

Preparedness for Kindergarten Common Core State Standards

The Common Core State Standards were developed as a result of two decades of research into how students learn mathematics. Two themes emerged as paramount in building effective programs: (1) standards must have greater focus and coherence, and (2) standards must guide the learners in understanding mathematics. Students with disabilities may be provided with additional supports and services, including instructional supports for learning by presenting information in multiple ways, and instructional accommodations implemented by changing the materials and/or procedures. TouchMath is committed to providing these supports through the TouchMath Standards-Based Kindergarten Program.

The Standards for Mathematical Practice and the Standards for Content are listed below. The Standards for Mathematical Practice are emphasized throughout instruction. The Standards for Content are correlated to each module.

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make sense of structure.
8. Look for and express regularity in repeated reasoning.

Counting & Cardinality

Know number names and the count sequence.

- K.CC.1. Count to 100 by ones and by tens.
- K.CC.2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
- K.CC.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).

Count to tell the number of objects.

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

Compare numbers.

- K.CC.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.
- K.CC.7. Compare two numbers between 1 and 10 presented as written numerals.

► Math Readiness Skills for Pre-K

Common Core State Standards

© Pre-K

Operations & Algebraic Thinking

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

- K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g. claps), acting out situations, verbal explanations, expressions, or equations.
- K.OA.2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
- K.OA.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 $5 = 4 + 1$).
- K.OA.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.
- K.OA.5. Fluently add and subtract within 5.

Number & Operations in Base Ten

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

- K.NBT.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 (such as $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Measurement & Data

Describe and compare measurable attributes.

- K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

- K.MD.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.*

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

- K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Geometry

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

- K.G.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.
- K.G.2. Correctly name shapes regardless of their orientations or overall size.
- K.G.3. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Analyze, compare, create, and compose shapes.

- K.G.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).
- K.G.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
- K.G.6. Compose simple shapes to form larger shapes. *For example, “Can you join these two triangles with full sides touching to make a rectangle?”*

COUNTING AND CARDINALITY: NUMBER SENSE (READINESS)

Module 1

Counting

Uses movement and relationship to body parts to associate one-to-one correspondence

Introduce TouchPoints with Pictures (TPPs) used as counters

Counts theme-based space objects and pictures

Preparation for Kindergarten: K.CC.1, K.CC.2, K.CC.4, K.CC.5, K.CC.6

Counting

Count to 10 verbally

Count to 10 verbally from any number

One-to-one correspondence

Point to objects when counting

Count quantities of manipulatives

Count quantities of objects in pictures

Numbers 1-10

Use matching and counting to tell how many

Match number of fingers shown to objects

Match TPPs to objects in pictures

Compare sets of objects

Identify equal and unequal sets

Verbally identify more and equal (same)

Make sets of objects equal

Ordinal numbers first–fifth

Recognize names given orally for ordinal positions

Verbally identify objects in each ordinal position in pictures

COUNTING AND CARDINALITY: NUMBER CONCEPTS AND NUMERALS

Module 2

TouchPoints

Includes relating and matching different representations of numbers with animals as the focus

Introduces numerals

Introduces Pictorial TouchPoints to associate quantities and numerals

Extends counting sequence to 20

Preparation for Kindergarten: K.CC.2, K.CC.3, K.CC.4, K.CC.5, K.CC.6, K.CC.7

Represent quantities to nine using manipulatives and TouchPoints

Associate numeral, quantity, and TouchPoint

Connect quantity and TouchPoint

Represent quantities to nine using pictures and TouchPoints

Count objects in pictures

Associate objects in pictures to Pictorial TouchPoints

Associate pictures, Pictorial TouchPoints, and TouchPoints through nine

Match foam TouchPoints (blank sides of TPPs) to TPPs to pictures on Activity Mats

Relate the three representations

Demonstrate the correct Touching/Counting Pattern for TouchPoints

Compare quantities, numerals, and quantities with numerals

Identify which set of objects has more

Select which Pictorial TouchPoint represents more

Trace, write, and compare numerals

MEASUREMENT AND DATA: CLASSIFYING (READINESS)

Module 3

Classifying

Includes describing, sorting, classifying, counting, and comparing

Uses paper plates divided into two and three categories for foods as readiness for graphs in Module 5

Reinforces skills introduced in Modules 1 and 2

Preparation for Kindergarten: K.CC.5, K.CC.6, K.MD.1, K.MD.2, K.MD.3

Describe foods

Color

Size

Shape

Sort, classify, and count foods by their descriptions

Match food replicas, images, and picture cards to objects in pictures

Match foam TouchPoints (blank sides of TPPs) to objects in pictures

Move manipulatives from objects in pictures to the table to sort

Represent foods in two categories on paper plates

Use all representations of food manipulatives

Move manipulatives from the table top or the pictures to the paper plates

Count and compare the number in each category

Represent foods in three categories (including a drink)

Sort the two food categories (maintaining the drink category) in various ways

Move the manipulatives to the paper plates

Count and compare the number in each category

GEOMETRY: SPATIAL CONCEPTS

Module 4

2D-Shapes

Includes circle, triangle, square, rectangle, (rhombus, trapezoid)

Identifies defining attributes (sides and corners)

Presents shapes of different sizes, colors, and orientations

Introduces location words

Provides a soft introduction to 3-D shapes

Preparation for Kindergarten: K.MD.1, K.MD.2, K.G.1, K.G.2, K.G.3, K.G.4, K.G.5, K.G.6

Describe 2-D shapes by defining attributes

Count the number of sides

Count the number of corners

Identify shapes by name in the environment

Demonstrate that size is not a defining attribute

Recognize shapes of different orientations

Use defining and non-defining attributes

Distinguish a given shape from other shapes

Match the size of a shape

Sort, classify, and compare shapes

Compare shapes with different numbers of sides and corners

Identify shapes with the same number of sides and corners

Compose shapes

Use the same shape to create other shapes and pictures

Use different shapes to create new shapes and pictures

Compare 2-D and 3-D shapes

Recognize that 2-D shapes are flat and seen on paper

Identify 2-D shapes within 3-D shapes

Model shapes in the environment

Build shapes with sticks and clay balls, building blocks

Trace and draw 2-D shapes with templates

Use location words

Understand and identify location words when used in directions

Describe the relative position of objects in pictures

**OPERATIONS AND ALGEBRAIC THINKING:
READINESS FOR ADDING AND SUBTRACTING**

Module 4

2-D Shapes

Applies counting and number sense

Adds to sets of shapes

Preparation for Kindergarten: K.OA.1, K.OA.2, K.OA.3, K.OA.4

Continue to compare the number of objects in sets

Sequence sets of objects and numerals

Recognize when one set has one more than the other

Add to sets

Add one more to sets

Add objects to one set to make equal sets

Module 5

Graphs

Applies counting and number sense

Decomposes numbers up to 10

Preparation for Kindergarten: K.OA.1, K.OA.2, K.OA.3, K.OA.4

Uses up to 10 objects

Creates two equal sets

Creates two unequal sets

Uses 12 objects

Finds equal sets of 2-4 objects

Uses all objects to create different sets

Identifies and compares

Counts the number in each set

Verbalizes the ways to make a given number with sets of objects

MEASUREMENT AND DATA: GRAPHS (READINESS)

NOTE: Graphs and Patterns are included in some state standards and essential skills

Module 5

Graphs

Incorporates the four themes used in previous modules

Transitions from the paper plates in Module 3 to graph templates

Builds on skills introduced in previous modules

Preparation for Kindergarten: K.MD.1, K.MD.2, K.MD.3

Sort, classify, and record results on simple graphs

Match TPPs to pictures of objects

Move TPPs to the columns on the graph

Count the number in each column

Compare the quantities

Associate numerals with quantities

Match TouchNumerals to the quantity in each column

Compare the numeral of each quantity

Identify a numeral for the column

Match the number of TPPs to the numeral

Graph TPPs

Use 2 x 2 graph templates

Use 2 x 3 graph templates

Use 3 x 3 graph templates

Use 3 x 4 graph templates

Create sets of TPPs to graph

Make sets of 1, 2, or 3 TPPs

Place them on the graph

Compare each pair of TPPs

Repeat using TouchNumerals instead of TouchPoints

Transition from TPPs

Match TPPs to foam TouchPoints

Match TPPs to picture cards

Match foam TouchPoints to same-color TouchShapes

Match foam TouchPoints to same shape (different colors)

Identify and extend patterns

Use objects, then pictures, to identify the pattern

Identify and add one more to ABAB patterns with pictures

Identify and add one more to AABAAB patterns with pictures

Create patterns using 2 different objects