PLANNED INSTRUCTION

A PLANNED COURSE FOR:

Pre-Kindergarten Math

Curriculum writing committee:
Stacey Handley
Lauren Shannon

Grade Level: Pre-Kindergarten

Date of Board Approval: ____2021_____

Planned Instruction

Title of Planned Instruction: Pre-Kindergarten

Subject Area: Mathematics

Grade(s): Pre-K

Course Description:

Our Pre-K Program prepares children 4-5 years of age academically and socially for a smooth transition into Kindergarten. The Pre-K classes at our school are uniquely modeled to correspond with the curriculum and activities of the Pennsylvania Early Childhood Standards and the PA Common Core Standards. The progressive curriculum paired with a positive learning environment sets children up for success.

The Mathematics Curriculum focuses on numbers and counting, sorting and classifying, shapes, measuring, and comparing. Students will be exposed to a variety of math concepts and mathematical terms that will help them to develop the skills they need to succeed academically.

Time/Credit for the Course:
One Full Year

Curriculum Writing Committee:
Stacey Handley
Lauren Shannon

Curriculum Map

Overview:

Marking Period One – Four

Students will practice counting and cardinality. They will know number names and the count sequence. Students will be able to count to tell the number of objects and compare numbers. Students will begin to understand addition as adding to, and understand subtraction as taking from a bigger number. They will begin to understand simple patterns. Using measurement and data, they will describe and compare measurable attributes and Sort objects and count the number of objects in each category. They will also be able to identify and describe shapes (squares, circles, triangles, rectangles) and analyze, compare, and sort objects

Marking Period One-Four Goals:

- Counting and Cardinality
- Geometry
- Operations and Algebraic Thinking
- Measurement and Data

Understanding of:

- Making sense of problems and persevere in solving them
- Reasoning abstractly and quantitatively
- Constructing viable arguments and critique the reasoning of others
- Modeling with mathematics
- Using appropriate tools strategically
- Attending to precision
- Looking for and making use of structure
- Looking for and expressing regularity in repeated reasoning

UNIT 1: Numbers and Operations

Big Idea # 1:

Mathematical relationships among numbers can be represented, compared, and communicated

Essential Questions:

- How is mathematics used to quantify, compare, represent, and model numbers?
- How can mathematics support effective communication?
- How can patterns be used to describe relationships in mathematical situations?

Concepts:

- numerical sequence
- object quantity
- number comparison

Competencies:

- Rote Count to 20
- Name numerals up to 10
- represent a number of objects with a written numeral 0-10
- recognize small quantities up to 6
- Use one-to-one correspondence when counting to 10.

Big Idea # 2:

Patterns exhibit relationships that can be extended, described, and generalized

Essential Questions:

- How is mathematics used to quantify, compare, represent, and model numbers?
- How can mathematics support effective communication?
- How can patterns be used to describe relationships in mathematical situations?

Concepts:

- numerical sequence
- object Quantity
- number comparison

Competencies:

- Rote Count to 20
- Name numerals up to 10

- represent a number of objects with a written numeral 0-10
- recognize small quantities up to 6
- Use one-to-one correspondence when counting to 10.

Textbook and Supplemental Resources:

Curriculum Plan

Unit: Numbers and Operations

Time Range: 5-10 min daily/ 180 days

Standard(s):
PA Academic Standards, PACCS Mathematics

Standards Addressed:
PACCS: Math- CC.2.1.PK.A.1; CC.2.1.PK.A.2; CC.2.1.PK.A.3
PA Learning Standards for Early Childhood- 2.1 PK.A.1; 2.1 PK.A.2; 2.1 PK.A.3;2.1.PK.MP

Overview:
To build knowledge that mathematical relationships among numbers can be represented, compared, and communicated.

Focus Question(s)
How is mathematics used to quantify, compare, represent, and model numbers?

Goals:

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers
- Use mathematical processes when quantifying, comparing, representing, and modeling numbers.

Objectives:
The students will:

1. Name numerals up to 10
2. Rote count up to 20
3. Match a numeral to a set of 0-10 objects
4. Represent a number of objects with a written numeral 0-10
5. Differentiate numerals from letters
6. Counts on when a specific number is provided
7. Visually quantify to determine how many: attach a numerical value to a set of objects without counting up to 6
8. Use one-to-one correspondence when counting to 10
9. State the total number of objects counted, demonstrating understanding that the last number named tells the number of objects counted

10. Use counting and numbers as part of play and as a means for determining quantity
11. Create sets of objects with same and different amounts
12. Identify whether the number of objects in one group is greater than, less than or equal to the number of objects in another group up to 10
13. Compare two numbers between 1 and 5 when presented as written numerals
14. Practice use of mathematical vocabulary to compare numbers of objects
15. Engage in numerical play
16. When prompted, communicate thinking while engaged in numerical play
17. Talk and listen to peers during numerical play
18. Use common forms of numerical representation (e.g. fingers, tally marks, dots)

Core Activities and Corresponding Instructional Methods:

The teacher will:

1. Teach children counting songs, rhymes and chants
2. Provide and read books, poems, chants with numbers and number concepts
3. Use number words and numerals, including zero, in everyday situations
4. Provide experiences with numbers through daily routines such as attendance and calendar
5. Provide opportunities for writing numerals and representing numbers
6. Play number recognition games
7. Provide manipulatives (e.g. counting bears, magnetic numbers, lacing numbers)
8. Model strategies to help children keep track of what they are counting
9. Provide daily opportunities for children to count and recount objects
10. Ask children to pass out utensils, napkins, cups at meals and snacks to reinforce one-to-one correspondence
11. Model counting and comparing of objects in daily experiences
12. Explicitly teach mathematical vocabulary (e.g. “more than”, “less than”, “equal to”)
13. Provide opportunities for quantifying sets of objects
14. Notice children engaged in numerical play and describe what they are doing
15. Ask open-ended questions to encourage children to talk about their thinking (e.g. How do you know there are six blocks?)
16. Listen carefully to children’s responses, and restate their responses using clear, age-appropriate, mathematical language
17. Listen carefully to children’s responses in order to identify and clarify misconceptions

18. Model reasoning language (e.g. “If that is right, then…”, “That can’t be because if it were, then…”)
19. Provide many opportunities for children to talk and listen to their peers
20. Model reasoning by thinking-out-loud
21. Explicitly call attention to a child’s think-aloud to engage peers in the process
22. Acknowledge children’s use of fingers, concrete objects, or symbols to represent quantity

Assessments:

Diagnostic: Teacher Observation
Formative: In-class observation; teacher observation and discussion
Summative: Checklists and portfolios, Teaching Gold Strategies (Quarterly)

Extensions:

Math computer games
i-Pad Math apps
Math Seeds (Reading Eggs)
IXL

Correctives:

Direct one-to-one activities
Math computer games
i-Pad Math apps

Materials and Resources:

Grid Games
Number Stamping Games
Play Dough Math Mats
“I Have, Who Has” Numbers Game
Large Numerals
Giant Dice
Dot Cards for Counting
Ten Red Apples Counting Mats
Ten Red Apples Flannel Board Set
Number Recognition Worksheets
Tracing Numbers
Number puzzles

Videos:

Funky Chicken Count to 10 (Singing Walrus)

Counting 1-10 (Singing Walrus)

Jack Hartmann- Workout to 20

Singing Walrus- count to 20

Jack Hartmann- Count to 100

UNIT 2: Algebraic Concepts

Big Idea # 1:

Mathematical relationships among numbers can be represented, compared, and communicated.

Essential Questions:

- How is mathematics used to quantify, compare, represent, and model numbers?
- How can mathematics support effective communication?
- How are relationships represented mathematically?
- How can recognizing repetition or regularity assist in solving problems more efficiently?

Concepts:

- Addition and subtraction

Competencies:

- Represent addition and subtraction with objects, fingers, and mental images, and drawings, sounds, acting out situations, verbal explanations, expressions, or equations.
- Explain adding and subtracting sets of objects up to and including six.

Big Idea # 2:
Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.

Essential Questions:

- How is mathematics used to quantify, compare, represent, and model numbers?
- How can mathematics support effective communication?
- How are relationships represented mathematically?
- How can recognizing repetition or regularity assist in solving problems more efficiently?

Concepts:

- Addition and subtraction

Competencies:

- Represent addition and subtraction with objects, fingers, and mental images, and drawings, sounds, acting out situations, verbal explanations, expressions, or equations.
- Explain adding and subtracting sets of objects up to and including six.

Big Idea # 3:
Patterns exhibit relationships that can be extended and represent and model numbers

Essential Questions:

- How is mathematics used to quantify, compare, represent, and model? numbers?
- How can mathematics support effective communication?
- How are relationships represented mathematically?
- How can recognizing repetition or regularity assist in solving problems more efficiently?

Concepts:

- Addition and subtraction

Competencies:

- Represent addition and subtraction with objects, fingers, and mental images, and drawings, sounds, acting out situations, verbal explanations, expressions, or equations.
- Explain adding and subtracting sets of objects up to and including six.

Unit: Algebraic Concepts **Time Range: 5-10 min daily/ 180 days**

Standard(s):
PA Academic Standards, PACCS Mathematics

Standards Addressed:
PACCS: Math- CC.2.2.PK.A.1
PA Learning Standards for Early Childhood- 2.2 PK.A.1; 2.2 PK.A.MP

Overview:
To build knowledge that mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.

Focus Question(s)
How are relationships represented mathematically?

Goals:

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
- Use mathematical processes when representing relationships

Objectives:
The students will:

1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g. claps), acting out situations, verbal explanations, expressions, or equations
2. Explain adding and subtracting sets of objects up to and including six, using basic math vocabulary (e.g. putting together, adding to, taking away, taking apart, taking from)
3. Join sets of objects
4. Separate sets of objects
5. Add objects to a set and tell a number story about it
6. Problem solve during mathematical play
7. When prompted, communicate thinking while engaged in mathematical play
8. Talk and listen to peers during mathematical play
9. Use common forms of numerical representation (e.g. fingers, tally marks, dots)

Core Activities and Corresponding Instructional Methods:

The teacher will:

1. Model using appropriate math vocabulary when adding objects to a set
2. Model using appropriate math vocabulary when taking away objects from a set
3. Use manipulatives to demonstrate joining and separating sets
4. Notice children engaged in mathematical play and describe what they are doing
5. Ask open-ended questions to encourage children to talk about their thinking
6. Listen carefully to children's responses, and restate their responses using clear, age-appropriate, mathematical language
7. Provide many opportunities for children to talk and listen to their peers
8. Model reasoning by thinking-out-loud
9. Acknowledge children's use of fingers, concrete objects, or symbols to represent quantity

Assessments:

Diagnostic: Teacher Observation

Formative: In-class observation; teacher observation and discussion

Summative: Checklists and portfolios

Extensions:

Computer Games

i-Pad apps

Math Seeds

IXL

Correctives:

Direct one-to-one activities

Materials and Resources:

More, Less, Same Unifix Cubes Lesson

More, Less, Same Bear Counters Lesson

Math Manipulatives

Addition Games

Subtraction Games

Matching objects activities

Videos:

- Jack Hartmann- Move and Add, Add and Move
- Addition- Words with Puffballs (sesame studios)
- Comparing Numbers for Kids
- More or Less (Sesame Street)

Unit 3: Measurement, Data, and Probability

Big Idea #1:
Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.

Essential Questions:

- What does it mean to estimate or analyze numerical quantities?
- What makes a tool and/or strategy appropriate for a given task?
- What does "what" we measure influence "how" we measure?
- In what ways are the mathematical attributes of objects or processes measured, calculated and/or interpreted?
- How can data be organized and represented to provide insight into the relationship between quantities?

Concepts:

- Measurable attributes
- Object classification and count

Competencies:

- Describe measurable attributes of objects, such as length and weight. Sort and order by one attribute.
- Compare two objects with a measurable attribute in common and describe the difference.
- Classify up to 10 objects using one attribute into categories; display the number objects in each category; count and compare the quantities of each category.

Big Idea # 2:
Measurement attributes can be quantified, and estimated using customary and non-customary units of measure.

Essential Questions:

- What does it mean to estimate or analyze numerical quantities?
- What makes a tool and/or strategy appropriate for a given task?
- What does "what" we measure influence "how" we measure?
- In what ways are the mathematical attributes of objects or processes

measured, calculated and/or interpreted?
- How can data be organized and represented to provide insight into the relationship between quantities?

Concepts:
- Measurable attributes
- Object classification and count

Competencies:
- Describe measurable attributes of objects, such as length and weight. Sort and order by one attribute.
- Compare two objects with a measurable attribute in common and describe the difference.
- Classify up to 10 objects using one attribute into categories; display the number objects in each category; count and compare the quantities of each category.

Big Idea # 3:
Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.

Essential Questions:
- What does it mean to estimate or analyze numerical quantities?
- What makes a tool and/or strategy appropriate for a given task?
- What does "what" we measure influence "how" we measure?
- In what ways are the mathematical attributes of objects or processes measured, calculated and/or interpreted?
- How can data be organized and represented to provide insight into the relationship between quantities?
- How does the type of data influence the choice of display?

Concepts:
- Measurable attributes
- Object classification and count

Competencies:
- Describe measurable attributes of objects, such as length and weight. Sort and order by one attribute.
- Compare two objects with a measurable attribute in common and describe the difference.

- Classify up to 10 objects using one attribute into categories; display the number objects in each category; count and compare the quantities of each category.

Big Idea # 4:
Data can be modeled and used to make inferences.

Essential Questions:

- What does it mean to estimate or analyze numerical quantities?
- What makes a tool and/or strategy appropriate for a given task?
- How can data be organized and represented to provide insight into the relationship between quantities?
- How does the type of data influence the choice of display?

Concepts:

- Measurable attributes
- Object classification and count

Competencies:

- Describe measurable attributes of objects, such as length and weight. Sort and order by one attribute.
- Compare two objects with a measurable attribute in common and describe the difference.
- Classify up to 10 objects using one attribute into categories; display the number
- objects in each category; count and compare the quantities of each category.

Unit: Measurement, Data and Probability Time Range: 5-10 min Daily/ 180 days

Standard(s):
PA Academic Standards, PACCS Mathematics

Standards Addressed:
PACCS: Math- CC.2.4.PK.A.1; CC.2.4.PK.A.2
PA Learning Standards for Early Childhood- 2.4 PK.A.1; 2.4 PK.A.2; 2.4 PK.A.MP

Overview:
- To build knowledge that measurement attributes can be quantified and estimated using customary and non-customary units of measure
- Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.

Focus Question(s)
- Why does “what” we measure influence “how” we measure?
- How can data be organized and represented to provide insight into the relationship between quantities?

Goals:
- Describe and compare measurable attributes of length and weights of everyday objects.
- Classify objects and count the number of objects in each category.
- Use mathematical processes when measuring; representing, organizing, and understanding data.

Objectives:
The students will:
1. Recognize attributes of objects that can be measured
2. Measure objects using non-standard items (e.g. hands, shoes, yarn, blocks)
3. Practice use of standard measurement tools
4. Practice using measurement vocabulary
5. Sort and order by one attribute
6. Use ordinal number words to describe the position of objects (first, second, last)
7. Compare two objects with a measurable attribute in common to see which object has “more of”/ “less of” the attribute and describe the difference
8. Classify up to 10 objects using one attribute into categories
9. Display the number of objects in each category
10. Count and compare the quantities of each category to describe which category

has “more of”/ “less of” the attribute

11. Engage in activities that include measuring, representing, organizing, and understanding data
12. Persist in activities that include measuring, representing, organizing, and understanding data
13. Problem solve in activities that include measuring, representing, organizing, and understanding data
14. When prompted, communicate thinking while engaged in activities that include measuring, representing, organizing, and understanding data
15. Talk and listen to peers during activities that include measuring, representing, organizing, and understanding data

Core Activities and Corresponding Instructional Methods:

The teacher will:

1. Show children how to measure with non-standard items
2. Provide measuring tools (e.g. rulers, scales, measuring cups) for children to explore and use in their play
3. Explicitly discuss and model use of standard measuring tools, using measurement vocabulary
4. Engage children in cooking experiences
5. Ask questions about measurement (e.g. “How tall are you? “How much does that weigh?” “How many footsteps to the door?”)
6. Provide materials to practice sorting and classifying
7. Model sorting and classifying
8. Use verbal prompts (e.g. “Let’s put all the red crayons in this cup”)
9. Label storage containers with visual prompts to encourage sorting and classifying
10. Sing, recite finger plays, and read books that explore different categories (e.g. colors, shapes, animals)
11. Ask children about groups (e.g. “Why do these things belong together?”)
12. Collect objects to use for data collection
13. Model organization of data for graphing purposes
14. Model, using mathematical vocabulary, comparing data on graphs and charts (e.g. more, equal, less, not equal)
15. Make comparisons part of daily routine (e.g. “Do more people walk or ride to school?”)
16. Notice children engaged in measurement activities and describe what they are doing
17. Engage children in opportunities to measure, represent, organize, and understand data

18. Ask open-ended questions to encourage children to talk about their thinking (e.g. “I wonder how we could discover which type of weather we get the most of this month?”)
19. Listen carefully to children’s responses, and restate their responses using clear, age-appropriate, mathematical language
20. Listen carefully to children’s responses in order to identify and clarify misconceptions
21. Model reasoning language (e.g. “If that is right, then…” “That can’t be because if it were, then…”)
22. Provide many opportunities for children to talk and listen to their peers
23. Model reasoning by thinking-out-loud
24. Explicitly call attention to a child’s think-aloud to engage peers in the process

Assessments:

Diagnostic: Teacher Observation
Formative: In-class observation; teacher observation and discussion
Summative: Checklists and portfolios

Extensions:

Computer Games
i-Pad Games
Math Seeds (Reading Eggs)
IXL

Correctives:

Direct one-to-one activities

Materials and Resources:

Measurement tools
File folder games
Math vocabulary cards
Graphs
Sorting Sheets
Leaf Sorting
Bear Family Sorting
Bug Counting & Sorting Mats

Videos:

Kids Academy- Sorting objects and counting for kids

Sesame Street: Sorting Song
Sorting with Colors (Kids Academy)
Sorting by Size (Kids Academy)
Which one is different (Kids Academy)

UNIT: Geometry

Big Idea # 1:

Patterns exhibit relationships that can be extended, described and generalized

Essential Questions:

- how can patterns be used to describe relationships in mathematical situations?
- how can recognizing repetition or regularity assist in solving problems more efficiently?
- how are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems/
- how can the application of the attributes of geometric shapes support mathematical reasoning and problem solving?
- How can geometric properties and theorems be used to describe, model, and analyze situations?

Concepts:

- shape identification and description
- shape comparison and composition

Competencies:

- identify shapes as two-dimensional or three dimensional
- describe objects in the environment using names of shapes and describe the relative positions of these objects
- use simple shapes to compose larger shapes
- analyze and compare two-and-three dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts, and other attributes.
- model shapes in the world by building shapes from components and drawing shapes.

Big Idea # 2:

geometric relationships can be described, analyzed, and classifies based on spatial reasoning and/or visualization.

Essential Questions:

- how can patterns be used to describe relationships in mathematical situations?
- how can recognizing repetition or regularity assist in solving problems more efficiently?
- how are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems/
- how can the application of the attributes of geometric shapes support mathematical reasoning and problem solving?
- How can geometric properties and theorems be used to describe, model, and analyze situations?

Concepts:

- shape identification and description
- shape comparison and composition

Competencies:

- identify shapes as two-dimensional or three dimensional
- describe objects in the environment using names of shapes and describe the relative positions of these objects
- use simple shapes to compose larger shapes
- analyze and compare two-and-three dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts, and other attributes.
- model shapes in the world by building shapes from components and drawing shapes.

Unit: Geometry **Time Range: 5-10 min Daily/180 days**

Standard(s):
PA Academic Standards, PACCS Mathematics

Standards Addressed:
PACCS: Math- CC.2.3.PK.A.1; CC.2.3.PK.A.2
PA Learning Standards for Early Childhood- 2.2 PK.A.1; 2.3 PK.A.2; 2.3 PK.A.MP

Overview:
To build knowledge that geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.

Focus Question(s)
How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems?
How can the application of the attributes of geometric shapes support mathematical reasoning and problem-solving?

Goals:

- Identify and describe shapes.
- Analyze, compare, create, and compose shapes.
- Use mathematical processes when drawing, constructing, modeling, and representing shapes.

Objectives:
The students will:

1. Describe objects in the environment using names of shape
2. Recognize and describe the attributes of geometric figures
3. Describe the relative positions of objects using terms such as above, below, beside, in front of, behind, and next to
4. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (solid)
5. Analyze and compare two-and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts and other attributes
6. Model shapes in the world by building shapes from components and drawing shapes
7. Use geoboards to create shapes with rubber bands
8. Use simple shapes to compose larger shapes

9. Engage in geometric play
10. Persist in geometric play
11. Problem solve during geometric play
12. When prompted, communicate thinking while engaged in geometric play
13. Talk and listen to peers during geometric play

Core Activities and Corresponding Instructional Methods:

The teacher will:

1. Explicitly use the names of geometric shapes
2. Take children on a shape walk looking for geometric shapes in the environment
3. Provide books about geometric shapes
4. Provide shape templates, puzzles, attribute blocks, parquetry and pattern blocks in learning centers.
5. Model naming shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (solid)
6. Provide experiences for children to compare attributes of various geometrical shapes
7. Provide shape templates, puzzles, attribute blocks, parquetry and pattern blocks in learning centers
8. Provide opportunities to make shapes with play dough, geoboards, Popsicle sticks and pattern blocks
9. Notice children engaged in geometric play and describe what they are doing
10. Foster geometric awareness (e.g. encourage children to sketch their block creation before taking it down)
11. Ask open-ended questions to encourage children to talk about their thinking (e.g. “I wonder if we could make a square out of our pile of triangles?”)
12. Listen carefully to children’s responses, and restate their responses using clear, age-appropriate, mathematical language
13. Listen carefully to children’s responses in order to identify and clarify misconceptions
14. Model reasoning language
15. Provide many opportunities for children to talk and listen to their peers
16. Model reasoning by thinking-out-loud
17. Explicitly call attention to a child’s think-aloud to engage peers in the process

Assessments:

Diagnostic: Teacher Observation

Formative: In-class observation; teacher observation and discussion

Summative: Checklists and portfolios

Extensions:

Math Computer and i-pad Games

Correctives:

Direct one-to-one activities

Materials and Resources:

Shapes
Tangrams
Puzzles
File folder games
Math learning centers
Attribute blocks
Pattern blocks
Geoboards
Manipulatives
Play-doh
Modeling clay
Magnetic blocks/builders
Books
"I Have, Who Has" Shapes Game
Pattern Block Mats

Videos:

Name the Shape Game -Jack Hartmann
Learn Shapes and Colors with Pete the Kitty
Name that shape- 3D
The Shapes Song- ABC mouse
Shape song for kids

Appendix

Pennsylvania Early Childhood Math Standards
Standard Area - 2.1: Numbers, Number Systems and Number Relationships
Grade Level - 2.1.PK: GRADE Pre-Kindergarten
Standard

2.1.PK. A: Demonstrate the relationship between numbers and quantities, including rote counting, one-to-one correspondence up to 10 objects, and comparing values of whole numbers up to 10.
2.1.PK. B: Represent equivalent forms of the same number through the use of pictures and concrete objects up to 10.
2.1.PK.C: Use concrete objects, drawings, diagrams or models to combine, separate and name groups of objects.
2.1.PK. D: Intentionally Blank
2.1.PK. E: Intentionally Blank
2.1.PK. F: Solve oral word problems using concrete objects, with teacher assistance.

Standard Area - 2.2: Computation and Estimation
Grade Level - 2.2.PK: GRADE Pre-Kindergarten
Standard

2.2.PK. A: Intentionally Blank
2.2.PK. B: Represent and explain the results of adding and subtracting sets of objects up to and including six, using math vocabulary
2.2.PK.C: Intentionally Blank
2.2.PK. D: Estimate how many objects are in a set/group up to and beyond ten objects and conclude the reasonableness of those estimates.

Standard Area - 2.3: Measurement and Estimation
Grade Level - 2.3.PK: GRADE Pre-Kindergarten
Standard

2.3.PK. A: Identify characteristics that are measurable.
2.3.PK. B: Use concrete objects as non-standard units to estimate and measure, with adult awareness.
2.3.PK.C: Order up to three events based on time.
2.3.PK. D: Intentionally Blank
2.3.PK. E: Intentionally Blank
2.3.PK. F: Compare concrete objects to estimate and verify measurements of length.

Standard Area - 2.4: Mathematical Reasoning and Connections

Grade Level - 2.4.PK: GRADE Pre-Kindergarten

Standard

2.4.PK. A: Describe the process (es) (e.g., think aloud) related to problem solving situations.

2.4.PK. B: Intentionally Blank

Standard Area - 2.5: Mathematical Problem Solving and Communication

Grade Level - 2.5.PK: GRADE Pre-Kindergarten

Standard

2.5.PK. A: Solve a problem and discuss how it was solved in grade appropriate contexts.

2.5.PK. B: Use appropriate mathematical vocabulary when explaining how to solve a problem.

Standard Area - 2.6: Statistics and Data Analysis

Grade Level - 2.6.PK: GRADE Pre-Kindergarten

Standard

2.6.PK. A: Use environmental objects for data collection purposes

2.6.PK. B: Organize and display objects by one attribute.

2.6.PK.C: Answer questions based on data shown on graphs or charts.

2.6.PK. D: Answer comparative questions based on representations of data

2.6.PK. E: Draw conclusions about information shown on a graph or chart**.**

Standard Area - 2.7: Probability and Predictions

Grade Level - 2.7.PK: GRADE Pre-Kindergarten

Standard

2.7.PK. A- C: Intentionally Blank

2.7.PK. D: List or graph the possible results of an experiment, with adult assistance.

2.7.PK. E: Answer questions about an observed event.

Standard Area - 2.8: Algebra and Functions

Grade Level - 2.8.PK: GRADE Pre-Kindergarten

Standard

2.8.PK. A: Use concrete objects to demonstrate understanding of equality.

2.8.PK. B: Recreate and explain simple story problems using manipulatives, with adult assistance.

2.8.PK.C: Recognize and replicate number and geometric patterns.

2.8.PK. D: Intentionally Blank

2.8.PK. E: Use concrete objects to represent mathematical situations.

2.8.PK. F: Describe data from classroom graphs and charts.

Standard Area - 2.9: Geometry

Grade Level - 2.9.PK: GRADE Pre-Kindergarten

PA Core Standards - CC.2: PA Core: Mathematics
Standard Area - CC.2.1: Numbers and Operations
Grade Level - CC.2.1. PREK: GRADE Pre-Kindergarten
Standard

CC.2.1. PREK.A.1: Know number names and the count sequence.
CC.2.1. PREK.A.2: Count to tell the number of objects.
CC.2.1. PREK.A.3: Compare numbers.
CC.2.1. PREK.B.1- F7: Intentionally Blank

Standard Area - CC.2.2: Algebraic Concepts
Grade Level - CC.2.2. PREK: GRADE Pre-Kindergarten
Standard

CC.2.2. PREK.A.1: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
CC.2.2. PREK.A.2-D10: Intentionally Blank

Standard Area - CC.2.3: Geometry
Grade Level - CC.2.3. PREK: GRADE Pre-Kindergarten
Standard

CC.2.3. PREK.A.1: Identify and describe shapes.
CC.2.3. PREK.A.2: Analyze, compare, create, and compose shapes.
CC.2.3. PREK.A.3-A14: Intentionally Blank

Standard Area - CC.2.4: Measurement, Data and Probability
Grade Level - CC.2.4. PREK: GRADE Pre-Kindergarten
Standard

CC.2.4. PREK.A.1: Describe and compare measurable attributes of length and weight of everyday objects.
CC.2.4. PREK.A.2-A.3: Intentionally Blank
CC.2.4. PREK.A.4: Classify objects and count the number of objects in each category.
CC.2.4. PREK.A.5-B.7: Intentionally Blank

Checklist to Complete and Submit:

(Scan and email)

_____ Copy of the curriculum using the template entitled "Planned Instruction," available on the district website.

_____ The primary textbook form(s).

_____ The appropriate payment form, in compliance with the maximum curriculum writing hours noted on the first page of this document.

Each principal and/or department chair has a schedule of First and Second Readers/Reviewers. Each Reader/Reviewer must sign & date below.

First Reader/Reviewer Printed Name_____

First Reader/Reviewer Signature_____

Date_____

Second Reader/Reviewer Printed Name_____

Second Reader/Reviewer Signature _____

Date_____

Please Go to Human Resources page on the Delaware Valley School District website for updated Payment form to be submitted.

https://pa01001022.schoolwires.net/site/handlers/filedownload.ashx?moduleinstanceid=7055&dataid=16708&FileName=AUTHORIZATION%20FOR%20PAYMENT%20-%20SECURED.pdf