2017-18 Pre-K/K Math Resource Guide

June 8, 2017

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Purpose of Today's Webinar

To review the **2017-18 Pre-K/K Math Resource Guide**, which includes the following:

- **Mathematics Portfolio Planning Guide**: This is an optional tool that teachers can use to plan for the collection of student work artifacts for math.

- **Mathematics Scoring Guide:** This is a standards-based tool that identifies the criteria and descriptors of each performance level and will be used to score student work artifacts for math.

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Student Growth Portfolio Model Overview

Purpose of Portfolio

- To provide pre-K and kindergarten teachers the opportunity to demonstrate the best growth in students of various proficiency levels through purposeful sampling

- To ensure that teachers are honored for implementing the revised TN standards presented in a way that promotes higher reading comprehension and math proficiency

Pre-K Portfolio Components

Total collections to submit: 4

ELA

literature/narrative text

informational/explanatory text

Math

counting & cardinality

geometry **or** measurement & data

*__ELA will combine standards__
  __from across the foundational, reading and__
  __writing domains__.

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Kindergarten Portfolio Components

Total collections to submit: 4

ELA

literature/narrative text

informational/explanatory text

Math

counting & cardinality

operations & algebraic thinking

***ELA will combine standards
  from across the foundational, reading and
  writing domains**.

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Why student growth portfolio model?

Teacher Developed

Professional Learning and Growth

Student Centered

Student Growth Portfolio Model

Flexible Assessment

Peer Reviewed
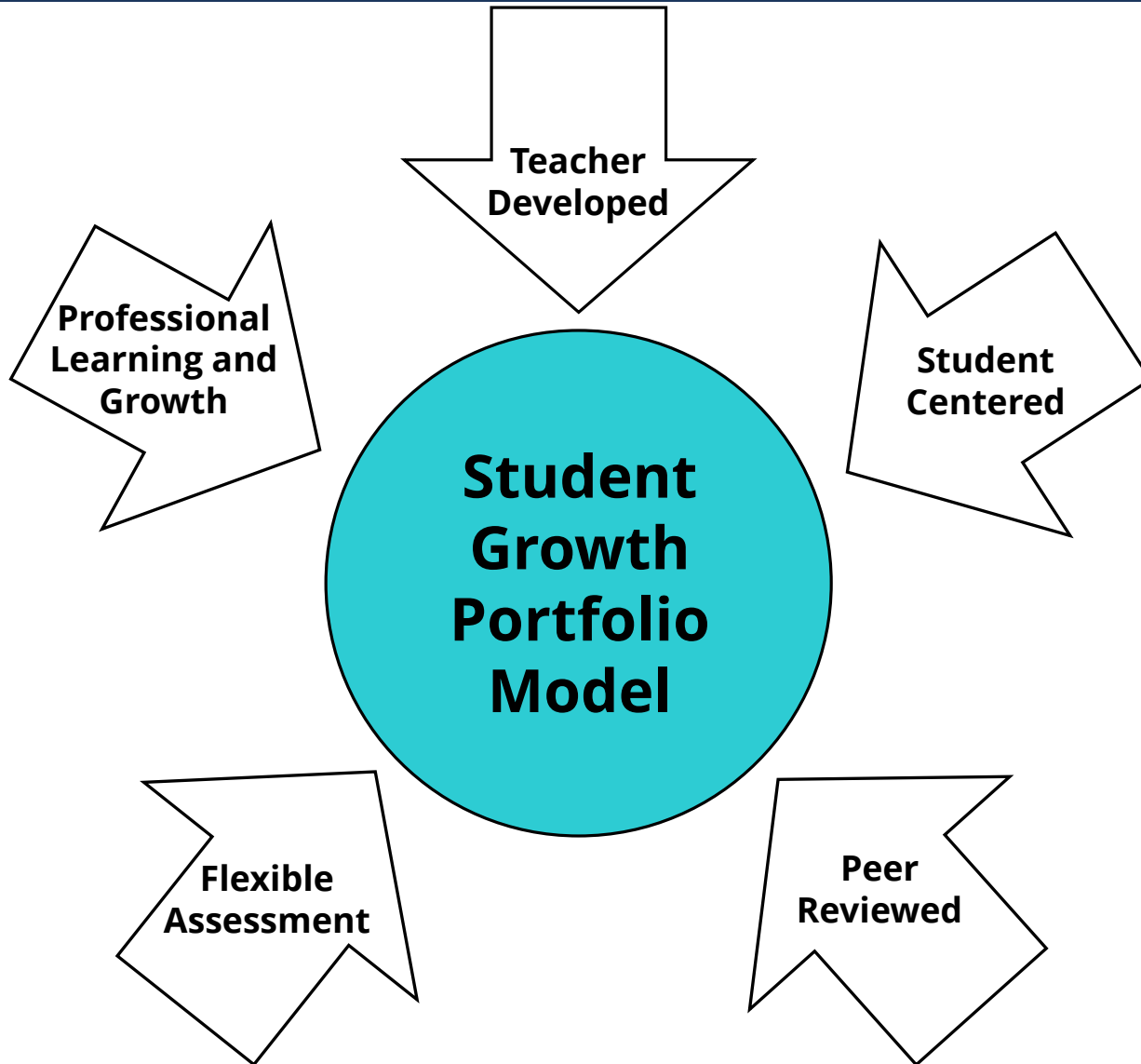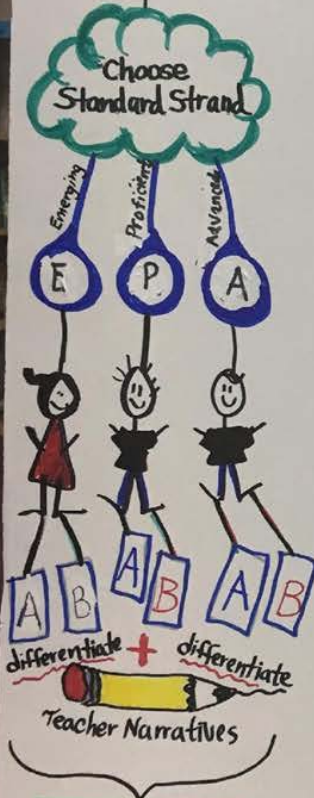
Student Work at the Center

- Drives teacher-generated assessment (formative)
- Drives differentiation/small group instruction
- Builds reflection in teachers **and** students
- Fosters collaboration in PLCs/collaborative teacher groups
- Connects to students making their own goals and assessing their growth along the way
- Fosters student talk about student work
- Increases effective teacher planning
- Deepens content knowledge about deconstructing standards
- Shows authentic strength and areas of need in individual students

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Collection Points for Point A and Point B

- As part of a teacher's normal cycle of planning, instruction, and reflection, a variety of targeted learning objectives should be outlined for use throughout the school year.

- Teachers collect the student growth evidence from the two points in time that are the **most practical** for the specific standards-based learning taking place.

- Teachers are encouraged to be thoughtful in determining what evidence provides the clearest picture of their impact on student learning for multiple levels of students.

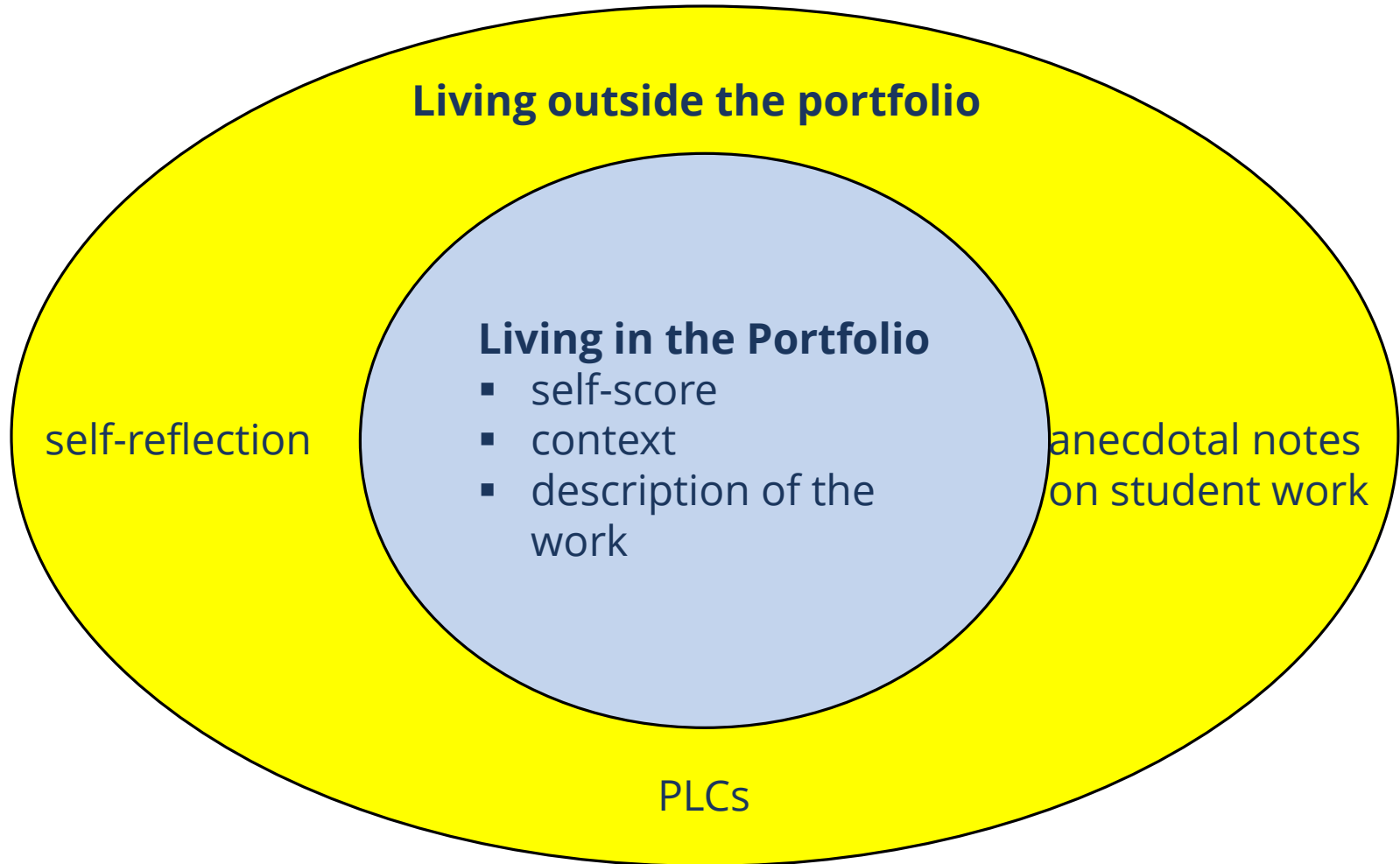**TN** Department of **Education**

Point A and Point B Samples

Possible evidence:

- Video segments that demonstrate student actions or talk
- Photographs of student work
- Audio of student talk

Where should teachers keep student work artifacts as they are being collected?

- Student work artifacts can be stored using any district-approved resource (e.g., free, cloud-based storage service, external hard drive, classroom files or folders, etc.).

- Student work artifacts can be stored in the online platform after October 1.

Narrative

Living outside the portfolio

Living in the Portfolio
- self-score
- context
- description of the work

self-reflection

anecdotal notes on student work

PLCs

Pre-K/K Portfolio

- Principles of Scoring
  - Seven-level rubric to capture growth beyond levels four and five
  - Scored by peers
  - Growth levels and teacher effectiveness ratings are calculated based on student scores

- Uses Educopia System
  - Teachers will have the flexibility to upload multiple files for any given assessment
  - Teachers tag evidence on the actual student work and generate scores based on evidence

2017-18 Teacher Effectiveness Indicators

2017-18 Teacher Effectiveness Indicator	
Level 5 Significantly Above Expectations	Students demonstrated, on average, **three levels of student growth,** OR **two levels of student growth plus evidence of student critical thinking.***
Level 4 Above Expectations	Students demonstrated, on average, **approximately two levels of student growth,** OR **one level plus evidence of student critical thinking.***
Level 3 At Expectations	Students demonstrated, on average, **one level of student growth.**
Level 2 Below Expectations	Students demonstrated, on average, **less than one level of growth.**
Level 1 Significantly Below Expectations	Students demonstrated, on average, **little to no growth.**

*Student critical thinking may include metacognitive processes; knowledge and skills; risk taking, imagination and voice; and a range of abilities with technique, problem solving and ideation.

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Where do portfolios fit within evaluation?

- Portfolios generate an individual growth measure (individual TVAAS score)

- Part of the quantitative component of evaluation
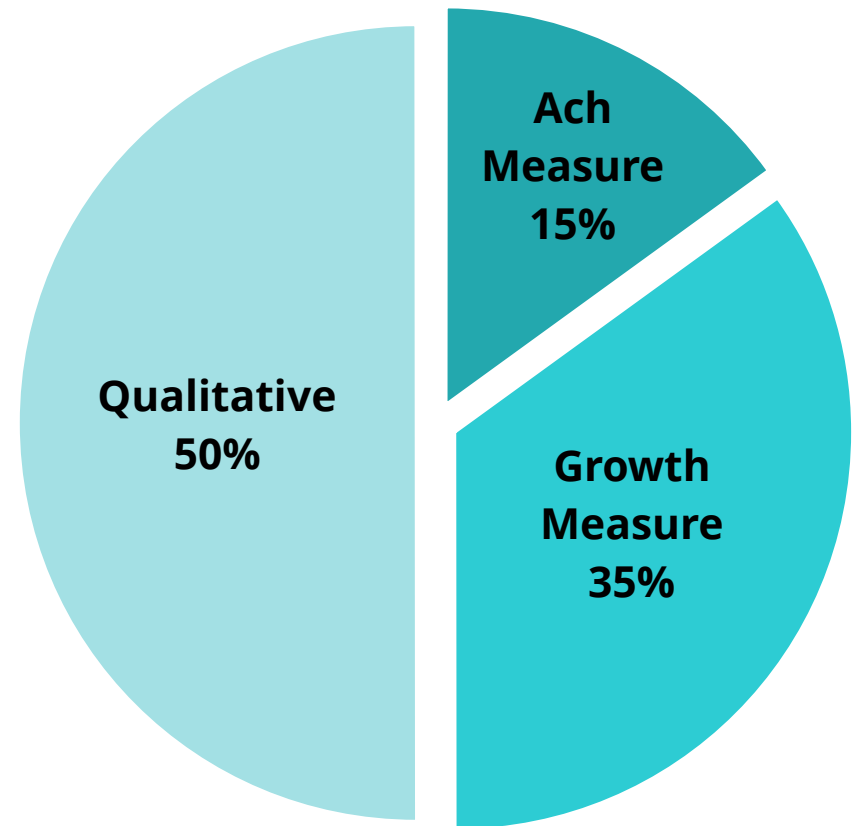
Qualitative
50%

Ach
Measure
15%

Growth
Measure
35%

Pause for Q&A

We will now pause and answer any questions you have so far. Please submit your questions via the chatbox to Amanda Armstrong.

The Pre-K & Kindergarten Mathematics Scoring Guide

Math Instructional Shifts and the Portfolio

- Most of the structure of the previous state standards has been maintained because it is logical, informative, and easy to follow.

- Most Tennessee teachers are already familiar with the structure.

Mathematical Standards Language

Structure of the Standards

- Content Standards
- Clusters
- Domains
- Conceptual Categories

*Additional information found on page 5 of the **Tennessee Math Standards.**

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Mathematics Scoring Guide

Mathematics Scoring Guide: This is a standards-based tool that identifies the **criteria** and **descriptors** of each **performance level** and will be used to score student work artifacts for math.

Pre-K/K Math Portfolio Resource Guide

2017–18 Pre-K/K Math Portfolio Resource Guide

The 2017-18 Pre-K/K Math Portfolio Resource Guide contains the **Mathematics Portfolio Planning Guides**, which are optional tools that teachers can use to consider the time of year they might expect to collect student work artifacts, the type of artifact that would best allow students to demonstrate performance, and the time span that might exist between collecting student work artifacts. The **Pre-K and Kindergarten Math Scoring Guides are also included**; these are standards-based tools that identify the criteria and descriptors for each standard present in the portfolio. You can link to these resources within this document here:

- Math Portfolio Planning Guide – Pre-K
- Math Portfolio Planning Guide – Kindergarten
- Pre-K Mathematics Scoring Guide
- Kindergarten Mathematics Scoring Guide

General Information

The pre-K/K student growth portfolio model allows teachers to demonstrate students' progress towards mastery of English language arts (ELA) and math standards. Teachers collect student work artifacts at two points in time (Point A and Point B) and select artifacts from differentiated groups of students to submit for review via an online platform by April 15, 2018. Then, certified peer reviewers score student work based on a comprehensive scoring guide. The complete comprehensive ELA scoring guide for pre-K and kindergarten will be released on July 14, along with the 2017–18 General Portfolio Administrative Guidebook. The General Portfolio Administrative Guidebook will provide additional information to support the use of comprehensive scoring guides. It is also recommended that teachers continue to deepen their content knowledge around standards by referring to the Tennessee Mathematics Standards.

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Steps of the Portfolio Process

Steps of the Portfolio Process

- Create a long term instructional plan (pre-K, kindergarten) for the school year, considering when standards will be introduced, pre-assessed, and monitored.

- Break apart (deconstruct) standards so that planning can be explicit and clear for students and develop or identify aligned performance tasks that will be used to measure performance.

- Utilize the scoring guide (pre-K, kindergarten) to develop task-specific expectations.

- Collect Point A work at the most appropriate time within the instructional plan.

- Using the scoring guide, sort Point A work into differentiated groups of students (emerging, proficient, advanced) based on the scoring guide and task-specific expectations. If a classroom teacher's student work all falls into the same category of a performance level on the scoring guide, the teacher can create additional student work criteria to further differentiate the identified groups of students as emerging, proficient, and advanced.

- Differentiate instruction for specific needs and strengths that were identified within the Point A student work artifacts.

- Collect Point B work at the most appropriate time within the instructional plan.

- Analyze growth between Point A and Point B student work artifacts. Determine which samples within each differentiated group demonstrate the most growth; this guides the process of purposeful sampling.

- Determine the levels of growth between Point A and Point B on the scoring guide. The levels of student growth determine the teacher effectiveness score, as determined by the teacher effectiveness indicator. More guidance around the teacher effectiveness indicator will be provided in the General Portfolio Administrative Guidebook.

- Submit the purposefully sampled student work artifacts into portfolio collections using the online platform prior to the April 15 due date.

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Math Portfolio Planning Guides

Math Portfolio Planning Guide
Pre-Kindergarten

Domain:	Math Evidence Collection 1 Counting and Cardinality	Math Evidence Collection 2 Geometry OR Measurement and Data
Standard		
Point A Date		
Point A Task		
Point B Date		
Point B Task		
Emerging (student names)		
Proficient (student names)		
Advanced (student names)		

Math Portfolio Planning Guide
Kindergarten

Domain:	Math Evidence Collection 1 Counting and Cardinality	Math Evidence Collection 2 Operations and Algebraic Thinking
Standard		
Point A Date		
Point A Task		
Point B Date		
Point B Task		
Emerging (student names)		
Proficient (student names)		
Advanced (student names)		

Pause for Q&A

We will now pause and answer any questions you have so far. Please submit your questions via the chatbox to Amanda Armstrong.

**Pre-Kindergarten
Scoring Guide**

Pre-K Counting and Cardinality Standards: Know number names and the count sequence

- **PK.CC.2**
  - Verbally count forward in sequence from 1 – 30.

- **PK.CC.3**
  - Understand the relationships between numerals, names of numerals and quantities up to 10 (includes subitizing – the ability to look at a quantity and say the quantity [1-4] quickly, just by looking.

*Note: Each standard stands alone and is not integrated in the mathematics scoring guide

Pre-K Counting and Cardinality Scoring Guide: Know number names and the count sequence

Pre-K Mathematics Scoring Guide

Pre-Kindergarten Mathematics

Counting and Cardinality (CC)

Cluster: Know number names and the count sequence.

Standard	1	2	3	4	5	6	7
PK.CC.2	Does not verbally count forward in a sequence from 1-10.	Verbally counts forward in a sequence from 1-10.	Verbally counts forward in sequence from 1-30.	Verbally counts forward in sequence from 1-50.	Verbally counts forward in sequence from 1-100.	Counts forward (3 numbers) beginning from a given number within the known sequence between 11 and 20 (instead of having to begin at 1).	Counts forward (3 numbers) beginning from a given number within the known sequence between 21 and 50 (instead of having to begin at 1).
PK.CC.3	Unable to demonstrate the relationships between numerals, names of numbers and quantities up to 5 (includes subitizing: the ability to look at a quantity and say the quantity [1-4] quickly, just by looking).	Demonstrates understanding of the relationships between numerals, names of numbers and quantities up to 5 (includes subitizing: the ability to look at a quantity and say the quantity [1-4] quickly, just by looking).	Demonstrates understanding of the relationships between numerals, names of numbers and quantities up to 10 (includes subitizing: the ability to look at a quantity and say the quantity [1-4] quickly, just by looking).	Demonstrates understanding of the relationships between numerals, names of numbers and quantities up to 15.	Demonstrates understanding of the relationships between numerals, names of numbers and quantities up to 20.	Writes numbers from 0 to 20 and represent a number of objects with a written numeral 0-20.	Writes numbers from 0 to 50 and represent a number of objects with a written numeral 0 to 50.

Pre-K Counting and Cardinality Standards: Count to tell the number of objects

- PK.CC.4a
  - Use one-to-one correspondence to accurately count up to 10 objects in a scattered configuration.

- PK.CC.5
  - With guidance and support, count to answer "how many?" questions about as many as 10 things arranged in a line or as many as 5 things in a scattered configuration; given a number from 1-10, count out that many objects.

*Note: Each standard stands alone and is not integrated in the mathematics scoring guide

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Pre-K Counting and Cardinality Scoring Guide: Count to tell the number of objects

Pre-Kindergarten Mathematics

Counting and Cardinality (CC)

Cluster: Count to tell the number of objects.

Standard	1	2	3	4	5	6	7
PK.CC.4a	Unable to use one-to-one correspondence to accurately count up to 5 objects in a line or scattered configuration.	Uses one-to-one correspondence to accurately count up to 10 objects in a line OR up to 5 objects in a scattered configuration.	Uses one-to-one correspondence to accurately count up to 10 objects in a scattered configuration.	Uses one-to-one correspondence to accurately count up to 10 objects in a scattered configuration AND is able to tell that the last number counted tells how many there are.	Uses one-to-one correspondence to accurately count up to 10 objects in a scattered configuration, is able to tell that the last number counted tells how many there are, AND demonstrates understanding that the number of objects is the same regardless of their arrangement or the order in which they are counted.	When counting objects, says the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object (up to 20)	When counting objects, says the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object (up to 20), is able to tell that the last number counted tells how many there are, AND demonstrates understanding that the number of objects is the same regardless of their arrangement or the order in which they are counted AND is able to tell that each successive number name refers to a quantity that is one greater.
PK.CC.5	Unable to count out objects when given a number.	With guidance and support, counts to answer "how many" questions about as many as 10 things arranged in a line or as many as 5 things in a scattered configuration; given a number from 1-5, count out that many objects.	With guidance and support counts to answer "how many?" questions about as many as 10 things arranged in a line or as many as 5 things in a scattered configuration; given a number from 1-10, count out that many objects	With guidance and support, counts to answer "how many?" questions about as many as 20 things arranged in a line or as many as 10 things in a scattered configuration, given a number from 1-10, count out that many objects	Independently counts to answer "how many?" questions about as many as 10 things arranged in a line or as many as 5 things in a scattered configuration, given a number from 1-10, count out that many	Independently counts to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, a circle, or as many as 10 things in a scattered configuration, AND when given a number from 1-20, counts out that many objects.	When given a number from 1-20, counts out that many objects and answer "how many" questions when told to include or remove 1 to 5 objects from the group.

Pre-K Counting and Cardinality Standards: Compares numbers

- PK.CC.6
  - Use comparative language, such as more/less than or equal to, to compare and describe collections of objects by matching.

Pre-K Counting and Cardinality Scoring Guide; Compares numbers

Pre-Kindergarten Mathematics							
Counting and Cardinality (CC)							
Cluster: Compare numbers.							
Standard	1	2	3	4	5	6	7
PK.CC.6	Unable to use quantity words to describe collections of objects.	Uses quantity words (e.g., a lot, some, many, and few) to describe collections of objects.	Uses comparative language, such as more/less than or equal to, to compare and describes collections of objects by matching.	Tells that there are more (or fewer) when objects are added to (or taken away from) a collection of objects.	Identifies whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group by using matching and counting strategies.	Identifies whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, by using visual and/or mental strategy.	Identifies whether one number is greater than, less than, or the same as another number. Includes numbers up to ten.

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Pre-K Measurement and Data Standards

Describe and compare measurable attributes;
Classify objects and count the number of objects in each category

- PK.MD.1
  - Explores the concept of measurement to compare the attributes or two or more concrete objects and use words to define attributes of the objects (e.g., heavier/lighter, longer/shorter, covers more/ covers less, holds more/ holds less).

Classify objects and count the number of objects in each category

- PK.MD.3
  - Sorts, categorizes, and classifies objects by more than one attribute.

*Note: Each standard stands alone and is not integrated in the mathematics scoring guide

Pre-K Measurement and Data Scoring Guide

Describe and compare measurable attributes;
Classify objects and count the number of objects in each category

Measurement and Data (MD)

Cluster: Describe and compare measurable attributes.

Standard	1	2	3	4	5	6	7
PK.MD.1	Unable to recognize the attributes of length (how long, tall, short) and weight (how heavy or light), of everyday objects using appropriate vocabulary.	Recognizes the attributes of length (how long, tall, short) and weight (how heavy or light), of everyday objects using appropriate vocabulary.	Explores the concept of measurement to compare the attributes or two or more concrete objects and use words to define attributes of the objects (e.g., heavier/lighter, longer/shorter, covers more/ covers less, holds more/ holds less).	With guidance and support, compares everyday objects using the attributes of length (longer/shorter) and weight (heavier/lighter), using appropriate vocabulary.	With guidance and support, compares everyday objects using the attributes of length (longer/shorter), area (covers more/covers less), weight (heavier/lighter), and volume or capacity (holds more/holds less) using appropriate vocabulary.	Directly compares two objects with a measurable attribute in common, to see which object has "more of'/"less of' the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.	Orders three objects by length and compares the lengths of two objects indirectly by using a third object.

Measurement and Data (MD)

Cluster: Classify objects and count the number of objects ibn each category.

Standard	1	2	3	4	5	6	7
PK.MD.3	Unable to sort, categorize, and classify objects by more than one attribute.	Sorts, categorizes, and classifies objects by one attribute.	Sorts, categorizes, and classifies objects by more than one attribute.	Sorts, categorizes, and classifies objects by more than two attributes and explain the reasons for groups.	Classifies objects into given categories, counts number of objects in each category, and sorts the categories by count.	Classifies objects into given categories, counts number of objects in each category, and sorts the categories by count.	Sorts objects by 2 attributes (e.g. small and round, big and round, big and square) counts number of objects in each category, and sorts the categories by count.

Pre-K Geometry Standards: Identify and describe shares

- **PK.G.1**
  - Identifies relative positions of objects in space, and uses appropriate language (e.g., beside, inside, next to, close to, above, below, apart).

- **PK.G.2**
  - Identifies four basic shapes (e.g., square, circle, triangle, rectangle, and hexagon) in the classroom setting or real-world environment.

*Note: Each standard stands alone and is not integrated in the mathematics scoring guide

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Pre-K Geometry Scoring Guide: Identify and describe shares

Pre-Kindergarten Mathematics							
Geometry (G)							
Cluster: Identify and describe shares (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).							
Standard	1	2	3	4	5	6	7
PK.G.1	Unable to move self or objects in response to position words (e.g., in, on, under, up, down).	Moves self or objects in response to position words (e.g., in, on, under, up, down).	Identifies relative positions of objects in space, and uses appropriate language (e.g., beside, inside, next to, close to, above, below, apart).	Uses and responds appropriately to position words indicating location, direction, and distance.	Uses or makes picture maps to locate objects.	Identifies and describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	Compares shapes in the environment using defining attributes (e.g. number of sides, number of corners, straight sides versus round).
PK.G.2	Unable to identify basic shapes (e.g., square, circle, triangle, rectangle, hexagon) in the classroom setting or real-world environment.	Identifies fewer than four basic shapes (e.g., square, circle, triangle, rectangle, hexagon) in the classroom setting or real-world environment.	Identifies four basic shapes (e.g., square, circle, triangle, rectangle, and hexagon) in the classroom setting or real-world environment.	Identifies five basic shapes (e.g., square, circle, triangle, rectangle, hexagon) in the classroom setting or real-world environment.	Identifies all five basic shapes (e.g., square, circle, triangle, rectangle, hexagon), AND can identify one basic three-dimensional shape (cone, cylinder, cube, sphere) in the classroom setting or real-world environment.	Correctly names shapes (both 2 and 3-dimensional) regardless of their orientations or overall size.	Manipulates shapes to create a composite shape or picture.

Pre-K Geometry Standards:
Analyze, compare, create, and compose shapes

- PK.G.4
  - With guidance and support, compares and contrasts the attributes of three-dimensional shapes of different sizes and orientations, identifying shapes that are ___and shapes that are not___.

- PK.G.6
  - With guidance and support, creates and names new shapes formed when putting two shapes together (e.g., two right triangles of the same size put together would make a rectangle or square).

***Note: Each standard stands alone and is not integrated in the mathematics scoring guide**

Pre-K Geometry Scoring Guide: Analyze, compare, create, and compose shapes

Pre-Kindergarten Mathematics							
Geometry (G)							
Cluster: Analyze, compare, create, and compose shapes.							
Standard	**1**	**2**	**3**	**4**	**5**	**6**	**7**
PK.G.4	Unable to compare and contrast the attributes of two-and three-dimensional shapes of different sizes and orientations, identifying shapes that are ____and shapes that are not____, even with guidance and support.	With guidance and support, compares and contrasts the attributes of two-dimensional shapes of different sizes and orientations, identifying shapes that are ____and shapes that are not____.	With guidance and support, compares and contrasts the attributes of three-dimensional shapes of different sizes and orientations, identifying shapes that are ____and shapes that are not____.	With guidance and support, compares and contrasts the attributes of two- and three-dimensional shapes of different sizes and orientations, identifying shapes that are ____and shapes that are not____.	With guidance and support, compares and contrasts the attributes of two- and three-dimensional shapes of different sizes and orientations, identifying shapes that are ____and shapes that are not____, AND explains in their own words how they reached that conclusion.	Describes similarities and differences between two- and three-dimensional shapes, in different sizes and orientations.	Analyzes and compares two-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, and other attributes (e.g. having sides of equal length).
PK.G.6	Unable to create and name new shapes formed when putting two shapes together, even with guidance and support.	With guidance and support, creates new shapes by putting two shapes together.	With guidance and support, creates and names new shapes formed when putting two shapes together (e.g., two right triangles of the same size put together would make a rectangle or square).	With guidance and support, creates and names new shapes formed when putting two shapes together, AND correctly describes the attributes of the new shape using appropriate vocabulary.	With guidance and support, creates and names new shapes formed when putting two shapes together, correctly describes the attributes of the new shape using appropriate vocabulary, AND compares and contrasts the old shapes with the new shape.	Independently composes larger shapes using simple shapes and identify smaller shapes within a larger shape.	Analyzes how to put simple shapes together to compose a new or larger shape.

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Pause for Q&A

We will now pause and answer any questions you have so far. Please submit your questions via the chatbox to Amanda Armstrong.

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Kindergarten Scoring Guide

Counting and Cardinality Standards; Know number names and counting sequence

- **K.CC.A.1**
  - Count to 100 by ones, fives, and tens. Counts backward from 10.

- **K.CC.A.2**
  - Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

- **K.CC.A.3**
  - Write numbers from 0 to 20. Represents a number of objects with a written numeral 0-20.

*Note: Each standard stands alone and is not integrated in the mathematics scoring guide.

Counting and Cardinality Scoring Guide: Know number names and counting sequence

Kindergarten Mathematics							
Counting and Cardinality (CC)							
Cluster: A. Know number names and the counting sequence.							
Standard	**1**	**2**	**3**	**4**	**5**	**6**	**7**
K.CC.A.1	Unable to count to 50 by ones, fives, and tens. Unable to count backward from 5.	Counts to 50 by ones AND fives, OR tens. Counts backward from 5.	Counts to 100 by ones, fives, and tens. Counts backward from 10.	Counts to 125 by ones, fives, and tens. Counts backward from 15.	Counts to 100 or more by ones, fives, and tens. Counts backward from 20.	Counts to 100 or more by ones, fives, and tens AND counts up to 40 by twos. Counts backward from 30.	Counts up to 80 by twos (starting with a given number). Counts backward from 40 (starting with a given number).
K.CC.A.2	Unable to count forward from any given number.	Counts forward beginning from a given number within the known sequence between 0 and 10.	Counts forward beginning from a given number within the known sequence (instead of having to begin at 1).	Counts forward beginning from a given number within the known sequence between 21 and 50.	Counts forward beginning from a given number within the known sequence between 51 and 75.	Counts forward beginning from a given number within the known sequence between 75 and 100.	Counts forward beginning from a given number within the known sequence between 100 and 120.
K.CC.A.3	Unable to write numbers from 0 to 10 or represent a number of objects with a written numeral 0-10.	Writes numbers from 0 to 10 and represent a number of objects with a written numeral 0-10.	Writes numbers from 0 to 20. Represents a number of objects with a written numeral 0-20.	Writes numbers from 0 to 50. Represents a number of objects with a written numeral 0-30. Repeats with at least four different numbers of objects (e.g., 18, 23, 27, and 30).	Writes numbers from 0 to 75. Represents a number of objects with a written numeral 31-40. Repeats with at least four different numbers of objects (e.g., show a group of 32, 35, 37, and 40).	Writes numbers from 0 to 100. Represents a number of objects with a written numeral 41-50. Repeats with at least four different numbers of objects (e.g., show a group of 42, 45, 47, and 50).	Writes numbers from 0 to 120. Represents a number of objects with a written numeral 51-75. Repeats with at least four different numbers of objects (e.g., show a group of 52, 55, 67, and 75).

Counting and Cardinality Standards: Count to tell the number of objects

- KCC.4a, 4b, 4c:
  - When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object (up to 20); recognize that the last number name said tells the numbers of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted (up to 20); and recognize that each successive number name refers to a quantity that is one greater (up to 20).

*This is one standard.

Counting and Cardinality Scoring Guide: Count to tell the number of objects

Kindergarten Mathematics							
Counting and Cardinality (CC)							
Cluster: B. Count to tell the number of objects.							
Standard	**1**	**2**	**3**	**4**	**5**	**6**	**7**
K.CC.B.4a, 4b, and 4c	Unable to count objects and say the number names in the standard order with one to one correspondence; and unable to recognize that the last number name said tells the number of objects counted; unable to understand the number of objects is the same regardless of their arrangement or the order in which they were counted; and unable to recognize that each successive number name refers to a quantity that is greater.	When counting objects, says the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object (up to 10); recognizes that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted (up to 10); and recognizes that each successive number name refers to a quantity that is one greater (up to 10).	When counting objects, says the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object (up to 20); recognizes that the last number name said tells the numbers of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted (up to 20); and recognizes that each successive number name refers to a quantity that is one greater (up to 20).	When counting objects, says the number names in the standard order, pairing each object with one and and only one number name and each number name with one and and only one object (up to 50); recognizes that the last number name said tells the number of object counted. The number of objects is the same regardless of their arrangement or the order in which they were counted (up to 50); and recognizes that each successive number name refers to a quantity that is one greater (up to 50).	When counting objects, says the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object (up to 75); recognizes that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted (up to 75); and recognizes that each successive number name refers to a quantity that is one greater (up to 75).	When counting objects, says the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object (up to 100); recognizes that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted (up to 100); and recognizes that each successive number name refers to a quantity that is one greater (up to 100).	When counting objects, says the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object (up to 120); recognizes that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted (up to 120); and recognizes that each successive number name refers to a quantity that is one greater (up to 120).

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Counting and Cardinality Standards: Count to tell the number of objects

- K.CC.B.5
  - Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, a circle, or as many as 10 things in a scattered configuration. Given a number from 1-20, count out that many objects.

Counting and Cardinality Scoring Guide: Count to tell the number of objects

Counting and Cardinality (CC)

Cluster: B. Count to tell the number of objects.

Standard	1	2	3	4	5	6	7
K.CC.B.5	Unable to count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration. Given a number from 1-10, unable to count out that many objects.	Counts to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration. Given a number from 1-10, counts out that many objects.	Counts to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, a circle, or as many as 10 things in a scattered configuration. Given a number from 1-20, counts out that many objects.	Counts to answer "how many?" questions about as many as 20 things arranged **in two** of the following ways: a line, a rectangular array, a circle, or as many as 10 things in a scattered configuration. Given a number from 1-20, counts out that many objects.	Counts to answer "how many?" questions about as many as 20 things arranged **in two** of the following ways: a line, a rectangular array, a circle, or as many as 10 things in a scattered configuration (examples should include adding to **and** removing objects from the group). Given a number from 1-30, counts out that many objects.	Counts to answer "how many?" questions about as many as 30 things arranged **in two** of the following ways: a line, a rectangular array, a circle, or as many as 15 things in a scattered configuration (examples should include adding to **and** removing objects from the group). Given a number from 1-40, counts out that many objects.	Counts to answer "how many?" questions about as many as 30 things arranged **in two** of the following ways: a line, a rectangular array, a circle, or as many as 20 things in a scattered configuration (examples should include adding to **and** removing objects from the group.) Given a number from 1-50, counts out that many objects.

Counting and Cardinality Standards: Compare numbers

- K.CC.C6
  - Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (includes groups with up to 10 objects).

- KCC.C7
  - Compare two given numbers up to 10, when written as numerals, using the terms *greater than*, *less than*, or *equal to.*

*Note: Each standard stands alone and is not integrated in the mathematics scoring guide.

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Kindergarten Counting and Cardinality Scoring Guide, Compare numbers

Kindergarten Mathematics							
Counting and Cardinality (CC)							
Cluster: C. Compare numbers.							
Standard	1	2	3	4	5	6	7
K.CC.C.6	Unable to match the number of objects in one group to the same number of objects in another group.	Matches the number of objects in one group to the same number of objects in another group.	Identifies whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (includes groups with up to 10 objects).	Identifies whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (includes groups with up to 20 objects).	Generates a number that is greater than, less than, or equal to another number verbally, with models, or as a written numeral. Includes numbers up to ten.	Generates a number that is greater than, less than, or the same as another number verbally, with models, AND as a written numeral. Includes two-digit numbers up to 20.	Generates a number that is greater than, less than, or the same as another number verbally, with models, AND as a written numeral. Includes two-digit numbers up to 50.
K.CC.C.7	Unable to compare two given numbers up to 5, when written as numerals, using the terms *greater than*, *less than*, or *equal to*.	Compares two given numbers up to 5, when written as numerals, using the terms *greater than, less than*, or *equal to*.	Compares two given numbers up to 10, when written as numerals, using the terms *greater than, less than*, or *equal to*.	Compares two given numbers up to 20, when written as numerals, using the terms *greater than, less than*, or *equal to*.	Compares two given numbers up to 30, when written as numerals, using the terms *greater than, less than*, or *equal to* AND using signals >, <, and =.	Compares two given numbers up to 40, when written as numerals, using the terms *greater than, less than*, or *equal to* AND using signals >, <, and =.	Compares two given numbers up to 50, when written as numerals, using the terms *greater than, less than*, or *equal to* AND using signals >, <, and =.

Operations and Algebraic Thinking Standards

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

- K.OA.O.1
  - Represent addition and subtraction (within 10) with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.

- K.OA.O.2
  - Add and subtract within 10 to solve contextual problems using objects or drawings to represent the problem.

*Note: Each standard stands alone and is not integrated in the mathematics scoring guide.

Operations and Algebraic Thinking Scoring Guide

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Operations and Algebraic Thinking (OA)

Cluster: A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Standard	1	2	3	4	5	6	7
K.OA.A.1	Unable to represent addition within 10, with the following strategies: objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.	Represents addition within 10, with the following strategies: objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.	Represents addition and subtraction (within 10) with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.	Represents addition and subtraction within 15, with the following strategies: objects, mental images, drawings, verbal explanations, expressions, or equations.	Represents addition and subtraction within 20, with drawings, expressions, or equations.	Adds and subtracts within 20 using strategies such as counting on, counting back, making 10, using fact families and related know facts.	Adds and subtracts within 20 using mental strategies.
K.OA.A.2	Unable to solve addition and subtraction contextual problems.	Solves addition and subtraction contextual problems using objects for problems up to 5.	Adds and subtracts within 10 to solve contextual problems using objects or drawings to represent the problem.	Solves addition and subtraction contextual problems using objects for problems up to 15.	Solves addition and subtraction contextual problems using objects for problems up to 20.	Solves addition and subtraction contextual problems within 20, with unknowns in all positions, involving situations of add to, take from, put together/take apart, and compare.	Solves addition and subtraction contextual problems within 20, with unknowns in all positions, involving situations of add to, take from, put together/take apart, and compare. Writes equations with a symbol for the unknown number to represent the problem.

Operations and Algebraic Thinking Standards

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

- K.OA.A.3
  - Decompose numbers less than or equal to 10 into addend pairs in more than one way (e.g., 5 = 2 + 3 and 5 = 4 + 1) by using objects or drawings, and records each decomposition using a drawing or writing an equation.

- K.OA.A.4
  - Find the number that makes 10, when added to any given number, from 1 to 9 using objects or drawings, and records the answer using a drawing or writing an equation.

- K.OA.A.5
  - Fluently add and subtract within 10 using mental strategies with 90-100% accuracy (within 3 seconds).

*Note: Each standard stands alone and is not integrated in the mathematics scoring guide.

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Operations and Algebraic Thinking Scoring Guide

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Kindergarten Mathematics							
Operations and Algebraic Thinking (OA)							
Cluster: A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.							
Standard	**1**	**2**	**3**	**4**	**5**	**6**	**7**
K.OA.A.3	Unable to decompose numbers less than or equal to 5 into pairs (parts) in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5=2+3 and 5=4+1).	Decomposes numbers less than or equal to 5 into pairs (parts) in more than one way, e.g., by using objects or drawings, and records each decomposition by a drawing or equation (e.g., 5=2+3 and 5=4+1).	Decomposes numbers less than or equal to 10 into addend pairs in more than one way (e.g., 5 = 2 + 3 and 5 = 4 + 1) by using objects or drawings, and records each decomposition using a drawing or writing an equation.	Decomposes numbers less than or equal to 15 into pairs (parts) in more than one way, e.g., by using objects or drawings, and records each decomposition by a drawing or equation (e.g., 5=2+3 and 5=4+1).	Decomposes numbers less than or equal to 20 into pairs (parts) in more than one way, e.g., by using objects or drawings, and records each decomposition by a drawing or equation (e.g., 5=2+3 and 5=4+1).	Determines the unknown whole number in an addition equation up to 20, with the unknown in any position.	Determines the unknown whole number in addition or subtraction equations up to 20, with the unknown in any position.
K.OA.A.4	For any number from 1 to 4, unable to find the number that makes 5 when added to the given number, e.g., by using objects or drawings, and records the answer with a drawing or equation.	For any number from 1 to 4, finds the number that makes 5 when added to the given number, e.g., by using objects or drawings, and records the answer with a drawing or equation.	Finds the number that makes 10, when added to any given number, from 1 to 9 using objects or drawings, and records the answer using a drawing or writing an equation.	For any number from 1 to 14, finds the number that makes 15 when added to the given number (e.g., by using objects or drawings), and records the answer with a drawing or equation.	For any number from 1 to 19, finds the number that makes 20 when added to the given number (e.g., by using objects or drawings), and records the answer with a drawing or equation.	Adds and subtracts within 10 using strategies such as counting on, counting back, and using fact families.	Adds and subtracts within 20 using strategies such as counting on, counting back, and using fact families.
K.OA.A.5	Unable to fluently add or subtract within 10.	Fluently adds or subtracts within 10 with quick recall with 90-100% accuracy.	Fluently adds and subtracts within 10 using mental strategies with 90-100% accuracy (within 3 seconds).	Fluently adds within 15 and subtracts within 10 using mental strategies with 90-100% accuracy (within 5 seconds).	Fluently adds and subtracts within 15 using mental strategies with 90-100% accuracy (within 5 seconds).	Fluently adds and subtracts within 20 using mental strategies with 90-100% accuracy (within 5 seconds).	Fluently adds and subtracts within 20 using mental strategies and know from memory all sums up to 10 with 90-100% accuracy (within 5 seconds).

Mathematics Resources

2017-18 Pre-K/K Math Resource Guide
- http://team-tn.org/wp-content/uploads/2015/07/2017-18-Math-Portfolio-Resource-Guide_Final.pdf

Math Revised Standards
- https://www.tn.gov/assets/entities/sbe/attachments/4-15-16_V_A_Math_Standards_Attachment.pdf

TN-ELDS
- http://tn.gov/education/article/early-learning-development-standards

Portfolio FAQ
- http://team-tn.org/wp-content/uploads/2015/07/PreK_and_K_Portfolio_Implementation_FAQ_FINAL.pdf

Pause for Q&A

We will now pause and answer any questions you have so far. Please submit your questions via the chatbox to Amanda Armstrong.

Portfolio Best Practices

Collaborative Practices to Support Portfolio Work

- Deconstructing standards to deepen content knowledge
- Informed short and long term planning
- Analyzing student work to inform differentiation
- Collaborative conversations
- Self-Reflection
- Student work at the center of instructional practices
- Student work conversations between teachers, principals, instructional coaches
- Developing teacher leaders

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Next Steps

Upcoming Resources

- **July 14**
  - *2017-18 Pre-K/K ELA Scoring Guide*: This is a standards-based tool that identifies the criteria and descriptors of each performance level and will be used to score student work artifacts for ELA.
  - **ELA Webinar:** This webinar will review all pre-K/K portfolio resources for ELA. Log-in information is attached and posted on the TEAM website.

- **July 170**
  - *2017-18 General Portfolio Administrative Guidebook*: This document will provide technical information about the portfolio process, guidelines, and expectations for portfolio submission in 2018.
  - **Virtual "Back to School" portfolio training:** This is a training module that districts may use during professional development with educators. It will focus on the best practices associated with the pre-K/K portfolios.

Contact Information

We will continue to keep you posted on each step we are taking to prepare for next year.

We know you will have questions, so please feel free to contact any of us at:

- Keely Potter, director of teacher effectiveness
  - Keely.Potter@tn.gov
- Darlene Estes DelRe, director of professional development
  - Darlene.DelRe@tn.gov
- Portfolio.Questions@tn.gov

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Final Questions?

Districts and schools in Tennessee will exemplify excellence and equity such that all students are equipped with the knowledge and skills to successfully embark on their chosen path in life.

Excellence | Optimism | Judgment | Courage | Teamwork