

4Northpoint Horizons

CAVS (Content Academic Vocabulary System) Correlated to the New York State Math Assessment Standards

Kindergarten

This document provides a sampling of the extensive math directives offered throughout the *CAVS* program that meet the New York State Math Assessment Standards.

New York State Math Assessment Standards	<i>CAVS</i> Math Elementary K-2 Teacher's Guide Examples/Lessons
Problem Solving Strand	
Students will build new mathematical knowledge through problem solving.	
K.PS.1 Explore, examine, and make observations about a social problem or mathematical situation	Each <i>CAVS</i> math lesson is developed around 5 Easy Steps: Engage, Explore, Explain, Elaborate, and Evaluate . For each lesson, an Activity Placemat engages students to explore, examine, and make observations for many mathematical situations.
K.PS.2 Interpret information correctly, identify the problem, and generate possible solutions	<i>How much space does it take up?</i> Lesson 13 – TG p. 73
Students will solve problems that arise in mathematics and in other contexts.	
K.PS.3 Act out or model with manipulatives activities involving mathematical content from literature and/or story telling	Any of the Concept Posters (1 through 7) will generate discussions involving mathematical content from story telling. Activities from the Activity Placemats (especially Lessons 3, 5, and 7) encourage students to act out and model mathematical content.
K.PS.4 Formulate problems and solutions from everyday situations (e.g., counting the number of children in the class, using the calendar to teach counting).	<i>When is your birthday?</i> Lesson 10 – TG p. 55 Concept Poster 4
Students will apply and adapt a variety of appropriate strategies to solve problems.	
K.PS.5 Use informal counting strategies to find solutions	<i>How do you count?</i> Lesson 1 – TG p. 1
K.PS.6 Experience teacher-directed questioning process to understand problems	The Engage section of Lessons 1 through 24 in the Teacher's Guide (part of the 5 Easy Steps) provide for teacher-directed questioning for all students.
K.PS.7 Compare and discuss ideas for solving a	The Discuss the Activity section of Lessons 1 through 24 in the Teacher's Guide invites students to discuss activities (Activity

New York State Math Assessment Standards	CAVS Math Elementary K-2 Teacher's Guide Examples/Lessons
problem with teacher and/or students to justify their thinking	Placemats 1 – 24) used in individual/group problem solving. The students are asked to compare their observations.
K.PS.8 Use manipulatives (e.g., tiles, blocks) to model the action in problems	<i>How do you count?</i> Lesson 1 – TG p. 1 <i>How do numbers work together?</i> Lesson 3 – TG p. 13 <i>How are objects the same?</i> Lesson 6 – TG p. 31 <i>How much space does it take up?</i> Lesson 13 TG p. 73 Activity placemats: 6,13,14,19, 20
K.PS.9 Use drawings/pictures to model the action in problems	Activity placemats: 2,3,4,6
Students will monitor and reflect on the process of mathematical problem solving.	
K.PS.10 Explain to others how a problem was solved, giving strategies	The Record and Share section of the Record Sheets used in conjunction with each Activity Placemat (1 through 24) allows all students to explain their strategies for problem solving in order to share with others, including their parents.
Reasoning and Proof Strand	
Students will recognize reasoning and proof as fundamental aspects of mathematics.	
K.RP.1 Understand that mathematical statements can be true or false	<i>How are objects the same?</i> Lesson 6 – TG p. 31
Students will make and investigate mathematical conjectures.	
K.RP.2 Investigate the use of knowledgeable guessing as a mathematical tool	<i>How do we solve problems?</i> Lesson 24 – TG p. 139
K.RP.3 Explore guesses, using a variety of objects and manipulatives	Draw a Cube From the Bag - Activity Placemat 23 Bears in a Bag - Activity Placemat 24
Students will develop and evaluate mathematical arguments and proofs.	
K.RP.4 Listen to claims other students make	The Explore and Learn section of Lessons 1 through 24, in the Teacher's Guide, allows students to listen and share their findings from the accompanying activities.
Communication Strand	
Students will organize and consolidate their mathematical thinking through communication.	
K.CM.1 Understand how to organize their thought processes with teacher guidance	The Engage section of Lessons 1 through 24, in the Teacher's Guide, provides for whole group discussion with teacher guidance.
Students will communicate their mathematical thinking coherently and clearly to peers, teachers, and others.	
K.CM.2 Share mathematical ideas through the	Every Activity Placemat (1 – 24) allows students to Record and Share

New York State Math Assessment Standards	CAVS Math Elementary K-2 Teacher's Guide Examples/Lessons
manipulation of objects, drawings, pictures, and verbal explanations	their findings and observations with partners and classmates.
Students will analyze and evaluate the mathematical thinking and strategies of others.	
K.CM.3 Listen to solutions shared by other students	In the Teacher's Guide for Lessons 1 – 24, the Discuss the Activity section invites students to discuss the activity and compare observations with guided questions.
K.CM.4 Formulate mathematically relevant questions with teacher guidance	The Build Background section in the Teacher's Guide for Lessons 1 – 24 supplies various questions for teachers to pose in order to have students formulate their own questions. The Concept Posters and Flip Chart that coincide with these lessons provide additional support.
Students will use the language of mathematics to express mathematical ideas precisely.	
K.CM.5 Use appropriate mathematical terms, vocabulary, and language	Content Academic Vocabulary System (CAVS) stresses vocabulary throughout every lesson with the use of Vocabulary Cards, the Picture Dictionary, the highlighted words on the Flip Chart, and the Concept Web pages provide for vocabulary reinforcement with each lesson.
Connections Strand	
K.CN.1 Recognize the presence of mathematics in their daily lives	The Concept Posters (1 through 8) model everyday situations that are recognizable to students involving all aspects of mathematics.
K.CN.2 Use counting strategies to solve problems in their daily lives	<i>How do you count?</i> Lesson 1 – TG p. 1
K.CN.3 Recognize and apply mathematics to objects and pictures	<i>What are some kinds of numbers?</i> Flip Book – Lesson 2
Representation Strand	
Students will create and use representations to organize, record, and communicate mathematical ideas.	
K.R.1 Use multiple representations, including verbal language, acting out or modeling a situation, and drawing pictures as representations	Dot the Dominos – Activity Placemat 4 Bean Bag Subtraction – Activity Placemat 5 Make a Sorting Chart – Activity Placemat 6 Make an Action Pattern – Activity Placemat 7
K.R.2 Use standard and nonstandard representations	Make Number Cards – Activity Placemat 1 Make A Bear Parade – Activity Placemat 2
Students will use representations to model and interpret physical, social, and mathematical phenomena.	
K.R.3 Use objects to show and understand physical phenomena (e.g., guess the number of cookies in a	Bears in a Bag - Activity Placemat 24

New York State Math Assessment Standards	CAVS Math Elementary K-2 Teacher's Guide Examples/Lessons
package)	
K.R.4 Use objects to show and understand social phenomena (e.g., count and represent sharing cookies between friends)	Concept Poster 1
K.R.5 Use objects to show and understand mathematical phenomena (e.g., draw pictures to show a story problem, show number value using fingers on your hand)	<i>Why do you add numbers?</i> Flip Book – Lesson 4 <i>Why do you subtract numbers?</i> Flip Book – Lesson 5
Number Sense and Operations Strand	
Students will understand numbers, multiple ways of representing numbers, relationships among numbers, and number systems.	
K.N.1 Count the items in a collection and know the last counting word tells how many items are in the collection (1 to 10)	<i>How do you count?</i> Lesson 1 – TG p. 1 Concept Poster 1
K.N.2 Count out (produce) a collection of a specified size 1 to 10	<i>How do you count?</i> Lesson 1 – TG p. 1 Flip Book – Lesson 1
K.N.3 Numerically label a data set of 1 to 5	Make Number Cards – Activity Placemat 1
K.N.4 Verbally count by 1's to 20	<i>How do you Count?</i> Lesson 1 – TG p. 1 Flip Book – Lesson 1 Concept Poster 1
K.N.5 Verbally count backwards from 10	
K.N.6 Represent collections with a finger pattern up to 10	Make a Bear Parade – Activity Placemat 2
K.N.7 Draw pictures or other informal symbols to represent a spoken number up to 10	Make Number Cards – Activity Placemat 1 Concept Poster 1 Flip Book – Lesson 1
K.N.8 Draw pictures or other informal symbols to represent how many in a collection up to 10	Make a Bear Parade – Activity Placemat 2 Concept Poster 1 Flip Book – Lesson 2
K.N.9 Write numbers 1-10 to represent a collection	Make Number Cards – Activity Placemat 1
K.N.10 Visually determine how many more or less, and then using the verbal counting sequence, match and count 1-10	<i>How do numbers work together?</i> Lesson 3 – TG p. 13

New York State Math Assessment Standards	CAVS Math Elementary K-2 Teacher's Guide Examples/Lessons
K.N.11 Use and understand verbal ordinal terms, first to tenth	<i>What are some kinds of numbers?</i> Lesson 2 – TG p. 7
Students will understand meanings of operations and procedures, and how they relate to one another.	
K.N.12 Solve and create addition and subtraction verbal word problems (use counting-based strategies, such as counting on and to ten)	<i>Why do you add numbers?</i> Lesson 4 – TG p. 19 Flip Book – Lesson 4 <i>Why do you subtract numbers?</i> Lesson 5 – TG p. 25 Flip Book – Lesson 5
K.N.13 Determine sums and differences by various means	Dot the Dominos – Activity Placemat 4 Bean Bag Subtraction – Activity Placemat 5
Algebra Strand	
Students will recognize, use, and represent algebraically patterns, relations, and functions.	
K.A.1 Use a variety of manipulatives to create patterns using attributes of color, size, or shape	<i>What makes a pattern?</i> Lesson 7 – TG p. 37
K.A.2 Recognize, describe, extend, and create patterns that repeat (e.g., ABABAB or ABAABAAAB)	Make an Action Pattern – Activity Placemat 7 Flip Chart Lesson 7
Geometry Strand	
Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.	
K.G.1 Describe characteristics and relationships of geometric objects	<i>What are some common shapes?</i> Lesson 19 – TG p. 109 Flip Chart Lesson 19
Students will identify and justify geometric relationships, formally and informally.	
K.G.2 Sort groups of objects by size and size order (increasing and decreasing)	Make a Sorting Chart – Activity Placemat 6
Students will apply transformations and symmetry to analyze problem solving situations.	
K.G.3 Explore vertical and horizontal orientation of objects	<i>Which way do you go?</i> Lesson 18 – TG p. 103
K.G.4 Manipulate two- and three-dimensional shapes to explore symmetry	<i>How can you describe shapes?</i> Lesson 20 – TG p. 115 <i>How can you change shapes?</i> Lesson 21 – TG p. 121
Students will apply coordinate geometry to analyze problem solving situations.	
K.G.5 Understand and use ideas such as over, under, above, below, on, beside, next to, and between	<i>Where are you?</i> Lesson 16 – TG p. 91 <i>Where are you now?</i> Lesson 17 – TG p. 97
Measurement Strand	
Students will determine what can be measured and how, using appropriate methods and formulas.	
K.M.1 Name, discuss, and compare attributes of	Make an Inch Book – Activity Placemat 12

New York State Math Assessment Standards	CAVS Math Elementary K-2 Teacher's Guide Examples/Lessons
length (longer than, shorter than)	
K.M.2 Compare the length of two objects by representing each length with string or a paper strip	<i>How far? How long?</i> Lesson 11 – TG p. 61
K.M.3 Relate specific times such as morning, noon, afternoon, and evening to activities and absence or presence of daylight	<i>How do you tell time?</i> Lesson 9 – TG p. 49 Concept Poster 4
Statistics and Probability Strand	
Students will collect, organize, display, and analyze data.	
K.S.1 Gather data in response to questions posed by the teacher and students	<i>What do you think will happen?</i> Lesson 23 – TG p. 133
K.S.2 Help to make simple pictographs for quantities up to 10, where one picture represents	<i>How can you show facts?</i> Lesson 22 – TG p. 127
K.S.3 Sort and organize objects by two attributes (e.g., color, size, or shape)	<i>How are objects the same?</i> Lesson 6 – TG p. 31 Make a Sorting Chart – Activity Placemat 6
K.S.4 Represent data using manipulatives	Make Number Cards – Activity Placemat 1
K.S.5 Identify more, less, and same amounts from pictographs or concrete models	<i>How do numbers work together?</i> Lesson 3 – TG p. 13