense of problems & persevere in solving them.

Model with mathematics.

Use appropriate tools strategically.

Reason abstractly & quantitatively.

Understanding(s):	**Essential Question(s):**
Students will understand . . . 1. Creating, representing, and solving addition number stories 2. Strategies for addition and subtraction of basic facts 3. Inverse relationships between addition and subtraction (fact families) 4. Rules for generating and solving number sequences	▪ What is the power of addition and subtraction? ▪ What makes a tool and/or strategy useful for a given task?

Learning Objectives:

Students will know and be able to . . .

- How to create, represent, and solve addition number stories
- Strategies for addition and subtraction of basic facts
- Inverse relationships between addition and subtraction (fact families)
- Rules for generating and solving number sequences

Name: Second Grade	**Dates: October**
Course/Subject: Math	**Unit 3: Place Value, Money, & Time**

Stage 1 – Desired Results

PA Core Content and Practice Standards:

Numbers and Operations in Base Ten:

- **Use place value concepts to represent amounts of tens and ones and to compare three digit numbers CC.2.1.2.B.1;**
- **Use place value concepts to read, write, & skip count to 1000 CC.2.1.2.B.2**

Operations & Algebraic Thinking:

- **Represent & solve problems involving addition & subtraction within 100 CC.2.2.2.A.1;**
- **Use mental strategies to add & subtract within 20 CC.2.2.2.A.2**

Measurement, Data, and Probability:

- **Tell and write time to the nearest five minutes using both analog and digital clocks CC.2.4.2.A.2;**
- **Solve problems using coins and paper currency with appropriate symbols CC.2.4.2.A.3;**
- **Represent and interpret data using line plots, picture graphs, and bar graphs CC.2.4.2.A.4**

Make sense of problems & persevere in solving them.

Model with mathematics.

Use appropriate tools strategically.
Construct viable arguments & critique the reasoning of others.
Look for & express regularity in repeated reasoning.

Understanding(s): ***Students will understand . . .***	**Essential Question(s):**
1. Place value to three digit numbers 2. Counting and exchanging coin amounts and making change needed for real-life situations 3. Telling and showing time to half-hour 4. Gathering and entering data to create a bar graph 5. Rules for generating and solving number sequences	▪ How are numbers connected to the real world? ▪ How does the type of data influence a display? ▪ What makes a tool and/or strategy useful for a given task?

Learning Objectives:
Students will know and be able to . . .

- Place value to three digit numbers
- Count and exchange coin amounts and make change needed for real-life situations
- Tell and show time to half-hour
- Gather and enter data to create a bar graph
- Rules for generating and solving number sequences

Name: Second Grade	**Dates: November**
Course/Subject:	**Unit 4: Addition and Subtraction**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

- **Number and Operations in Base Ten: Use place value understanding and properties of operations to add and subtract within 1,000 (CC.2.1.2.B.3)**
- **Algebraic Concepts: Use mental strategies to add and subtract within 20 (CC.2.2.2.A.2); Represent and solve problems involving addition and subtraction within 100 (CC.2.2.2.A.1)**
- **Measurement, Data, and Probability: Solve problems using coins and paper currency with appropriate symbols (CC.2.4.2.A.3)**
- **Make sense of problems & persevere in solving them.**
- **Use appropriate tools strategically.**
- **Construct viable arguments & critique the reasoning of others.**
- **Attend to precision.**
- **Reason abstractly and quantitatively.**
- **Look for and express regularity in repeated reasoning.**

Understanding(s): ***Students will understand . . .***	**Essential Question(s):**
1. How to use diagrams to solve addition/subtraction number stories 2. Calculating total value of coin combinations 3. Estimation 4. Different strategies for adding two- and three-digit numbers 5. Time to the quarter hour	▪ What are different methods used to add and subtract? ▪ How does estimation help us attend to precision to solve addition/subtraction problems? ▪ How can we use estimations to solve real-world money situations? ▪ Why is telling time a useful skill in everyday life?

Learning Objectives:
Students will know and be able to. . .

- Use diagrams to solve addition/subtraction number stories
- Calculate total value of coin combinations
- Make ballpark estimates
- Develop and use different strategies for adding two- and three-digit numbers

Name: Second Grade	**Dates: December**
Course/Subject: Math	**Unit 5: 3-D and 2-D Shapes**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

- **Geometry: Analyze and draw two- and three-dimensional shapes having specified attributes (CC.2.3.2.A.1)**
- **Operations & Algebraic Thinking: Solve addition & subtraction problems within 100 (CC.2.2.2.A.1)**
- **Measurement & Data: Tell and write time to nearest 5 minutes (CC.2.4.2.A.2)**
- **Use tools strategically.**
- **Construct viable arguments and critique the reasoning of others.**
- **Look for and make use of structure.**

Understanding(s): ***Students will understand . . .***	**Essential Question(s):**
1. Points and line segments 2. Meaning of parallel lines 3. Identify characteristics of 3-D shapes 4. Relationship among the number of faces, edges, and vertices of 3-D shapes 5. How to use estimation & subtraction skills with 2 digit numbers 6. How to read time with analog & digital clocks	▪ How do geometric concepts help us compare & classify objects in the world? ▪ What attributes help us identify and create 2D and 3D shapes? ▪ Why is it important to use estimation & computation for problem solving? ▪ How is telling time a useful skill in everyday life?

Learning Objectives:
Students will know and be able to. . .

- Define, name, and draw line segments
- Identify and draw parallel lines and shapes
- Compare and contrast 2D & 3D shapes
- Construct pyramids
- Identify faces, edges, and vertices
- Use correct geometry vocabulary to identify attributes of 2D & 3D shapes.
- Match analog & digital representations of time
- Use estimation & 2-digit subtraction to solve problems

Name: Second Grade	**Dates: January**
Course/Subject: Math	**Unit 6: Whole Number Operations & Number Stories**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

- **Number and Operations: Use place value understanding and properties of operations to add and subtract within 1,000 (CC.2.1.2.B.3)**

Algebraic Concepts:

- **Use mental strategies to add and subtract within 20 (CC.2.2.2.A.2)**
- **Represent and solve problems involving addition and subtraction within 100 (CC.2.2.2.A.1)**
- **Work with equal groups of objects to gain foundations for multiplication (CC.2.2.2.A.3)**

Measurement, Data, and Probability:

- **Represent and interpret data using line plots, picture graphs, and bar graphs (CC.2.4.2.A.4)**
- **Make sense of problems and persevere in solving them.**
- **Reason abstractly and quantitatively.**
- **Model with mathematics.**
- **Attend to precision.**
- **Look for and express regularity in repeated reasoning.**
- **Construct viable arguments and critique the reasoning of others.**

Understanding(s): ***Students will understand . . .***	**Essential Question(s):**
1. How to use diagrams to solve addition and subtraction number stories 2. Ballpark estimates 3. Different strategies for adding two- and three-digit numbers 4. Collecting, sorting, tallying, and graphing data 5. Solving multiplication problems by creating diagram and array models	▪ How can we use our operations to solve number stories? ▪ How can arrays and equal groups show us how multiplication works? ▪ Which strategies can you use to solve addition and subtraction problems? ▪ What is the relationship between diagrams and data sets?

Learning Objectives:
Students will know and be able to. . .

- Use diagrams to solve addition and subtraction number stories
- Make ballpark estimates
- Develop and use different strategies for adding two- and three-digit numbers
- Collect, sort, tally, and graph data
- Solve multiplication problems by creating diagram and array models

Name: Second Grade	**Dates: February**
Course/Subject: Math	**Unit 7: Patterns and Rules**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

- **Use place value concepts to read, write, and skip count to 1,000 CC.2.1.2.B.2;**
- **Use place value understanding and properties of operations to add and subtract within 1,000 CC.2.1.2.B.3**
- **Use mental strategies to add and subtract within 20 CC.2.2.2.A.2;**
- **Represent and solve problems involving addition and subtraction within 100 CC.2.2.2.A.1**
- **Represent and interpret data using line plots, picture graphs, and bar graphs CC.2.4.2.A.4**
- **Attend to precision.**
- **Look for and express regularity in repeated reasoning.**
- **Look for and make use of structure.**

Understanding(s): ***Students will understand . . .***	**Essential Question(s):**
1. Skip counting to 1,000 with and without a calculator	▪ How do number patterns help us to use numbers for computing and organizing? ▪ How can we use number patterns to sort

2. Finding complements of 10 and number patterns for addition/subtraction problems using mental arithmetic skills 3. Sorting and arranging numerical data to develop diagrams (frequency table, line plot, and bar graph)	and organize data? ▪ What are the benefits of solving addition/subtraction problems mentally?

Learning Objectives:
Students will know and be able to. . .

- Skip count to 1,000 with and without a calculator
- Find complements of 10 and number patterns for addition/subtraction problems using mental arithmetic skills
- Sort and arrange numerical data to develop diagrams (frequency table, line plot, and bar graph)

Name: Second Grade	**Dates: February-March**
Course/Subject: Math	**Unit 8: Fractions**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

- **Use the understanding of fractions to partition shapes into halves, quarters, and thirds**
- **Work with equal groups of objects to gain foundations for multiplication**
- **Construct viable arguments and critique the reasoning of others.**
- **Reason abstractly and quantitatively.**
- **Make sense of problems and persevere in solving them.**

Understanding(s):	**Essential Question(s):**
Students will understand . . . 1. Fractions are an equal part of whole 2. Fractions can name parts of a collection 3. Equivalent fractions using manipulatives 4. Solving number problems with fractions	▪ How do we represent parts of objects with numbers? ▪ How do we partition shapes in equal parts? ▪ How do we make a group of items into fractional parts? ▪ How do we compare different fractions?

Learning Objectives:
Students will know and be able to. . .

- Demonstrate fractions as an equal part of a whole
- Name fractions for parts of a collection
- Find equivalent fractions using manipulatives
- Solve number problems with fractions

Name: Second Grade	**Dates: March**
Course/Subject: Math	**Unit 9: Measurement**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

- **Measure and estimate lengths in standard units using appropriate tools CC.2.4.2.A.1;**
- **Extend the concepts of addition and subtraction to problems involving length CC.2.4.2.A.6**
- **Make sense of problems and persevere in solving them.**
- **Use appropriate tools strategically.**
- **Model with mathematics.**

Understanding(s): ***Students will understand . . .*** 1. Measuring with standard units of length 2. Measuring to the ½ inch and centimeter 3. Basic knowledge of measurement to find area and perimeter 4. The U.S. customary and metric systems 5. Basic knowledge of addition and subtraction for solving problems involving length 6. Estimating lengths 7. Identifying appropriate units used to make measurements	**Essential Question(s):** ▪ What different tools can be used to measure lengths of objects? ▪ How are standard units of measure used in different situations? ▪ Why is it important to understand how and when to use different standards of measurements? ▪ Why does "what" we measure influence "how" we measure?
Learning Objectives: ***Students will know and be able to. . .*** ▪ Measure with standard units of length ▪ Measure to the ½ inch and centimeter ▪ Apply basic knowledge of measurement to find area and perimeter ▪ Understand the U.S. customary and metric systems ▪ Apply basic knowledge of addition and subtraction for solving problems involving length ▪ Estimate lengths ▪ Identify appropriate units used to make measurements	

Name: Second Grade	**Dates: March-April**
Course/Subject: Math	**Unit 10: Decimals & Place Value**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

- **Solve problems using coins and paper currency with appropriate symbols CC.2.4.2.A.3**
- **Use place value understanding and properties of operations to add and subtract within 1,000 CC.2.1.2.B.3;**
- **Use place value concepts to represent amounts of tens and ones and to compare three digit numbers CC.2.1.2.B.1**
- **Use place value concepts to read, write, and skip count to 1,000 CC.2.1.2.B.2**
- **Represent and solve problems involving addition and subtraction within 100 CC.2.2.2.A.1**
- **Attend to precision.**
- **Look for and make use of structure.**
- **Reason abstractly and quantitatively.**

Understanding(s): ***Students will understand . . .*** 1. Reading, writing, calculating, estimating, and comparing the value of coin and bill combinations in decimal notation 2. Strategies to make change 3. Estimating and finding the exact cost of coin and bill combinations 4. Reading, writing, and displaying numbers in proper place value formation 5. Solving mathematical equations with addition, subtraction, multiplication	**Essential Question(s):** ▪ How has our number system been developed to deal with smaller and larger numbers than ones, tens, and hundreds? ▪ What skills are required to make change? ▪ Why is knowing place value names and corresponding positions important? ▪ When is it appropriate to estimate versus find the exact cost?

Learning Objectives:
Students will. . .

- Read, write, calculate, estimate, and compare the value of coin and bill combinations in decimal notation
- Develop and apply strategies to make change
- Estimate and find the exact cost of coin and bill combinations
- Read, write, and display numbers in proper place value formation
- Solve mathematical equations with addition, subtraction, multiplication

Name: Second Grade	**Dates: April-May**
Course/Subject: Math	**Unit 11: Whole Number Operations Revisited**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

- **Solve problems using coins and paper currency with appropriate symbols**
- **Represent and solve problems involving addition and subtraction within 100**
- **Attend to precision.**
- **Look for and make use of structure.**

Understanding(s): ***Students will understand . . .***	**Essential Question(s):**
1. Reading, writing, calculating, estimating, and comparing the value of coin and bill combinations in addition/subtraction number stories 2. How to use diagrams to solve multiplication/division number stories 3. Patterns and relationships between multiplication and division facts	▪ How can we use a variety of mathematical operations to solve different types of questions? ▪ How do we solve money problems with addition and subtraction? ▪ How can patterns help us to learn multiplication and division facts?

Learning Objectives:
Students will. . .

- Read, write, calculate, estimate, and compare the value of coin and bill combinations in addition/subtraction number stories
- Use diagrams to solve multiplication/division number stories
- Recognize patterns and relationships between multiplication and division facts

Name: Second Grade	**Dates: May-June**
Course/Subject: Math	**Unit 12**

Stage 1 – Desired Results

PA Core Content & Practice Standards:

- **Tell and write time to the nearest five minutes using both analog and digital clocks CC.2.4.2.A.2**
- **Represent and interpret data using line plots, picture graphs, and bar graphs CC.2.4.2.A.4**
- **Work with equal groups of objects to gain foundations for multiplication CC.2.2.2.A.3**
- **Look for and make use of structure.**
- **Construct viable arguments and critique the reasoning of others.**
- **Reason abstractly and quantitatively.**

Understanding(s):	**Essential Question(s):**

Students will understand . . . 1. Telling and writing time to the five minute on digital and analog clocks 2. Beginning concepts of elapsed time 3. The relationship between multiplication and division (equal groups versus equal shares; turn-around facts) 4. Creating and interpreting a timeline, frequency table, line plot, and bar graph	▪ What is the relationship between units of time and how can we use it in real-life situations? ▪ How can patterns help us to learn multiplication and division facts? ▪ How do the features of a diagram help us interpret the data?
Learning Objectives: ▪ Tell and write time to the five minute on digital and analog clocks ▪ Develop beginning concepts of elapsed time ▪ Recognize and apply the relationship between multiplication and division (equal groups versus equal shares; turn-around facts) ▪ Create and interpret a timeline, frequency table, line plot and bar graph	