PAVING THE WAY WITH TREADS

GRADES K–3

This document lists the North Carolina learning standards addressed by Paving the Way with Treads, True Robotics' grades K–3 robotics curriculum. Standards are grouped by subject and grade level, with codes and wording as published by the North Carolina Department of Public Instruction.

39	40	15	94
MATH	ELA	CS	TOTAL STANDARDS

MATHEMATICS

39 STANDARDS

Based on the North Carolina state standards

GRADE	CODE	STANDARD
K–3	MP.1	Make sense of problems and persevere in solving them.
K	NC.K.CC.1	Know number names and recognize patterns in the counting sequence by: • Counting to 100 by ones. • Counting to 100 by tens.
K	NC.K.CC.4	Understand the relationship between numbers and quantities. • 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 (one-to-one correspondence). • Recognize that the last number named tells the number of objects counted regardless of their arrangement (cardinality). • State the number of objects in a group, of up to 5 objects, without counting the objects (perceptual subitizing).
K	NC.K.OA.1	Represent addition and subtraction, within 10: • Use a variety of representations such as objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, or expressions. • Demonstrate understanding of addition and subtraction by making connections among representations.
K	NC.K.OA.2	Solve addition and subtraction word problems, within 10, using objects or drawings to represent the problem, when solving: • Add to/Take From-Result Unknown • Put Together/ Take Apart (Total Unknown and Two Addends Unknown)
K	NC.K.MD.1	Describe measurable attributes of objects; and describe several different measurable attributes of a single object.
K	NC.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.
K	NC.K.MD.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

© 2026 True Robotics, Inc. All rights reserved.

True Robotics, Inc. · 49 Canterbury Street, Suite 700, Worcester, MA 01610 · truerobotics.org · info@truerobotics.org · (774) 276-9820

GRADE	CODE	STANDARD
K	NC.K.G.1	Describe objects in the environment using names of shapes, and describe the relative positions of objects using positional terms.
K	NC.K.G.2	Correctly name squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres regardless of their orientations or overall size.
1	MP.2	Reason abstractly and quantitatively.
1	NC.1.OA.1	Represent and solve addition and subtraction word problems, within 20, with unknowns, by using objects, drawings, and equations with a symbol for the unknown number to represent the problem, when solving: • Add to/Take from-Change Unknown • Put together/Take Apart-Addend Unknown • Compare-Difference Unknown
1	NC.1.OA.2	Represent and solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, by using objects, drawings, and equations with a symbol for the unknown number.
1	NC.1.NBT.2	Understand that the two digits of a two-digit number represent amounts of tens and ones.
1	NC.1.NBT.3	Compare two two-digit numbers based on the value of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
1	NC.1.MD.1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
1	NC.1.MD.2	Measure lengths with non-standard units. • Express the length of an object as a whole number of non-standard length units. • Measure by laying multiple copies of a shorter object (the length unit) end to end (iterating) with no gaps or overlaps.
1	NC.1.MD.4	Organize, represent, and interpret data with up to three categories. • Ask and answer questions about the total number of data points. • Ask and answer questions about how many in each category. • Ask and answer questions about how many more or less are in one category than in another.
1	NC.1.G.1	Distinguish between defining and non-defining attributes and create shapes with defining attributes by: • Building and drawing triangles, rectangles, squares, trapezoids, hexagons, circles. • Building cubes, rectangular prisms, cones, spheres, and cylinders.
1	NC.1.G.2	Create composite shapes by: • Making a two-dimensional composite shape using rectangles, squares, trapezoids, triangles, and half-circles naming the components of the new shape. • Making a three-dimensional composite shape using cubes, rectangular prisms, cones, and cylinders, naming the components of the new shape.
2	NC.2.OA.1	Represent and solve addition and subtraction word problems, within 100, with unknowns in all positions, by using representations and equations with a symbol for the unknown number to represent the problem, when solving: • One-Step problems: o Add to/Take from-Start Unknown o Compare-Bigger Unknown o Compare-Smaller Unknown • Two-Step problems involving single digits: o Add to/Take from- Change Unknown o Add to/Take From- Result Unknown
2	NC.2.NBT.1	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.
2	NC.2.NBT.3	Read and write numbers, within 1,000, using base-ten numerals, number names, and expanded form.

© 2026 True Robotics, Inc. All rights reserved.

True Robotics, Inc. · 49 Canterbury Street, Suite 700, Worcester, MA 01610 · truerobotics.org · info@truerobotics.org · (774) 276-9820

GRADE	CODE	STANDARD
2	NC.2.NBT.5	Demonstrate fluency with addition and subtraction, within 100, by: • Flexibly using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. • Comparing addition and subtraction strategies, and explaining why they work. • Selecting an appropriate strategy in order to efficiently compute sums and differences.
2	NC.2.MD.1	Measure the length of an object in standard units by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
2	NC.2.MD.3	Estimate lengths in using standard units of inches, feet, yards, centimeters, and meters.
2	NC.2.MD.8	Solve word problems involving: • Quarters, dimes, nickels, and pennies within 99¢, using ¢ symbols appropriately. • Whole dollar amounts, using the $ symbol appropriately.
2	NC.2.MD.10	Organize, represent, and interpret data with up to four categories. • Draw a picture graph and a bar graph with a single-unit scale to represent a data set. • Solve simple put-together, take-apart, and compare problems using information presented in a picture and a bar graph.
2	NC.2.G.1	Recognize and draw triangles, quadrilaterals, pentagons, and hexagons, having specified attributes; recognize and describe attributes of rectangular prisms and cubes.
2	NC.2.G.3	Partition circles and rectangles into two, three, or four equal shares. • Describe the shares using the words halves, thirds, half of, a third of, fourths, fourth of, quarter of. • Describe the whole as two halves, three thirds, four fourths. • Explain that equal shares of identical wholes need not have the same shape.
3	NC.3.OA.1	For products of whole numbers with two factors up to and including 10: • Interpret the factors as representing the number of equal groups and the number of objects in each group. • Illustrate and explain strategies including arrays, repeated addition, decomposing a factor, and applying the commutative and associative properties.
3	NC.3.OA.3	Represent, interpret, and solve one-step problems involving multiplication and division. • Solve multiplication word problems with factors up to and including 10. Represent the problem using arrays, pictures, and/or equations with a symbol for the unknown number to represent the problem. • Solve division word problems with a divisor and quotient up to and including 10. Represent the problem using arrays, pictures, repeated subtraction and/or equations with a symbol for the unknown number to represent the problem.
3	NC.3.OA.7	Demonstrate fluency with multiplication and division with factors, quotients and divisors up to and including 10. • Know from memory all products with factors up to and including 10. • Illustrate and explain using the relationship between multiplication and division. • Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
3	NC.3.NF.1	Interpret unit fractions with denominators of 2, 3, 4, 6, and 8 as quantities formed when a whole is partitioned into equal parts; • Explain that a unit fraction is one of those parts. • Represent and identify unit fractions using area and length models.
3	NC.3.NF.2	Interpret fractions with denominators of 2, 3, 4, 6, and 8 using area and length models. • Using an area model, explain that the numerator of a fraction represents the number of equal parts of the unit fraction. • Using a number line, explain that the numerator of a fraction represents the number of lengths of the unit fraction from 0.

© 2026 True Robotics, Inc. All rights reserved.

True Robotics, Inc. · 49 Canterbury Street, Suite 700, Worcester, MA 01610 · truerobotics.org · info@truerobotics.org · (774) 276-9820

GRADE	CODE	STANDARD
3	NC.3.MD.2	Solve problems involving customary measurement. • Estimate and measure lengths in customary units to the quarter-inch and half-inch, and feet and yards to the whole unit. • Estimate and measure capacity and weight in customary units to a whole number: cups, pints, quarts, gallons, ounces, and pounds. • Add, subtract, multiply, or divide to solve one-step word problems involving whole number measurements of length, weight, and capacity in the same customary units.
3	NC.3.MD.3	Represent and interpret scaled picture and bar graphs: • Collect data by asking a question that yields data in up to four categories. • Make a representation of data and interpret data in a frequency table, scaled picture graph, and/or scaled bar graph with axes provided. • Solve one and two-step "how many more" and "how many less" problems using information from these graphs
3	NC.3.MD.5	Find the area of a rectangle with whole-number side lengths by tiling without gaps or overlaps and counting unit squares.
3	NC.3.G.1	Reason with two-dimensional shapes and their attributes. • Investigate, describe, and reason about composing triangles and quadrilaterals and decomposing quadrilaterals. • Recognize and draw examples and non-examples of types of quadrilaterals including rhombuses, rectangles, squares, parallelograms, and trapezoids.

ENGLISH LANGUAGE ARTS

40 STANDARDS

Based on the North Carolina state standards

GRADE	CODE	STANDARD
K	RF.K.1c	Understand that words are separated by spaces in print.
K	RF.K.3a	Recognize and produce rhyming words.
K	RF.K.4b	Associate the long and short sounds with common spellings (graphemes) for the five major vowels.
K	RF.K.4c	Read common high-frequency words by sight.
K	SL.K.2	Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.
K	SL.K.5	Add drawings or other visual displays to descriptions as desired to provide additional detail.
K	L.K.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing; demonstrate proficiency within the K-1 conventions continuum.
K	L.K.5	With guidance and support from adults, explore nuances in word meanings.
1	RF.1.3a	Distinguish long from short vowel sounds in spoken single-syllable words.
1	RF.1.3c	Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words.
1	RF.1.4	Know and apply grade-level phonics and word analysis skills in decoding words.
1	RF.1.4b	Decode regularly spelled one-syllable words.

© 2026 True Robotics, Inc. All rights reserved.

True Robotics, Inc. · 49 Canterbury Street, Suite 700, Worcester, MA 01610 · truerobotics.org · info@truerobotics.org · (774) 276-9820

GRADE	CODE	STANDARD
1	RF.1.4c	Know final -e and common vowel team conventions for representing long vowel sounds.
1	RF.1.4g	Recognize and read grade-appropriate irregularly spelled words.
1	RF.1.5	Read with sufficient accuracy and fluency to support comprehension.
1	SL.1.2	Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
1	SL.1.4	Produce complete sentences to describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
1	L.1.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing; demonstrate proficiency within the K-1 conventions continuum.
2	RF.2.4a	Distinguish long and short vowels when reading regularly spelled one-syllable words.
2	RF.2.4b	Know spelling-sound correspondences for additional common vowel teams.
2	W.2.1	Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words to connect opinion and reasons, and provide a concluding statement or section.
2	W.2.3	Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal transition words to signal event order, and provide a sense of closure.
2	W.2.3b	With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.
2	SL.2.1c	Ask for clarification and further explanation as needed about the topics and texts under discussion.
2	SL.2.2	Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
2	SL.2.4	Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent and complete sentences.
2	SL.2.5	Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.
2	L.2.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking; demonstrate proficiency within the 2-3 grammar continuum.
2	L.2.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing; demonstrate proficiency within the 2-3 conventions continuum.
2	L.2.4	Determine and/or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies: context clues, word parts, word relationships, and reference materials.
2	L.2.5	Demonstrate understanding of nuances in word meanings.
3	RF.3.4	Know and apply grade-level phonics and word analysis skills in decoding words.
3	RL.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

© 2026 True Robotics, Inc. All rights reserved.

True Robotics, Inc. · 49 Canterbury Street, Suite 700, Worcester, MA 01610 · truerobotics.org · info@truerobotics.org · (774) 276-9820

GRADE	CODE	STANDARD
3	RL.3.2	Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.
3	W.3.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
3	W.3.3a	Organize information and ideas around a topic to plan and prepare to write.
3	W.3.3f	With guidance and support from peers and adults, develop and strengthen writing as needed by revising and editing, with consideration to task and purpose.
3	SL.3.2	Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
3	L.3.4	Determine and/or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies: context clues, word parts, word relationships, and reference materials.
3	L.3.5	Demonstrate understanding of nuances in word meanings.

COMPUTER SCIENCE

15 STANDARDS

Based on the North Carolina state standards

GRADE	CODE	STANDARD
K–2	K2-CS-03	Operate appropriate software to perform a variety of tasks.
K–2	K2-AP-01	Model daily processes with algorithms to complete tasks.
K–2	K2-AP-03	Develop programs with sequences and simple loops to express ideas or address a problem.
K–2	K2-AP-04	Decompose the steps needed to solve a problem into a precise sequence of instructions.
K–2	K2-IC-01	Compare how people live and work before and after the implementation or adoption of new computing technology.
3	35-CS-01	Evaluate the features available on digital devices to perform a variety of classroom tasks.
3	35-DA-03	Organize and present collected data visually to highlight relationships and support a claim.
3	35-AP-01	Create multiple algorithms for the same task to determine which is the most accurate and efficient.
3	35-AP-03	Construct programs that include sequences.
3	35-AP-04	Construct programs using simple loops.
3	35-AP-05	Construct programs that implement conditionals.
3	35-AP-08	Apply an iterative process to the development of a program by including diverse perspectives and considering user preferences.
3	35-AP-10	Identify and debug errors in an algorithm or program to ensure it runs as intended.

© 2026 True Robotics, Inc. All rights reserved.

True Robotics, Inc. · 49 Canterbury Street, Suite 700, Worcester, MA 01610 · truerobotics.org · info@truerobotics.org · (774) 276-9820

GRADE	CODE	STANDARD
3	35-AP-11	Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.
3	35-AP-12	Describe choices made during program development using code comments, presentations, and demonstrations.

SOURCES & NOTES

- The official mathematics, English language arts and computer science standards for North Carolina, as published by the North Carolina Department of Public Instruction.
- Codes and standard wording are reproduced from the official standards documents. Clarification statements, examples and assessment boundaries are omitted.
- Grade shows the grade level at which True Robotics lessons address each standard. A range (for example K–2) marks a standard written for a grade band.
- Standards text remains the property of its publisher and is reproduced here for alignment reference only.
- A lesson-level crosswalk is available on request at info@truerobotics.org.
- North Carolina's science standards for grades K–3 include no engineering design standards, which is what these lessons teach, so that section is omitted.

© 2026 True Robotics, Inc. All rights reserved.

True Robotics, Inc. · 49 Canterbury Street, Suite 700, Worcester, MA 01610 · truerobotics.org · info@truerobotics.org · (774) 276-9820