Roadmap to Collaboration:

Correlation of The Head Start Framework* to the Common Core State Standards** in Kindergarten

Mathematics

Collaborative partnership project supported by NHS and Learning
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The kindergarten portion of the Common Core State Standards were used in this project as an educational exercise for training purposes and to illustrate the strong connections between the Head Start Program and the expectations set forth in the Common Core Standards for the end of the Kindergarten year.
This non-commercial project was supported by the non-profit

The Source for Learning, Inc.*

in collaboration with the

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This correlation and any comments, observations, recommendations, or conclusions contained herein reflect the work of the collaboration work groups. They do not necessarily reflect the views of The Source for Learning, Inc. nor The National Head Start Association. The Project Facilitators performed minimal edits to clarify the overall content in redundant portions when aggregating correlation data.

*Information about The Source for Learning, Inc. is available on the SFL website, www.sflinc.org.
Correlation of *The Head Start Framework* to the **Common Core State Standards** for Mathematics in Kindergarten

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Acknowledgments

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Phase I Correlation Project: Work Group Participants

The initial draft of the correlation document resulted from the collaboration of multiple Work Groups composed of educational specialists and professionals from the Head Start community. The initial draft was created by the following participants during a live pre-conference session on April 5, 2011 at the 38th Annual Head Start Conference in Kansas City, MO.

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The second draft was developed and voluntarily reviewed by Head Start early childhood specialists who participated in virtual work groups. These virtual work groups used online webinars, discussions and virtual collaboration tools with their Head Start colleagues throughout the summer of 2011 to complete this correlation. Special thanks to the following individuals for their dedicated efforts and expertise on this project.

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Phase III: Correlation Project: Work Group Participants

This final draft version of the correlation was developed and reviewed by Head Start early childhood educational specialists and professionals from the Head Start community who attended the NHSA Training Institute on October 2, 2011 in Washington, D.C. These work groups discussed in-depth the accumulated correlations from previous phases of the project and collaborated with their Head Start colleagues. All collective group correlation decisions were recorded in an online data resource. Special thanks to the following individuals for their dedicated efforts and expertise on this project.

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Introduction

The Roadmap to Collaboration Project was conceived in early 2010 as the Common Core State Standards for K-12 were in the final stages of approval. Today over 46 states have adopted the Common Core State Standards for Kindergarten** (CCSS-K) which consists of two separate sets of standards: English Language Arts, and Mathematics. To date the Head Start Framework and the Common Core State Standards are the only two sets of common standards used in multiple states. The CCSS-K affects the education of millions of children in our nation—including tens of thousands of current Early Head Start and Head Start children. The CCSS-K reflects what a child should know and be able to do by the end of Kindergarten. A correlation of the Framework and the CCSS-K can provide a valuable missing link to connect an early childhood roadmap to the "cradle-to-career" continuum.

In 2010, the Office of Head Start asked programs to align the Head Start Framework with state early learning standards and school readiness goals of elementary schools systems to help programs see how to get children ready for Kindergarten and beyond. While school readiness has been a component of Head Start since 1965, the Office of Head Start issued a proclamation on...
that programs serving children from 3-5 years old must promote comprehensive school readiness. Yvette Sanchez Fuentes, Director of the Office of Head Start, states that “school readiness doesn’t begin when a child turns 3 or when the child turns 5.” 45 CFR 1304.22(c)(1-vii) of the Head Start Program Performance Standards (10-1-09 Edition) states that each program must provide a wide range of integrated learning experiences that together “form a foundation for school readiness and later school success.”

Head Start programs take an integrated, interdisciplinary approach to support the development of the “whole child.” The revised Head Start Early Learning and Development Framework* (see figure 1) was developed to bring further clarity to the domains and elements of the original Head Start Child Outcomes Framework released in 2000. The revisions are based upon new research and understandings of school readiness. The Framework authors believe that the essential areas of development and learning covered in the framework link directly to the readiness knowledge and skills of 3-5 year olds. Pat McMahon, the Training and Technical Assistance Manager in the Office of Head Start, states “development and learning are cumulative — a child’s earliest experiences build school readiness” (Office of Head Start, 2011).

A key part of school readiness also includes transition services to support successful transitions for enrolled children.
and families from Head Start into elementary school. Head Start Program Performance Standard 45 CFR 1304.419(c) requires Head Start staff to collaborate in joint transition-related discussions with their counterparts in the public schools. Head Start defines school readiness as a comprehensive collection of services and experiences; while a school system may have a narrower set of skills or benchmarks to indicate a child’s readiness to learn in a formal setting. Elementary school staff who discuss the connections between the 2010 Head Start Framework and their Kindergarten expectations will better understand the wide range of experiences and skills that contribute to each young child’s overall school readiness. When schools and early childhood programs work together, they can help ensure that all children and families are ready for school and that all schools are ready for children and families.

The Head Start Framework is a set of developmental building blocks covering all areas of child development and early learning. As of the date of this correlation, Common Core State Standards have been developed and adopted for only English Language Arts and Mathematics. The Common Core State Standards are sets of highly focused, subject specific standards designed to define end-of-year expectations with a cumulative progression over the K-12 years. This project seeks to go beyond a straight alignment of a comprehensive developmental framework to a narrow set of academic standards. Alignment refers to how well all elements in a system work together to guide instruction and student learning (Webb, 1997). According to Webster’s Dictionary, the word correlation (in a non-mathematical context) is “used to describe the observed relationship between instances of two events. A systematic pattern can be seen in the occurrences of events that are correlated.”

We use the term correlation in this project to describe a much more nuanced relationship between the two. The correlation between a Head Start Domain element and examples and a CCSS-K anchor standard with accompanying grade-specific standards can be so related that one directly implies the other or related in a supportive way so that one precedes the other. Aligning or correlating any two standards or frameworks must be a dynamic process. It is recommended that any group who wishes to develop any correlation, crosswalk or alignment should expect to have


more than one group of stakeholders review the results. Given the scope and complex nature of this specific correlation, the results can also be highly subjective. For these reasons, the Roadmap to Collaboration Project was designed to have multiple phases of review by the Head Start community.

Phase I took place “live” at the NHSA 38th Annual Head Start Conference & Meetings in April 2010. A group of NHSA members attended the pre-training session titled Roadmap to Collaboration: Connecting Head Start Child Outcomes Framework & Common Core State Standards for Kindergarten. During this session, groups of Head Start professionals & practitioners teamed up to help correlate The Head Start Framework with the continuum of Common Core State Standards for Kindergarten. The goal of the session was to complete an initial Correlation Draft that could spotlight the importance of aligning early education with the continuum of Common Core State Standards, help shape the common understanding of what is appropriate for children entering Kindergarten to know, and enable more effective collaboration with schools and smoother transitions for HS children to Kindergarten.

Participants were randomly divided into six worktables and were given a set of Common Core State Standards for Kindergarten (CCSS-K) on which to work. Groups read through pages of domain examples from The Head Start Framework printed on labels, discussed and selected domain examples they felt best correlated to each CCSS-K strand or standard assigned to their group, and adhered those to a poster for the strand or standard. Each group briefly presented
their work and then voted on how well they felt the work they met the goals. Some groups were confident and others were split in their opinion regarding their correlations. A final poll was taken and 78% of the session participants felt this is an important effort and more work was needed to complete this correlation.

Phase II was conducted via the virtual world. In late spring 2011, an online invitation was extended for Head Start directors and managers to join the next phase of the correlation project. Participants would continue working in the "virtual" world and meet in online webinars to complete the next draft. "Practitioners" such as staff responsible for coordinating curriculum in Head Start programs or those who serve as early childhood specialists were specifically emailed an invitation by NHSA.

Over the summer, six small groups of volunteers provided their expertise and completed online surveys in which they considered the correlation sets in a very granulated manner. They determined whether each example within each Head Start Domain element related to each CCSS-K strand and anchor standard with accompanying grade-specific standards. The result was a highly detailed correlation with interdisciplinary connections. As early childhood educators trained to assess the “whole child” and promote comprehensive school readiness, they saw relationships between CCSS-K strands and standards and Head Start Domain elements and examples that may not be immediately clear to their counterparts in the public schools who may be trained to look for only a small set of academic skills. In cases where a participant indicated that every HS domain, domain elements and examples were correlations to all CCSS-K strands, the Project facilitators reviewed the data for instances of concurrence of two or more participants. These indications were aggregated and included as the Head Start correlations for each CCSS-K section.

The Phase III Review was completed in a live, full day training session at the NHSA Leadership Skills, Policy, and Advocacy Institutes on October 2, 2011. In this phase, work groups collaborated to review the latest Collaboration Project draft with the Phase I and II correlations for each correlated CCSS-K section.

The Work Groups implemented a specially developed criterion rubric to analyze how directly previous correlated Head Start Domains and Elements related to CCSS-K ELA Strands and CCSS-K Math Domains at the Kindergarten level. The eight work groups debated whether the basic and big idea of the Head Start Domain with Elements match with the indicated CCSS-K portion in a primary way; noted if the key concepts, knowledge and skills match in a secondary supporting way; and whether there is a rational emphasis between the two. A final poll was taken at the end of the session, 100% participants felt this draft of the correlation was ready for wider review by members from other professional education associations.

Upon the integration of the review from Phase III, the project shall be made available online for broader open review and comments by the early childhood community. The end goal is for each section to consist of sets of HS Domain Elements that are direct and highly related skills a young child learns before Kindergarten in order to build a foundation for higher level development in formal educational settings. We hope that this correlation can serve as a resource for informing policymakers of the critical importance of an aligned formative assessment system to the overall educational system.
References:


Key Foundational Domains from The Head Start Framework* that Promote School Readiness and correlate to all Common Core State Standards** Mathematics K

During the correlation project, Head Start early childhood specialists strongly concurred that children who step into a Kindergarten classroom with good overall physical development and health status, good social-emotional health and development, and a basic disposition toward learning (as indicated in the Approaches to learning domain) will be better able to get the most from new learning experiences.

The following three non-academic Domains from The Head Start Child Development and Early Learning Framework* are indicated as essential correlations for all sections of the CCSS-K: Mathematics K**.

^ Physical Development & Health

One of three objectives created by The National Education Goals Panel to ensure all children start school ready to learn includes that children will receive the health care, nutrition, and physical activities that they need to arrive at school healthy (National Education Goals Panel, 1997). One can easily conclude that inadequate physical health and well-being will have a negative impact on a child’s school readiness.

^ Social & Emotional Development

Research shows that emotional and behavioral self-regulation play a key role in a child’s chances of early school success. Too often adults focus on academic preparedness and miss the importance of children’s social-emotional development (Raver, 2002).

^ Approaches to Learning

School readiness or children's readiness to learn at school is defined as a child's ability to meet the task demands of formal instruction in order to benefit from the learning opportunities and educational activities provided by the classroom. This includes self-regulatory skills such as the ability to cooperate, sit quietly for periods of time, listen to the teacher delivered information, and sustain efforts (National Scientific Council on the Developing Child, 2004).

These Head Start Framework Domains and their associated Domain elements with examples should be considered universally relevant as crucial foundational building blocks in a child’s personal development toward school readiness. Children who do not have these basic foundational building blocks in place at the start of the Kindergarten year are at greater risk of poor educational outcomes over the coming years.

(^ Domains, >Domain Elements & • Examples)

^ Physical Development & Health
> Physical Health Status: The maintenance of healthy and age appropriate physical well-being.
  • Possesses good overall health, including oral, visual, and auditory health, and is free from communicable or preventable diseases.
  • Participates in prevention and management of chronic health conditions and avoids toxins, such as lead.
  • Maintains physical growth within the Centers for Disease-Control and Prevention (CDC) recommended ranges for weight by height by age.
  • Gets sufficient rest and exercise to support healthy development.

> Health Knowledge & Practice: The understanding of healthy and safe habits and practicing healthy habits
  • Completes personal care tasks, such as dressing, brushing teeth, toileting, and washing hands independently from adults.
  • Communicates an understanding of the importance of health and safety routines and rules.

CONT. Key Foundational Domains from the Head Start Framework* that Promote School Readiness and the Common Core State Standards** Mathematics K

(^ Domains, >Domain Elements & • Examples)

- Follows basic health and safety rules and responds appropriately to harmful or unsafe situations.
- Distinguishes food on a continuum from most healthy to less healthy.
- Eats a variety of nutritious foods.
- Participates in structured and unstructured physical activities.
- Recognizes the importance of doctor and dentist visits.
- Cooperates during doctor and dentist visits and health and developmental screenings.

> Gross Motor Skills: The control of large muscles for movement, navigation, and balance.
  - Develops motor control and balance for a range of physical activities, such as walking, propelling a wheelchair or mobility device, skipping, running, climbing, and hopping.
  - Develops motor coordination and skill in using objects for a range of physical activities, such as pulling, throwing, catching, kicking, bouncing or hitting balls, and riding a tricycle.
  - Understands movement concepts, such as control of the body, how the body moves (such as an awareness of space and directionality), and that the body can move independently or in coordination with other objects.

> Fine Motor Skills: The control of small muscles for such purposes as using utensils, self-care, building, and exploring.
  - Develops hand strength and dexterity.
  - Develops eye-hand coordination to use everyday tools, such as pitchers for pouring or utensils for eating.
  - Manipulates a range of objects, such as blocks or books.
  - Manipulates writing, drawing, and art tools.

^ Social & Emotional Development

> Social Relationships: The healthy relationships and interactions with adults and peers.
  - Communicates with familiar adults and accepts or requests guidance.
  - Cooperates with others.
  - Develops friendships with peers.
  - Establishes secure relationships with adults.
  - Uses socially appropriate behavior with peers and adults, such as helping, sharing, and taking turns.
  - Resolves conflict with peers alone and/or with adult intervention as appropriate.
  - Recognizes and labels others’ emotions.
  - Expresses empathy and sympathy to peers.
  - Recognizes how actions others and accepts consequences of one’s actions.

> Self-concept & Self Efficacy: The perception that one is capable of successfully making decisions, accomplishing tasks, and meeting goals.
  - Identifies personal characteristics, preferences, thoughts, and feelings.
  - Demonstrates age appropriate independence in a range of activities, routines, and tasks.
  - Shows confidence in a range of abilities and in the capacity to accomplish tasks and take on new tasks.
  - Demonstrates age appropriate independence in decision making regarding activities and materials.

> Self-regulation: The ability to recognize and regulate emotions, attention, impulses, and behavior.
  - Recognizes and labels emotions.
  - Handles impulses and behavior with minimal direction from adults.
  - Follows simple rules, routines, and directions.
CONT. Key Foundational Domains from the Head Start Framework* that Promote School Readiness
and the Common Core State Standards** Mathematics K

(^Domains, >Domain Elements & •Examples)

> Emotional & Behavioral Health: A healthy range of emotional expression and learning positive alternatives to aggressive or isolating behaviors.
- Expresses a range of emotions appropriately, such as excitement, happiness, sadness, and fear.
- Refrains from disruptive, aggressive, angry, or defiant behaviors.
- Adapts to new environments with appropriate emotions and behaviors.

^Approaches to Learning

> Initiative & Curiosity: An interest in varied topics and activities, desire to learn, creativeness, and independence in learning.
- Demonstrates flexibility, imagination, and inventiveness in approaching tasks and activities.
- Demonstrates eagerness to learn about and discuss a range of topics, ideas, and tasks.
- Asks questions and seeks new information.

> Persistence & Attentiveness: The ability to begin and finish activities with persistence and attention.
- Maintains interest in a project or activity until completed.
- Sets goals and develops and follows through on plans.
- Resists distractions, maintains attention, and continues the task at hand through frustration or challenges.

> Cooperation: An interest and engagement in group experiences.
- Plans, initiates, and completes learning activities with peers.
- Joins in cooperative play with others and invites others to play.
- Models or teaches peers.
- Helps, shares, and cooperates in a group.

References:


CONT. Key Foundational Domains from the Head Start Framework* that Promote School Readiness and the Common Core State Standards** for Mathematics K

(* Domains, >Domain Elements & • Examples)

The English Language Development Domain from *The Head Start Child Development and Early Learning Framework* refers only to children who speak a home language other than English (DLL= dual language learners). Page 6 of the Introduction to *The Common Core Standards* clearly states, “It is beyond the scope of the Standards to define the full range of supports appropriate for English Language Learning and for students with special needs.” No mention of language is indicated in the introduction for the Common Core State Standards** for Mathematics.

Even with the above limitations, Head Start early childhood specialists who developed this crosswalk indicated that in addition to the previous three domains, it is essential to consider the English Language Domain as a key foundational domain for any child whose family speaks a home language other than English. A lack of English language skills would dramatically impact a child’s ability to constructively function in the Kindergarten classroom. Knowing that bi-lingual children often have communication skills in one language that they do not demonstrate in another language (Cobo-Lewis, Pearson, Eilers, & Umbel, 2002), Head Start early childhood specialists concurred that in order to be successful DLL children who step into a Kindergarten classroom must be able to comprehend and express themselves in the language in which instruction will be delivered. Therefore the English Language Development Domain should be correlated to all sections of the CCSS-K: Mathematics K** and be considered universally relevant as crucial foundational building blocks in a DLL child’s personal development toward school readiness.

**English Language Development**

> Receptive English Language Skills: The ability to comprehend or understand the English language.

- Participates with movement and gestures while other children and the teachers dance and sing in English.
- Acknowledges or responds nonverbally to common words or phrases, such as “hello” “good bye” “snack time” “bathroom”, when accompanied by adult gestures.
- Points to body parts when asked, “Where is your nose, hand, leg...?”
- Comprehends and responds to increasingly complex and varied English vocabulary, such as “Which stick is the longest?” “Why do you think the caterpillar is hungry?”
- Follows multi-step directions in English with minimal cues or assistance.

> Expressive English Language Skills: The ability to speak or use English.

- Repeats word or phrase to self, such as “bus” while group sings the “Wheels on the Bus” or “brush teeth” after lunch.
- Requests items in English, such as “car,” “milk,” “book,” “ball.”
- Uses one or two English words, sometimes joined to represent a bigger idea, such as “throwball.”
- Uses increasingly complex and varied English vocabulary.
- Constructs sentences, such as “The apple is round.” or “I see a fire truck with lights on.”

> Engagement in English Literacy Activities: Understanding and responding to books, storytelling, and songs presented in English.

- Demonstrates eagerness to participate in songs, rhymes and stories in English.
- Points to pictures and says the word in English, such as “frog,” “baby,” “run.”
- Learns part of a song or poem in English and repeats it.
- Talks with peers or adults about a story read in English.
- Tells a story in English with a beginning, middle, and end from a book or about a personal experience.

References:


Common Core State Standards** for Mathematics (Kindergarten)

How to Read the Correlation:

The top of each correlation page shows the basic organization of the Common Core State Standards (CCSS). Large groups of the CCSS Math Standards are organized into Domains, domains are divided into Anchor Topics and sets of standards within an Anchor Topic is called cluster. Anchor topics follow key skills and ideas that carry across all grade levels with increasingly challenging expectations.

The lower portion of each page shows the interrelated domains, elements and examples from the Head Start Framework that are primary or secondary correlations for the specific CCSS Math Domain, Anchors and cluster above. All correlated Head Start Domains with any listed elements and examples, should be considered developmental building blocks that together support a child’s successful ability to learn during the Kindergarten year and accomplish the “end of year” expectations. It is the collective, interrelated experiences from this “whole” portion of the Framework that correlates to the specific CCSS Math Domain, Anchor and cluster rather than just one isolated Head Start domain, element or example. Each Head Start Domain is color-coded to match the Framework “wheel” (on page 7) developed by the Office of Head Start for easier reference.


Common Core State Standards** for Mathematics (Kindergarten)

K.CC. Counting and Cardinality
Know number names and the count sequence.

1. Count to 100 by ones and by tens.
2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

Correlation with The Head Start Child Development and Early Learning Framework*
** Primary (\(^\text{^ Domain Elements} \& \bullet \text{Examples that correlate})

\(\text{^ LANGUAGE DEVELOPMENT}
> \text{Expressive Language: The ability to comprehend and understand language.}
- Comprehends increasingly complex varied vocabulary

> \text{Expressive Language: The ability to use language.}
- Engages in communication and conversation with others.
- Uses language to express ideas and needs.
- Uses increasingly complex and varied vocabulary.
- Engages in conversations with peers and adults.

\(\text{^ LITERACY KNOWLEDGE – SKILLS}
> \text{Print Concepts - Conventions: The concepts about print and early decoding (identifying letter-sound relationships).}
- Recognizes print in everyday life, such as numbers, letters, one’s name, words, and familiar logos and signs.
- Understands that print conveys meaning.
- Understands conventions, such as print moves from left to right and top to bottom of a page.
- Recognizes words as a unit of print and understands that letters are grouped to form words.
- Recognizes the association between spoken or signed and written words.

> \text{Early Writing: The familiarity with writing implements, conventions, and emerging skills to communicate through written representations, symbols, and letters.}
- \textit{Experiments with writing tools and materials.}
- Recognizes that writing is a way of communicating for a variety of purposes, such as giving information, sharing stories, or giving an opinion.

\(\text{^ LOGIC – REASONING}
> \text{Reasoning - Problem Solving: The ability to recognize, understand, and analyze a problem and draw on knowledge or experience to seek solutions to a problem.}
- Uses past knowledge to build new knowledge.

> \text{Symbolic Representation: The use of symbols or objects to represent something else.}
- Represents people, places, or things through drawings, movement, and three-dimensional objects.

\(\text{^ MATHEMATICS KNOWLEDGE - SKILLS}
> \text{Number Concepts - Quantities: The understanding that numbers represent quantities and have ordinal properties (number words represent a rank order, particular size, or position in a list).}
- Recognizes numbers and quantities in the everyday environment.
- \textit{Recites numbers in the correct order and understands that numbers come “before” or “after” one another.}
- \textit{Associates quantities and the names of numbers with written numerals.}
- Uses the number name of the last object counted to represent the number of objects in the set

## Common Core State Standards** for Mathematics (Kindergarten)

### K.CC. Counting and Cardinality

**CONTINUED: Know number names and the count sequence.**

### Primary HS- CDEL Framework Correlation Cont.

**Number Relationships - Operations: The use of numbers to describe relationships and solve problems.**
- Uses a range of strategies, such as counting, subitizing, or matching, to compare quantity in two sets of objects and describes the comparison with terms, such as more, less, greater than, fewer, or equal to.
- Recognizes that numbers (or sets of objects) can be combined or separated to make another number through the grouping of objects.
- Identifies the new number created when numbers are combined or separated.

**Geometry - Spatial Sense: The understanding of shapes, their properties, and how objects are related to one another.**
- Understands directionality, order, and position of objects, such as up, down, in front, behind.

**Measurement - Comparison: The understanding of attributes and relative properties of objects as related to size, capacity, and area.**
- Uses nonstandard and standard techniques and tools to measure and compare.

### ^ SCIENCE KNOWLEDGE - SKILLS

**Scientific Skills - Method: The skills to observe and collect information and use it to ask questions, predict, explain, and draw conclusions.**
- Observes and discusses common properties, differences, and comparisons among objects.
- Observes and discusses common properties, differences, and comparisons among objects.
- Participates in simple investigations to form hypotheses, gather observations, draw conclusions, and form generalizations.
- Describes and discusses predictions, explanations, and generalizations based on past experience.
Common Core State Standards** for Mathematics (Kindergarten)

<table>
<thead>
<tr>
<th>K.CC. Counting and Cardinality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count to tell the number of objects.</td>
</tr>
</tbody>
</table>

4. Understand the relationship between numbers and quantities; connect counting to cardinality.
   a. 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.
   b. Understand 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.
   c. Understand that each successive number name refers to a quantity that is one larger.

5. Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Correlation with The Head Start Child Development and Early Learning Framework*

Primary (^ Domains, >Domain Elements & •Examples that correlate)

^ LANGUAGE DEVELOPMENT
> Receptive Language: The ability to comprehend and understand language.
   • Comprehends increasingly complex and varied vocabulary.
   • Comprehends different grammatical structures or rules for using language.

> Expressive Language: The ability to use language.
   • Engages in communication and conversation with others.
   • Uses language to express ideas and needs.
   • Uses increasingly complex and varied vocabulary.
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> Print Concepts - Conventions: The concepts about print and early decoding (identifying letter-sound relationships).
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   • Seeks multiple solutions to a question, task, or problem.
   • Recognizes cause and effect relationships.
   • Classifies, compares, and contrasts objects, events, and experiences.
   • Uses past knowledge to build new knowledge.

> Symbolic Representation: The use of symbols or objects to represent something else.
   • Represents people, places, or things through drawings, movement, and three-dimensional objects.

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### Common Core State Standards** for Mathematics (Kindergarten)

#### K.CC. Counting and Cardinality

**CONTINUED:** Count to tell the number of objects.

#### Primary HS- CDEL Correlation Cont.

**^ MATHEMATHICS KNOWLEDGE - SKILLS**

> **Number Concepts - Quantities:** The understanding that numbers represent quantities and have ordinal properties (number words represent a rank order, particular size, or position in a list).

- Recognizes numbers and quantities in the everyday environment.
- Recites numbers in the correct order and understands that numbers come “before” or “after” one another.
- Associates quantities and the names of numbers with written numerals.
- Uses one-to-one counting and subitizing (identifying the number of objects without counting) to determine quantity.
- Uses the number name of the last object counted to represent the number of objects in the set.

> **Number Relationships - Operations:** The use of numbers to describe relationships and solve problems.

- Uses a range of strategies, such as counting, subitizing, or matching, to compare quantity in two sets of objects and describes the comparison with terms, such as more, less, greater than, fewer, or equal to.
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- Identifies the new number created when numbers are combined or separated.

> **Geometry - Spatial Sense:** The understanding of shapes, their properties, and how objects are related to one another.

- Recognizes and names common shapes, their parts, and attributes.
- Compares objects in size and shape.
- Understands directionality, order, and position of objects, such as up, down, in front, behind.

> **Measurement - Comparison:** The understanding of attributes and relative properties of objects as related to size, capacity, and area.

- Uses nonstandard and standard techniques and tools to measure and compare.

**^ SCIENCE KNOWLEDGE - SKILLS**

> **Scientific Skills - Method:** The skills to observe and collect information and use it to ask questions, predict, explain, and draw conclusions.

- Observes and discusses common properties, differences, and comparisons among objects.
- Collects, describes, and records information through discussions, drawings, maps, and charts.
- Describes and discusses predictions, explanations, and generalizations based on past experience.
Common Core State Standards** for Mathematics (Kindergarten)

### K.CC. Counting and Cardinality

<table>
<thead>
<tr>
<th>Compare numbers.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. <em>Include groups with up to ten objects.</em></td>
</tr>
<tr>
<td>7. Compare two numbers between 1 and 10 presented as written numerals.</td>
</tr>
</tbody>
</table>

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**Correlation with The Head Start Child Development and Early Learning Framework**

**Primary (^ Domains, >Domain Elements & •Examples that correlate)**

**^ LANGUAGE DEVELOPMENT**

> Expressive Language: The ability to comprehend and understand language.
  - Comprehends increasingly complex and varied vocabulary.

> Expressive Language: The ability to use language.
  - Uses language to express ideas and needs.
  - Uses increasingly complex and varied vocabulary.

**^ LITERACY KNOWLEDGE – SKILLS**

> Print Concepts - Conventions: The concepts about print and early decoding (identifying letter-sound relationships).
  - Recognizes print in everyday life, such as numbers, letters, one’s name, words, and familiar logos and signs.
  - Understands that print conveys meaning.
  - Understands conventions, such as print moves from left to right and top to bottom of a page.

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  - Recognizes that writing is a way of communicating for a variety of purposes, such as giving information, sharing stories, or giving an opinion.

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**^ MATHEMATICS KNOWLEDGE - SKILLS**

> Number Concepts - Quantities: The understanding that numbers represent quantities and have ordinal properties (number words represent a rank order, particular size, or position in a list).
  - Recognizes numbers and quantities in the everyday environment.
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  - Uses one-to-one counting and subitizing (identifying the number of objects without counting) to determine quantity.
  - Uses the number name of the last object counted to represent the number of objects in the set.

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# Common Core State Standards** for Mathematics (Kindergarten)

## K.CC. Counting and Cardinality

**CONTINUED: Compare numbers.**

### Primary HS- CDELF Correlation Cont.

#### > Number Relationships - Operations: The use of numbers to describe relationships and solve problems.

- **Uses a range of strategies, such as counting, subitizing, or matching, to compare quantity in two sets of objects and describes the comparison with terms, such as more, less, greater than, fewer, or equal to.**
- Recognizes that numbers (or sets of objects) can be combined or separated to make another number through the grouping of objects.
- Identifies the new number created when numbers are combined or separated.

#### > Geometry - Spatial Sense: The understanding of shapes, their properties, and how objects are related to one another.

- Understands directionality, order, and position of objects, such as up, down, in front, behind.

#### > Measurement - Comparison: The understanding of attributes and relative properties of objects as related to size, capacity, and area.

- Compares objects using attributes of length, weight and size (bigger, longer, taller, heavier).
- Uses nonstandard and standard techniques and tools to measure and compare.

### SCIENCE KNOWLEDGE - SKILLS

#### > Scientific Skills - Method: The skills to observe and collect information and use it to ask questions, predict, explain, and draw conclusions.

- Observes and discusses common properties, differences, and comparisons among objects.

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Common Core State Standards** for Mathematics (Kindergarten)

**K.OA.1 Operations and Algebraic Thinking**

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

1. Represent addition and subtraction with objects, fingers, mental images, drawings\(^2\), sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. \(^2\)Drawings need not show details, but should show the mathematics in the problem.

2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

3. Decompose numbers less than or equal to 10 into pairs 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 \(5 = 4 + 1\)).

4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

5. Fluently add and subtract within 5.

Correlation with The Head Start Child Development and Early Learning Framework*

**Primary (^ Domains, >Domain Elements & •Examples that correlate)**

**^ LANGUAGE DEVELOPMENT**

> Receptive Language: The ability to comprehend and understand language.

- Attends to language during conversations, songs, stories, or other learning experiences.
- Comprehends increasingly complex and varied vocabulary.
- Comprehends different forms of language, such as questions or exclamations.
- Comprehends different grammatical structures or rules for using language.

> Expressive Language: The ability to use language.

- Engages in communication and conversation with others.
- Uses language to express ideas and needs.
- Uses increasingly complex and varied vocabulary.
- Uses different forms of language.
- Engages in conversations with peers and adults.

**^ LOGIC – REASONING**

> Reasoning - Problem Solving: The ability to recognize, understand, and analyze a problem and draw on knowledge or experience to seek solutions to a problem.

- Seeks multiple solutions to a question, task, or problem.
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**^ MATHEMATICS KNOWLEDGE - SKILLS**

> Number Concepts - Quantities: The understanding that numbers represent quantities and have ordinal properties (number words represent a rank order, particular size, or position in a list).

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- Associates quantities and the names of numbers with written numerals.
- Uses one-to-one counting and subitizing (identifying the number of objects without counting) to determine quantity.


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Common Core State Standards** for Mathematics (Kindergarten)

**K.OA.1** Operations and Algebraic Thinking

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

**Primary HS- CDELF Correlation Cont.**

> Number Relationships - Operations: The use of numbers to describe relationships and solve problems.

- Uses a range of strategies, such as counting, subitizing, or matching, to compare quantity in two sets of objects and describes the comparison with terms, such as more, less, greater than, fewer, or equal to.
- **Recognizes that numbers (or sets of objects) can be combined or separated to make another number through the grouping of objects.**
- Identifies the new number created when numbers are combined or separated.

> Geometry - Spatial Sense: The understanding of shapes, their properties, and how objects are related to one another.

- Combines and separates shapes to make other shapes.
- Understands directionality, order, and position of objects, such as up, down, in front, behind.

**^ SCIENCE KNOWLEDGE - SKILLS**

> Scientific Skills - Method: The skills to observe and collect information and use it to ask questions, predict, explain, and draw conclusions.

- Uses senses and tools, including technology, to gather information, investigate materials, and observe processes and relationships.
- Observes and discusses common properties, differences, and comparisons among objects.
- Participates in simple investigations to form hypotheses, gather observations, draw conclusions, and form generalizations.
- Collects, describes, and records information through discussions, drawings, maps, and charts.
- Describes and discusses predictions, explanations, and generalizations based on past experience.

**Secondary**

**^ CREATIVE ARTS EXPRESSION**

> Drama: The portrayal of events, characters, or stories through acting and using props and language.

- Uses creativity and imagination to manipulate materials and assume roles in dramatic play situations.

**^ LITERACY KNOWLEDGE – SKILLS**

> Print Concepts - Conventions: The concepts about print and early decoding (identifying letter-sound relationships).

- Recognizes print in everyday life, such as numbers, letters, one’s name, words, and familiar logos and signs.
- Understands that print conveys meaning.
- Understands conventions, such as print moves from left to right and top to bottom of a page.

> Early Writing: The familiarity with writing implements, conventions, and emerging skills to communicate through written representations, symbols, and letters.

- Experiments with writing tools and materials.
- Recognizes that writing is a way of communicating for a variety of purposes, such as giving information, sharing stories, or giving an opinion.
- Uses scribbles, shapes, pictures, and letters to represent objects, stories, experiences, or ideas.
- Copies, traces, or independently writes letters or words.


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Common Core State Standards** for Mathematics (Kindergarten)

K.NBT. Number and Operations in Base Ten

Work with numbers 11–19 to gain foundations for place value.

1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Correlation with The Head Start Child Development and Early Learning Framework*

Primary (^ Domains, >Domain Elements & ●Examples that correlate)

^ MATHEMATICS KNOWLEDGE - SKILLS
> Number Concepts - Quantities: The understanding that numbers represent quantities and have ordinal properties (number words represent a rank order, particular size, or position in a list).

- **Recognizes numbers and quantities in the everyday environment.**
- Recites numbers in the correct order and understands that numbers come “before” or “after” one another.
- **Associates quantities and the names of numbers with written numerals.**
- **Uses one-to-one counting and subitizing (identifying the number of objects without counting) to determine quantity.**
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- **Identifies the new number created when numbers are combined or separated.**

Secondary

^ LOGIC – REASONING
> Reasoning - Problem Solving: The ability to recognize, understand, and analyze a problem and draw on knowledge or experience to seek solutions to a problem.

- Seeks multiple solutions to a question, task, or problem.
- Uses past knowledge to build new knowledge.


Common Core State Standards** for Mathematics (Kindergarten)

### K. MD. Measurement and Data

**Describe and compare measurable attributes.**

1. Describe measurable attributes of objects, such as length or weight.

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Correlation with The Head Start Child Development and Early Learning Framework*

**Primary (\^ Domains, >Domain Elements & •Examples that correlate)**

\(^{\text{MATHEMATICS KNOWLEDGE - SKILLS}}\)

- **Geometry - Spatial Sense:** The understanding of shapes, their properties, and how objects are related to one another.
  - Recognizes and names common shapes, their parts, and attributes.
  - Compares objects in size and shape.

- **Patterns:** The recognition of patterns, sequencing, and critical thinking skills necessary to predict and classify objects in a pattern.
  - Sorts, classifies, and serializes (puts in a pattern) objects using attributes, such as color, shape, or size.

- **Measurement - Comparison:** The understanding of attributes and relative properties of objects as related to size, capacity, and area.
  - Compares objects using attributes of length, weight and size (bigger, longer, taller, heavier).
  - Orders objects by size or length.
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**Secondary**

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- **Receptive Language:** The ability to comprehend or understand language.
  - Attends to language during conversation, songs, stories, or other learning experiences.
  - Comprehends increasingly complex and varied vocabulary.

- **Expressive Language:** The ability to use language. **Examples:**
  - Engages in communication and conversation with others.
  - Uses language to express ideas and needs.
  - Engages in conversations with peers and adults.

\(^{\text{LOGIC – REASONING}}\)

- **Reasoning - Problem Solving:** The ability to recognize, understand, and analyze a problem and draw on knowledge or experience to seek solutions to a problem.
  - Seeks multiple solutions to a question, task, or problem.
  - Classifies, compares, and contrasts objects, events, and experiences.

\(^{\text{SCIENCE KNOWLEDGE - SKILLS}}\)

- **Scientific Skills - Method:** The skills to observe and collect information and use it to ask questions, predict, explain, and draw conclusions.
  - Uses senses and tools, including technology, to gather information, investigate materials, and observe processes and relationships.
  - Observes and discusses common properties, differences, and comparisons among objects.

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Common Core State Standards** for Mathematics (Kindergarten)

K.MD.  Measurement and Data

Describe several measurable attributes of a single object.

2. Directly compare 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.

Correlation with The Head Start Child Development and Early Learning Framework*

Primary (^ Domains, >Domain Elements & ●Examples that correlate)

^ LOGIC – REASONING
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- Observes and discusses common properties, differences, and comparisons among objects.

Common Core State Standards** for Mathematics (Kindergarten)

### K.MD. Measurement and Data

Classify objects and count the number of objects in each category.

3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.³ Limit category counts to be less than or equal to 10.

Correlation with The Head Start Child Development and Early Learning Framework*

**Primary (^ Domains, >Domain Elements & ●Examples that correlate)**

**^ LOGIC – REASONING**

> Reasoning - Problem Solving: The ability to recognize, understand, and analyze a problem and draw on knowledge or experience to seek solutions to a problem.

- Seeks multiple solutions to a question, task, or problem.
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**^ MATHEMATICS KNOWLEDGE - SKILLS**

> Number Concepts - Quantities: The understanding that numbers represent quantities and have ordinal properties (number words represent a rank order, particular size, or position in a list).

- Uses the number name of the last object counted to represent the number of objects in the set.

> Number Relationships - Operations: The use of numbers to describe relationships and solve problems.

- Recognizes that numbers (or sets of objects) can be combined or separated to make another number through the grouping of objects.

> Geometry - Spatial Sense: The understanding of shapes, their properties, and how objects are related to one another.

- Recognizes and names common shapes, their parts, and attributes.

> Patterns: The recognition of patterns, sequencing, and critical thinking skills necessary to predict and classify objects in a pattern.

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### Common Core State Standards** for Mathematics (Kindergarten)

#### K.MD. Measurement and Data

**CONTINUED: Classify objects and count the number of objects in each category.**

### Secondary

#### LANGUAGE DEVELOPMENT

**Receptive Language: The ability to comprehend or understand language.**
- Attends to language during conversation, songs, stories, or other learning experiences.
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Common Core State Standards** for Mathematics (Kindergarten)

**K.G. Geometry**

Identify and describe shapes
(squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

1. 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.

2. Correctly name shapes regardless of their orientations or overall size.

3. Identify shapes as two-dimensional (lying in a plane, “flat”) or three dimensional (“solid”).

Correlation with The Head Start Child Development and Early Learning Framework*

**Primary (\^ Domains, \>Domain Elements & •Examples that correlate)**

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**\^ MATHEMATICS KNOWLEDGE - SKILLS**

\>Number Concepts - Quantities: The understanding that numbers represent quantities and have ordinal properties (number words represent a rank order, particular size, or position in a list).

- Recites numbers in the correct order and understands that numbers come “before” or “after” one another.

\>Patterns: The recognition of patterns, sequencing, and critical thinking skills necessary to predict and classify objects in a pattern.

- Recognized, duplicates, and extends simple patterns.

\>Geometry - Spatial Sense: The understanding of shapes, their properties, and how objects are related to one another.

- Recognizes and names common shapes, their parts, and attributes.
- Combines and separates shapes to make other shapes.
- Compares objects in size and shape.
- Understands directionality, order, and position of objects, such as up, down, in front, behind.

**Secondary**

**\^ LOGIC – REASONING**

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\>Symbolic Representation: The use of symbols or objects to represent something else.

- Represents people, places, or things through drawings, movement, and three-dimensional objects.

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Common Core State Standards** for Mathematics (Kindergarten)

### K.G. Geometry

**Analyze, compare, create, and compose shapes.**

4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).

5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

6. Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”

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Correlation with The Head Start Child Development and Early Learning Framework*

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|   - Recognizes cause and effect relationships.
|   - Classifies, compares, and contrasts objects, events, and experiences.
|   - Uses past knowledge to build new knowledge. |

|   > Symbolic Representation: The use of symbols or objects to represent something else.
|     - Represents people, places, or things through drawings, movement, and three-dimensional objects. |

| **^MATHEMATICS KNOWLEDGE - SKILLS**                           |
| > Number Relationships - Operations: The use of numbers to describe relationships and solve problems.
|   - Recognizes that numbers (or sets of objects) can be combined or separated to make another number through the grouping of objects. |

| > Geometry - Spatial Sense: The understanding of shapes, their properties, and how objects are related to one another.
|   - Recognizes and names common shapes, their parts, and attributes.
|   - Combines and separates shapes to make other shapes.
|   - Compares objects in size and shape. |

| > Patterns: The recognition of patterns, sequencing, and critical thinking skills necessary to predict and classify objects in a pattern.
|   - Sorts, classifies, and serializes (puts in a pattern) objects using attributes, such as color, shape, or size. |

| **^SCIENCE KNOWLEDGE - SKILLS**                               |
| > Scientific Skills - Method: The skills to observe and collect information and use it to ask questions, predict, explain, and draw conclusions.
|   - Observes and discusses common properties, differences, and comparisons among objects.
|   - Collects, describes, and records information through discussions, drawings, maps, and charts.
|   - Describes and discusses predictions, explanations, and generalizations based on past experience. |

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Common Core State Standards** for Mathematics (Kindergarten)

<table>
<thead>
<tr>
<th>K.G. Geometry</th>
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<tbody>
<tr>
<td>CONTINUED: Analyze, compare, create, and compose shapes.</td>
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Secondary

^ CREATIVE ARTS EXPRESSION

> Art: The use of a range of media and materials to create drawings, pictures, or other objects.

- Uses different materials and techniques to make art creations.
- Creates artistic works that reflect thoughts, feelings, experiences, or knowledge.
- Discusses one’s own artistic creations and those of others.

> Drama: The portrayal of events, characters, or stories through acting and using props and language.

- Uses creativity and imagination to manipulate materials and assume roles in dramatic play situations.

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