

**In Junior Kindergarten, instructional time should focus on two critical areas:**

- (1) developing an understanding of whole numbers to 10, including concepts of one-to-one correspondence, counting, cardinality (the number of items in a set), and comparison; and
- (2) recognizing two-dimensional shapes, describing spatial relationships, and sorting and classifying objects by one or more attributes.

**Relatively more learning time should be devoted to developing children’s sense of number as quantity than to other mathematics topics.**

***Descriptions of each Critical Area:***

- (1) Young children begin counting and quantifying numbers up to 10. They begin with oral counting and recognition of numerals and word names for numbers. Experience with counting naturally leads to quantification. Children count objects and learn that the sizes, shapes, positions, or purposes of objects do not affect the total number of objects in the group. One-to-one correspondence matches each element of one set to an element of another set, providing a foundation for the comparison of groups and the development of comparative language such as *more than*, *less than*, and *equal to*.

*Domains addressing this critical area:*

<p><b>CC (Counting and Cardinality)</b></p> <ul style="list-style-type: none"> <li>• Know number names and the count sequence.</li> <li>• Count to tell the number of objects.</li> <li>• Compare numbers.</li> </ul> <p><b><i>Students must master Counting and Cardinality by the end of Junior Kindergarten.</i></b></p>	<p><b>OA (Operations and Algebraic Thinking)</b></p> <ul style="list-style-type: none"> <li>• Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.</li> </ul>
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- (2) Young children explore shapes and the relationships among them. They identify the attributes of different shapes, including length, area, and weight, by using vocabulary such as *long*, *short*, *tall*, *heavy*, *light*, *big*, *small*, *wide*, *narrow*. They compare objects using comparative language such as *longer/shorter*, *same length*, *heavier/lighter*. They explore and create 2- and 3-dimensional shapes by using various manipulative and play materials such as craft sticks, blocks, pipe cleaners, and pattern blocks. They sort, categorize, and classify objects and identify basic 2-dimensional shapes using the appropriate language.

*Domains addressing this critical area:*

<p><b>MD (Measurement and Data)</b></p> <ul style="list-style-type: none"> <li>• Describe and compare measurable attributes.</li> <li>• Classify objects and count the number of objects in each category.</li> <li>• Work with money.</li> </ul>	<p><b>G (Geometry)</b></p> <ul style="list-style-type: none"> <li>• Identify and describe shapes (squares, circles, triangles, rectangles).</li> <li>• Analyze, compare, create, and compose shapes.</li> </ul>
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**Standards for Mathematical Practice**

*The Standards for Mathematical Practice complement the content standards so that students increasingly engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle, and high school years. These standards are the same at all grades from Pre-Kindergarten to 12<sup>th</sup> grade. These eight practices can be clustered into the following categories as shown in the chart below:*

<b>Habits of Mind of a Productive Mathematical Thinker:</b> MP.1: Make sense of problems and persevere in solving them. MP.6: Attend to precision.	<b>Reasoning and Explaining</b> MP.2: Reason abstractly and quantitatively. MP.3: Construct viable arguments and critique the reasoning of others
	<b>Modeling and Using Tools</b> MP.4: Model with mathematics. MP.5: Use appropriate tools strategically.
	<b>Seeing Structure and Generalizing</b> MP.7: Look for and make use of structure. MP.8: Look for and express regularity in repeated reasoning.

**1. Make sense of problems and persevere in solving them.**

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

***In Junior Kindergarten, examples of this practice standard can be found in the following lessons:***

- Small Group Activity Weeks 1, 2, 24, and 25
- Math Throughout the Year: Counting Wand, Counting Jar

**2. Reason abstractly and quantitatively.**

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize -- to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

***In Junior Kindergarten, examples of this practice standard can be found in the following lessons:***

Small Group Activity Weeks 6, 7, 9, and 10

**3. Construct viable arguments and critique the reasoning of others.**

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument – explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

***In Junior Kindergarten, examples of this practice standard can be found in the following lessons:***

Small Group Activity Weeks 3, 4, 12, 26

**4. Model with mathematics.**

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

***In Junior Kindergarten, examples of this practice standard can be found in the following lessons:***

Small group Activity Weeks 5, 8, 14, and 19

**5. Use appropriate tools strategically.**

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

***In Junior Kindergarten, examples of this practice standard can be found in the following lessons:***

Small Group Activity Weeks 20, 21 and 22

**6. Attend to precision.**

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

***In Junior Kindergarten, examples of this practice standard can be found in the following lessons:***

Small Group Activity Weeks 15, 18, 29 and 30

**7. Look for and make use of structure.**

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see  $7 \times 8$  equals the well-remembered  $7 \times 5 + 7 \times 3$ , in preparation for learning about the distributive property. In the expression  $x^2 + 9x + 14$ , older students can see the 14 as  $2 \times 7$  and the 9 as  $2 + 7$ . They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see  $5 - 3(x - y)^2$  as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers  $x$  and  $y$ .

***In Junior Kindergarten, examples of this practice standard can be found in the following lessons:***

Small Group Activity Weeks 11, 27 and 28

**8. Look for and express regularity in repeated reasoning.**

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation  $(y - 2)/(x - 1) = 3$ . Noticing the regularity in the way terms cancel when expanding  $(x - 1)(x + 1)$ ,  $(x - 1)(x^2 + x + 1)$ , and  $(x - 1)(x^3 + x^2 + x + 1)$  might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

***In Junior Kindergarten, examples of this practice standard can be found in the following lessons:***

Small Group Activity Weeks 13 and 23

**Organization of the Pre-Kindergarten to Grade 8 Content Standards**

The Pre-Kindergarten through Grade 8 content standards are organized by **grade level**. Within each grade level, standards are grouped first by **domain**, and then are further subdivided into **clusters** of related standards.

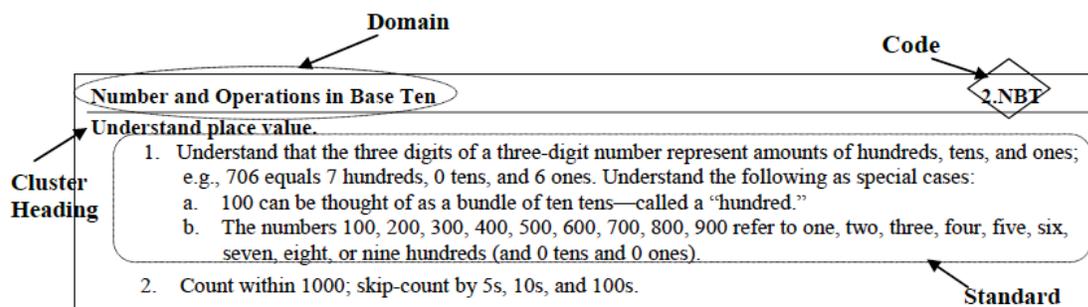
- **Standards** define what students should understand and be able to do.
- **Clusters** are groups of related standards. Note that standards from different clusters may sometimes be closely related, because mathematics is a connected subject.
- **Domains** are larger groups of related standards. Standards from different domains may sometimes be closely related.

The table below shows which domains are addressed at each grade level from Prekindergarten through Grade 5. When the domain ends, it is expected that students will show mastery of that content by the end of that grade (i.e., Students should mastery in Counting and Cardinality by the end of Kindergarten). *Italicized domains continue on into the middle grades.*

Grade	Pre-K	K	1	2	3	4	5
<b>Domains</b>	Counting and Cardinality						
	Operations and Algebraic Thinking						
	Number and Operations in Base Ten						
						Number and Operations – Fractions	
							<i>The Number System</i>
	Measurement and Data						
	Geometry						

**Standards Identifiers/Coding**

Each standard has a unique identifier that consists of the grade level, (PK, K, 1, 2, 3, 4, 5, 6, 7, or 8), the domain code, and the standard number, as shown in the example below. The standard below is identified as **2.NBT.1**, identifying it as a Grade 2 standard in the Numbers in Base Ten domain, and as the first standard in that domain.



**Unique Massachusetts Standards**

Standards unique to Massachusetts are included in the appropriate domain and cluster and are initially coded by “MA.” For example, the Massachusetts standard **MA.2.OA.2a** is identified with “MA” indicating a Massachusetts addition, “2” indicating a grade 2 standard, “OA” indicating the Operations and Algebraic Thinking domain, and “2a” indicating that it is a further specification to the second standard in that domain.

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**Building Blocks “Weeks” 1-8:** September 21 – November 25

*Notes:*

- Standards are revisited in a yearlong circular format. Teachers should move to the next “week” every 6 to 7 days, or as needed. Building Blocks “weeks” do not have to correspond to a week of school. There are 28 “weeks” in Building Blocks, and there are 36 weeks of instruction.
- **Small Group Activities** are used for assessment and have an assessment sheet available on Math Department website. All Small Group Activities in the Building Blocks curriculum guide continue to be a part of each instruction period.

**Week 1**

**Learning Trajectory:** To recognize, count, and subitize sets of 2.

**Standards Addressed:**

*Content Standards:*

**MA.PK.CC.1** Listen to and say the names of numbers in meaningful contexts.

**MA.PK.CC.4** Count many kinds of concrete objects and actions up to ten, using one-to-one correspondence, and accurately count as many as seven things in a scattered configuration.

*Practice Standard:*

**Math Practice Standard 1:** Make sense of problems and persevere in solving them.

*Small Group Activity:* Exploring Manipulatives

*Computer Activities:* Count and Race

*Notes:* For the first four weeks, spend time developing a culture of “mathematicians.” You can do this by addressing them as such in large-group discussions.

**Week 2**

**Learning Trajectory:** To recognize, count, and subitize sets of 1 to 3 items.

**Standards Addressed:**

*Content Standards:*

**MA.PK.CC.1** Listen to and say the names of numbers in meaningful contexts.

**MA.PK.CC.4** Count many kinds of concrete objects and actions up to ten, using one-to-one correspondence, and accurately count as many as seven things in a scattered configuration.

*Practice Standard:*

**Math Practice Standard 1:** Make sense of problems and persevere in solving them.

*Small Group Activity:* Find and Make Groups

*Computer Activities:* Kitchen Counter

*Notes:*

- In the beginning weeks, teachers should observe and record how high children can count accurately.
- To fully meet the standard MA.PK.CC.1, children must count from 1-10.
- To fully meet the standard MA.PK.CC.4, children must count a group of 7. This week, children are expected to count and make a group of 3. Kitchen Counter provides practice with hearing the number sequence to 10 but does not require children to have mastered the standard.
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**Week 3**

**Learning Trajectory:** To make groups of up to 5 items

**Standards Addressed:**

*Content Standards:*

**MA.PK.CC.1** Listen to and say the names of numbers in meaningful contexts.

**MA.PK.CC.4** Count many kinds of concrete objects and actions up to ten, using one-to-one correspondence, and accurately count as many as seven things in a scattered configuration.

*Practice Standard:*

**Math Practice Standard 3:** Construct viable arguments and critique the reasoning of others.

*Small Group Activity:* Make Number Pizzas

*Computer Activity:* Pizza Pizzazz 1

*Notes:* Instruction on the counting sequence with one-to-one correspondence should be scaffolded (e.g., 1-5 then 1-10). This activity provides practice counting to 5 in a scattered configuration. Students should be able to count 7 items in a scattered configuration by the end of the year.

**Week 4**

**Learning Trajectory:** To name 2-D shapes (circles and squares); to explore 3-D shapes

**Standards Addressed:**

*Content Standard:*

**MA.PK.G.2** Identify various two-dimensional shapes using appropriate language.

**MA.PK.G.3** Create and represent three-dimensional shapes (ball/sphere, square box/cube, tube/cylinder) using various manipulative materials (such as popsicle sticks, blocks, pipe cleaners, pattern blocks).

*Practice Standard:*

**Math Practice Standard 3:** Construct viable arguments and critique the reasoning of others

*Small Group Activity:* Match and Name Shapes

*Computer Activity:* Mystery Picture 1

*Notes:* To fully meet content standard MA.PK.G.3, children's play in the block area should be used to supplement this initial teaching of 3-D shapes during Whole Group Instruction (Circles and Cans and Match Blocks) Since there is no small group assessment of 3-D shapes, teachers should assess student learning through observing play, or use one of the blank assessment sheets found at end of Weekly Assessment Sheet set.

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**Week 5**

**Learning Trajectory:** To locate, name, and build triangles, rectangles and squares

**Standards Addressed:**

*Content Standard:*

**MA.PK.G.2** Identify various two-dimensional shapes using appropriate language.

*Practice Standard:*

**Math Practice Standard 4:** Model with mathematics.

*Small Group Activity:* Straw Shapes

*Computer Activity:* Mystery Picture 2 and Number Snapshots 1

*Notes:* This week will introduce triangles and rectangles and review squares and circles. To fully meet the standard, students will be able to identify and describe squares, circles, triangles and rectangles.

**Week 6**

**Learning Trajectory:** To name the number of objects in a group up to 5

**Standards Addressed:**

*Content Standard:*

**MA.PK.CC.1** Listen to and say the names of numbers in meaningful contexts.

**MA.PK.CC.4** Count many kinds of concrete objects and actions up to ten, using one-to-one correspondence, and accurately count as many as seven things in a scattered configuration.

*Practice Standard:*

**Math Practice Standard 2:** Reason abstractly and quantitatively.

*Small Group Activity:* Make Number Pizzas (Pizza Game I)

*Computer Activity:* Pizza Pizzazz 2 and Road Race

*Notes:* This activity provides more practice with counting items in a group up to 5. If children are ready, they may make groups up to 6 using the dot dice as a model.

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**Week 7**

**Learning Trajectory:** To make a group equal to another group using one-to-one correspondence

**Standards Addressed:**

*Content Standard:*

**MA.PK.CC.2** Recognize and name written numerals 0-10.

**MA.PK.CC.5** Use comparative language, such as *more/less than*, *equal to*, to compare and describe collections of objects.

*Practice Standard:*

**Math Practice Standard 2:** Reason abstractly and quantitatively.

*Small Group Activity:* Compare Game with Dot Cards (Get Just Enough)

*Computer Activity:* Party Time 1 and Road Race Shape Counting

*Notes:*

- Scaffold the lesson using groups of 3, 5, or 10 depending on student readiness.
- Introduce the words “equal to” in addition to “just enough” to help students compare equal groups.
- This week, numerals 1-5 are first taught during Whole Group Instruction.

**Week 8:**

**Learning Trajectory:** To recognize a numeral up to 5 and produce the given set

**Standards Addressed:**

*Content Standard:*

**MA.PK.CC.2** Recognize and name written numerals 0–10.

**MA.PK.CC.3** Understand the relationships between numerals and quantities up to ten.

*Practice Standard:*

**Math Practice Standard 4:** Model with mathematics.

*Small Group Activity:* Numeral Train Game (Number Jump)

*Computer Activity:* Pizza Pizzazz 3 and Numeral Train Game

*Notes:*

- This is the first experience children have with recognizing numerals 1-6 in a small group setting. Mastery is not expected at this time.
- *Numeral Train Game* can be included in day-to-day center times throughout the year, adding the more challenging rules as they are introduced. Alternatively, allow more opportunities for some students to play using basic rules with one die and smaller numbers.

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***Building Blocks “Weeks” 9-18:*** November 30 – February 12

**Week 9**

***Learning Trajectory:*** To match and describe congruent shapes

***Standards Addressed:***

*Content Standard:*

**MA.PK.G.2** Identify various two-dimensional shapes using appropriate language.

*Practice Standard:*

**Math Practice Standard 2:** Reason abstractly and quantitatively

*Small Group Activity:* Memory Geometry

*Computer Activity:* Memory Geometry 1 and Number Snapshots 2

*Notes:* Playing Memory Geometry meets the above standard by asking children to use language to describe how they know a triangle is a triangle, etc.

**Week 10**

***Learning Trajectory:*** To name, describe, match and sort familiar 2D shapes

***Standards Addressed:***

*Content Standard:*

**MA.PK.MD.3** Sort, categorize and classify objects by more than one attribute.

*Practice Standard:*

**Math Practice Standard 2:** Reason abstractly and quantitatively

*Small Group Activity:* Guess My Rule (Shape Step)

*Computer Activity:* Mystery Pictures 2 and Memory Geometry 2

*Notes:* This is the first lesson that introduces sorting. This week, students should be able to describe the teachers sorting rule and tell which group a shape belongs to and why.

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**Week 11**

**Learning Trajectory:** To recognize numerals and the quantities they represent and represent one more for quantities up to 3

**Standards Addressed:**

*Content Standard:*

**MA.PK.CC.2** Recognize and name written numerals 0-10.

**MA.PK.CC.3** Understand the relationships between numerals and quantities up to ten.

**MA.PK.OA.1** Use concrete objects to model real-world addition (putting together) and subtraction (taking away) problems up through five.

*Practice Standard:*

**Math Practice Standard 7:** Look for and make use of structure.

*Small Group Activity:* How Many Now? (Space Race)

*Computer Activity:* Party Time 2 and Memory Number 2

*Notes:* This is the first lesson to teach “one more” and introduce children to addition. The “plus one” structure will be repeated in the upcoming weeks. Mastery is not expected at this time.

**Week 12**

**Learning Trajectory:** To recognize numerals and the quantities they represent up to 10; to sort and classify small groups

**Standards Addressed:**

*Content Standard:*

**MA.PK.CC.1** Listen to and say the names of numbers in meaningful contexts.

**MA.PK.CC.2** Recognize and name written numerals 0-10.

**MA.PK.CC.3** Understand the relationships between numerals and quantities up to ten.

*Practice Standard:*

**Math Practice Standard 3:** Construct viable arguments and critique the reasoning of others.

*Small Group Activity:* Dinosaur Shop (Mr. Mix-up)

*Computer Activity:* Dinosaur Shop 1

*Notes:*

- During Dinosaur Shop, children should demonstrate mastery of sorting objects by one attribute. If extra practice is required, continue to demonstrate sorting before children try to sort on their own.
- While playing Mr. Mix-up children should show mastery of the counting sequence to 10.

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**Week 13**

**Learning Trajectory:** To order numbers and lengths to 10; to understand the pattern plus 1 in the counting sequence

**Standards Addressed:**

*Content Standard:*

**MA.PK.OA.1** Use concrete objects to model real-world addition (putting together) and subtraction (taking away) problems up through five.

**MA.PK.CC.5** Use comparative language, such as *more/less than*, *equal to*, to compare and describe collections of objects.

*Practice Standard:*

**Math Practice Standard 8:** Look for and express regularity in repeated reasoning.

*Small Group Activity:* Build Cube Stairs (How Many Now?)

*Computer Activity:* Build Stairs 1 and 2

*Notes:* Both “Build Cube Stairs” and “How Many Now?” provide children with practice with ‘plus one’ and ‘minus one.’ At this time, mastery is expected of this skill up to 5 using +/- 1.

**Week 14**

**Learning Trajectory:** To find and describe the shapes of objects in their environment

**Standards Addressed:**

*Content Standard:*

**MA.PK.G.2** Identify various two-dimensional shapes using appropriate language.

*Practice Standard:*

**Math Practice Standard 4:** Model with mathematics

*Small Group Activity:* Feely Box (Match and Name)

*Computer Activity:* Mystery Pictures 2 and Memory Geometry 3

*Notes:*

- Children should be able to identify the four basic shapes at this time and use appropriate language to explain how they know it is this shape.
- Trapezoids are not part of the 2011 standards in PreK and should not be taught. They are now taught in Kindergarten.

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**Week 15**

**Learning Trajectory:** To sort and classify shapes

**Standards Addressed:**

*Content Standard:*

**MA.PK.MD.3** Sort, categorize, and classify objects by more than one attribute.

*Practice Standard:*

**Math Practice Standard 6:** Attend to precision.

*Small Group Activity:* Guess My Rule (Shape Step)

*Computer Activity:* Mystery Pictures 4 and Memory Geometry 4

*Notes:* This activity is meant to be a teacher sort, but to achieve the standard, children should sort and classify objects independently. Also, note that only simple shapes should be used, avoiding shapes that are not taught in the 2011 standards such as hexagon, trapezoids and rhombuses. Using a shape set, students will be able to sort items based on more than one attribute and explain. This standard should be mastered after this week's activities.

***Weeks 16 and 17 have been removed from the Junior Kindergarten Curriculum Map as these weeks do not align with the 2011 standards. All other patterning lessons and computer games in Weeks 16 and 17 should also be removed.***

**Week 18**

**Learning Trajectory:** To subitize to 5; to match numerals and quantities to one another

**Standards Addressed:**

*Content Standard:*

**MA.PK.CC.2** Recognize and name written numerals 0-10.

**MA.PK.CC.3** Understand the relationships between numerals and quantities up to ten.

*Practice Standard:*

**Math Practice Standard 6:** Attend to precision

*Small Group Activity:* Snapshots and Memory Number (2 assessments administered this "week")

*Computer Activity:* Party Time 3 and Memory Number 2

*Notes:* Memory Number is played with one set of dot cards and one set of numeral cards. Children should show mastery of recognizing numerals 1-10 and matching numerals to their quantities during this game. If more support is needed, dot and numeral cards may be used to replace the set of numeral cards

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***Building Blocks “Weeks” 19-26:*** February 22 – May 13

**Week 19**

***Learning Trajectory:*** To order numbers up to 10. To produce a certain number of objects up to 10.

***Standards Addressed:***

*Content Standard:*

**MA.PK.CC.4** Count many kinds of concrete objects and actions up to ten, using one-to-one correspondence, and accurately count as many as seven things in a scattered configuration.

**MA.PK.MD.4** Recognize that certain objects are coins and that dollars and coins represent money.

*Practice Standard:*

**Math Practice Standard 4:** Model with mathematics

*Small Group Activity:* *X-Ray Vision 1* and *Dinosaur Shop (Fill order)* (2 assessments administered this “week”)

*Computer Activity:* *Dinosaur Shop 1* and *Pizza Pizzazz 3*

*Notes:*

- Standard MA.PK.CC.4 should be mastered at this time (counting a group to 7).
- Dinosaur Shop partially fulfills the standard MA.PK.MD.4, if money is used. To fully meet the standard, teachers can transform their dramatic play center into a theme that includes money. Ideas include a grocery store, pet store, ice cream store, a hair salon or a Dinosaur Shop Toy Store. The play that occurs as a result of this new dramatic play center would fully meet the standard MA.PK.MD.4.

**Week 20**

***Learning Trajectory:*** To directly compare amounts using words like bigger and longer; to order numbers and lengths.

***Standards Addressed:***

*Content Standard:*

**MA.PK.OA.1** Use concrete objects to model real-world addition (putting together) and subtraction (taking away) problems up through five.

**MA.PK.MD.1** Recognize the attributes of length, area, weight, and capacity of everyday objects using appropriate vocabulary (e.g., *long, short, tall, heavy, light, big, small, wide, narrow*).

**MA.PK.MD.2** Compare the attributes of length and weight for two objects, including longer/shorter, same length; heavier/lighter, same weight; holds more/less, holds the same amount.

*Practice Standard:*

**Math Practice Standard 5:** Use appropriate tools strategically

*Small Group Activity:* How Many Now? (Hidden Version) - X-Ray Vision

*Computer Activity:* Comparisons and Deep Sea Compare

*Notes:* *Comparison* and *Deep Sea Compare* begin to meet the standards of MA.PK.MD.1 and MA.PK.MD.2. More classroom practice is necessary. Teachers may supplement with everyday objects and real measurement and weight tools to fully meet the standard.

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**Week 21**

**Learning Trajectory:** To measure by placing units of length end to end

**Standards Addressed:**

*Content Standard:*

**MA.PK.MD.2** Compare the attributes of length and weight for two objects, including longer/shorter, same length; heavier/lighter, same weight; holds more/less, holds the same amount.

*Practice Standard:*

**Math Practice Standard 5:** Use appropriate tools strategically.

*Small Group Activity:* What's the missing Step? (Length Riddles)

*Computer Activity:* Build Stairs 3 and Working' on the Railroad

*Notes:* Hands-on experiences should supplement the length riddles to fully meet the standard.

**Week 22**

**Learning Trajectory:** To order numbers and lengths

**Standards Addressed:**

*Content Standard:*

**MA.PK.MD.1** Recognize the attributes of length, area, weight, and capacity of everyday objects using appropriate vocabulary (e.g., *long, short, tall, heavy, light, big, small, wide, narrow*).

**MA.PK.MD.2** Compare the attributes of length and weight for two objects, including longer/shorter, same length; heavier/lighter, same weight; holds more/less, holds the same amount.

*Practice Standard:*

**Math Practice Standard 5:** Use appropriate tools strategically.

*Small Group Activity:* Length Riddles (X-Ray Vision 2)

*Computer Activity:* Reptile Ruler and Number Compare 2

*Notes:* Continue to provide hands-on experiences to fully meet the standards. Both standards should be mastered at this time.

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**Week 23**

**Learning Trajectory:** To compose shapes to make pictures and designs

**Standards Addressed:**

*Content Standard:*

**MA.PK.G.1** Identify relative position of objects in space, and use appropriate language (e.g. beside, inside, next to, close to, above, below, apart)

*Practice Standard:*

**Math Practice Standard 8:** Look for and express regularity in repeated reasoning.

*Small Group Activity:* What's the missing card? (Pattern Block Puzzles)

*Computer Activity:* Piece Puzzler 1 and 2

*Notes:* The small group recording sheet has been adapted to reflect this standard. As children work in small groups or on the computer, ask them to describe where and why they are putting each piece and record their language in the comments section of the recording sheet. The content standard should be mastered at this time

**Week 24**

**Learning Trajectory:** To add on one to sets less than 5. To combine small numbers to 5

**Standards Addressed:**

*Content Standard:*

**MA.PK.OA.1.** Use concrete objects to model real-world addition (putting together) and subtraction (taking away) problems up through five.

*Practice Standard:*

**Math Practice Standard 1:** Make sense of problems and persevere in solving them.

*Small Group Activity:* How many now? and Dinosaur Shop – adding

*Computer Activity:* Pizza Pizzazz 4 and Dinosaur Shop 3

*Notes:*

- If children have mastered the +/- 1 version of How Many Now?, play with +/- 2 with sets up to 5. This will begin to meet the standard in a more challenging way. In the upcoming weeks, focus on both addition and subtraction to assure that the standard is fully met.
- Activities which teachers will want to give more time to for subtraction include: Finger Word Problems, Gone Fishing, songs with subtraction in them such as “Five Little Monkeys,” and Places Scenes adapted for subtraction. Include these addition and subtraction activities in the day as frequently as possible during remaining weeks during transition times, lining up, getting ready to go out as well as during play and social times such as snack and clean-up.

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**Week 25**

**Learning Trajectory:** To count to and back from 10. To quickly recognize the sum of two small groups.

**Standards Addressed:**

*Content Standard:*

**MA.PK.OA.1** Use concrete objects to model real-world addition (putting together) and subtraction (taking away) problems up through five.

*Practice Standard:*

**Math Practice Standard 1:** Make sense of problems and persevere in solving them.

*Small Group Activity:* X-Ray Vision 2 and Snapshots (Adding) (2 assessments)

*Computer Activity:* Dinosaur Shop 3 and Off the Tree

*Notes:* Use various combinations of numbers 1-5 during Snapshots to assure mastery of the standard by the end of the year. Continue to provide more time in whole-group instruction and during play activities for subtraction practice.

**Week 26**

**Learning Trajectory:** To add on from numbers less than 5

**Standards Addressed:**

*Content Standard:*

**MA.PK.OA.1** Use concrete objects to model real-world addition (putting together) and subtraction (taking away) problems up through five.

*Practice Standard:*

**Math Practice Standard 3:** Construct viable arguments and critique the reasoning of others

*Small Group Activity:* Pizza Game 2 and Gone Fishing and Dino Shop (Make it Right)

*Computer Activity:* Dinosaur Shop 4 and Ordinal Construction Company

*Notes:* This week's games provide practice with addition in a different way: adding on. However, it is not a PreK standard that children should have mastered by the end of the year. The Kindergarten standard K.CC.2 states, "count forward beginning from a given number within the known sequence (instead of having to begin at 1)."

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**Week 27**

**Learning Trajectory:** To compose and decompose shapes

**Standards Addressed:**

*Content Standard:*

**MA.PK.G.3** Create and represent three-dimensional shapes (ball/sphere, square box/cube, tube/cylinder) using various manipulative materials (such as popsicle sticks, blocks, pipe cleaners, pattern blocks).

*Practice Standard:*

**Math Practice Standard 7:** Look for and make use of structure

*Small Group Activity:* *Building Shapes* and *Feely Box (Describe)*

*Computer Activity:* Shape Parts 1 and Piece Puzzler 2

*Notes:* To meet the standard, use real objects in the feely box and then challenge students to create these 3D shapes with appropriate materials.

**Week 28**

**Learning Trajectory:** To compose and decompose shapes. To describe shapes in terms of their attributes.

**Standards Addressed:**

*Content Standard:*

**MA.PK.G.3** Create and represent three-dimensional shapes (ball/sphere, square box/cube, tube/cylinder) using various manipulative materials (such as popsicle sticks, blocks, pipe cleaners, pattern blocks).

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

*Practice Standard:*

**Math Practice Standard 7:** Look for and make use of structure

*Small Group Activity:* *Shape Step (Properties)* and *Building Shapes*

*Computer Activity:* Shape Parts 2 and Piece Puzzler 3

*Notes:* To meet the standard MA.PK.G.3, use real objects in the feely box and then challenge students to create these 3D shapes with appropriate materials. The standard should be mastered at this time.

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**Week 29**

**Learning Trajectory:** To quickly recognize the total number of two groups.

**Standards Addressed:**

*Content Standard:*

**MA.PK.CC.5** Use comparative language, such as *more/less than, equal to*, to compare and describe collections of objects.

**MA.PK.OA.1** Use concrete objects to model real-world addition (putting together) and subtraction (taking away) problems up through five.

*Practice Standard:*

**Math Practice Standard 6:** Attend to precision

*Small Group Activity:* Compare Game (adding)

*Computer Activity:* Piece Puzzler 4 and Number Snapshots 3

*Notes:*

- To fully meet the standard MA.PK.OA.1, focus solely on the Compare game this week. Children should master the addition portion of this standard at this time.
- If children need more experience with composing and decomposing shapes to meet standard MA.PK.G.3 then Pattern Block Puzzles may also be taught.

**Week 30**

**Learning Trajectory:** To quickly recognize the total number of two small groups.

**Standards Addressed:**

*Content Standard:*

**MA.PK.CC.5** Use comparative language, such as *more/less than, equal to*, to compare and describe collections of objects.

**MA.PK.OA.1** Use concrete objects to model real-world addition (putting together) and subtraction (taking away) problems up through five.

*Practice Standard:*

**Math Practice Standard 6:** Attend to precision

*Small Group Activity:* Gone Fishing 2 (adapted from whole-group instruction)

*Computer Activity:* Number Compare 2 and Number Snapshots 4

*Notes:*

- *Gone Fishing 2* is a whole-group activity that teachers will need to assess during a small-group activity this week.
- Compare only needs to be played by children who have not mastered addition yet. Use week 29 assessment sheet to determine who needs more work with Compare game.
- Children should show mastery of MA.PK.CC.5 at this time and MA.PK.OA.1 with addition and subtraction at this time.