

PAVING THE WAY WITH TREADS

GRADES K-3

This document lists the Texas 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 Texas Education Agency.

51

MATH

45

ELA

18

CS

6

SCIENCE

120

TOTAL STANDARDS

MATHEMATICS

51 STANDARDS

Based on the Texas state standards

GRADE	CODE	STANDARD
K	111.2(b)(1)(B)	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
K	111.2(b)(2)(C)	count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in the set regardless of their arrangement or order
K	111.2(b)(3)(A)	model the action of joining to represent addition and the action of separating to represent subtraction
K	111.2(b)(3)(B)	solve word problems using objects and drawings to find sums up to 10 and differences within 10
K	111.2(b)(5)	recite numbers up to at least 100 by ones and tens beginning with any given number
K	111.2(b)(6)(B)	identify three-dimensional solids, including cylinders, cones, spheres, and cubes, in the real world
K	111.2(b)(6)(E)	classify and sort a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size
K	111.2(b)(7)(A)	give an example of a measurable attribute of a given object, including length, capacity, and weight
K	111.2(b)(7)(B)	compare two objects with a common measurable attribute to see which object has more of/less of the attribute and describe the difference
K	111.2(b)(8)(A)	collect, sort, and organize data into two or three categories
1	111.3(b)(1)(B)	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution

GRADE	CODE	STANDARD
1	111.3(b)(1)(D)	communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate
1	111.3(b)(2)(B)	use concrete and pictorial models to compose and decompose numbers up to 120 in more than one way as so many hundreds, so many tens, and so many ones
1	111.3(b)(2)(E)	use place value to compare whole numbers up to 120 using comparative language
1	111.3(b)(2)(G)	represent the comparison of two numbers to 100 using the symbols $>$, $<$, or $=$
1	111.3(b)(3)(B)	use objects and pictorial models to solve word problems involving joining, separating, and comparing sets within 20 and unknowns as any one of the terms in the problem such as $2 + 4 = []$; $3 + [] = 7$; and $5 = [] - 3$
1	111.3(b)(5)(G)	apply properties of operations to add and subtract two or three numbers
1	111.3(b)(6)(B)	distinguish between attributes that define a two-dimensional or three-dimensional figure and attributes that do not define the shape
1	111.3(b)(6)(C)	create two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons
1	111.3(b)(6)(F)	compose two-dimensional shapes by joining two, three, or four figures to produce a target shape in more than one way if possible
1	111.3(b)(7)(B)	illustrate that the length of an object is the number of same-size units of length that, when laid end-to-end with no gaps or overlaps, reach from one end of the object to the other
1	111.3(b)(8)(A)	collect, sort, and organize data in up to three categories using models/representations such as tally marks or T-charts
1	111.3(b)(8)(C)	draw conclusions and generate and answer questions using information from picture and bar-type graphs
2	111.4(b)(1)(B)	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
2	111.4(b)(2)(A)	use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones
2	111.4(b)(2)(B)	use standard, word, and expanded forms to represent numbers up to 1,200
2	111.4(b)(3)(A)	partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words
2	111.4(b)(4)(B)	add up to four two-digit numbers and subtract two-digit numbers using mental strategies and algorithms based on knowledge of place value and properties of operations
2	111.4(b)(4)(C)	solve one-step and multi-step word problems involving addition and subtraction within 1,000 using a variety of strategies based on place value, including algorithms
2	111.4(b)(5)(A)	determine the value of a collection of coins up to one dollar
2	111.4(b)(5)(B)	use the cent symbol, dollar sign, and the decimal point to name the value of a collection of coins
2	111.4(b)(7)(C)	represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem

GRADE	CODE	STANDARD
2	111.4(b)(8)(A)	create two-dimensional shapes based on given attributes, including number of sides and vertices
2	111.4(b)(8)(C)	classify and sort polygons with 12 or fewer sides according to attributes, including identifying the number of sides and number of vertices
2	111.4(b)(9)(D)	determine the length of an object to the nearest marked unit using rulers, yardsticks, meter sticks, or measuring tapes
2	111.4(b)(9)(E)	determine a solution to a problem involving length, including estimating lengths
2	111.4(b)(9)(F)	use concrete models of square units to find the area of a rectangle by covering it with no gaps or overlaps, counting to find the total number of square units, and describing the measurement using a number and the unit
2	111.4(b)(10)(B)	organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more
2	111.4(b)(10)(C)	write and solve one-step word problems involving addition or subtraction using data represented within pictographs and bar graphs with intervals of one
3	111.5(b)(1)(B)	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
3	111.5(b)(3)(B)	determine the corresponding fraction greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 given a specified point on a number line
3	111.5(b)(3)(C)	explain that the unit fraction $\frac{1}{b}$ represents the quantity formed by one part of a whole that has been partitioned into b equal parts where b is a non-zero whole number
3	111.5(b)(3)(D)	compose and decompose a fraction $\frac{a}{b}$ with a numerator greater than zero and less than or equal to b as a sum of parts $\frac{1}{b}$
3	111.5(b)(4)(D)	determine the total number of objects when equally-sized groups of objects are combined or arranged in arrays up to 10 by 10
3	111.5(b)(4)(G)	use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties
3	111.5(b)(4)(K)	solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts
3	111.5(b)(5)(D)	determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is either a missing factor or product
3	111.5(b)(6)(B)	use attributes to recognize rhombuses, parallelograms, trapezoids, rectangles, and squares as examples of quadrilaterals and draw examples of quadrilaterals that do not belong to any of these subcategories
3	111.5(b)(7)(A)	represent fractions of halves, fourths, and eighths as distances from zero on a number line
3	111.5(b)(8)(A)	summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals
3	111.5(b)(8)(B)	solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals

ENGLISH LANGUAGE ARTS AND READING

45 STANDARDS

Based on the Texas state standards

GRADE	CODE	STANDARD
K	110.2(b)(1)(A)	listen actively and ask questions to understand information and answer questions using multi-word responses
K	110.2(b)(2)(A)(i)	demonstrate phonological awareness by: identifying and producing rhyming words
K	110.2(b)(2)(B)(i)	demonstrate and apply phonetic knowledge by: identifying and matching the common sounds that letters represent
K	110.2(b)(2)(B)(iv)	demonstrate and apply phonetic knowledge by: identifying and reading at least 25 high-frequency words from a research-based list
K	110.2(b)(2)(D)(iii)	demonstrate print awareness by: recognizing that sentences are comprised of words separated by spaces and recognizing word boundaries
K	110.2(b)(3)(C)	identify and use words that name actions; directions; positions; sequences; categories such as colors, shapes, and textures; and locations
K	110.2(b)(10)(C)	revise drafts by adding details in pictures or words
K	110.2(b)(10)(D)	edit drafts with adult assistance using standard English conventions
1	110.3(b)(1)(A)	listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses
1	110.3(b)(1)(C)	share information and ideas about the topic under discussion, speaking clearly at an appropriate pace and using the conventions of language
1	110.3(b)(2)(A)(iii)	demonstrate phonological awareness by: distinguishing between long and short vowel sounds in one-syllable words
1	110.3(b)(2)(A)(vii)	demonstrate phonological awareness by: segmenting spoken one-syllable words of three to five phonemes into individual phonemes, including words with initial and/or final consonant blends
1	110.3(b)(2)(B)	demonstrate and apply phonetic knowledge by
1	110.3(b)(2)(B)(i)	demonstrate and apply phonetic knowledge by: decoding words in isolation and in context by applying common letter sound correspondences
1	110.3(b)(2)(B)(iii)	demonstrate and apply phonetic knowledge by: decoding words with closed syllables; open syllables; VCe syllables; vowel teams, including vowel digraphs and diphthongs; and r-controlled syllables
1	110.3(b)(2)(B)(vi)	demonstrate and apply phonetic knowledge by: identifying and reading at least 100 high-frequency words from a research-based list
1	110.3(b)(3)(D)	identify and use words that name actions, directions, positions, sequences, categories, and locations
1	110.3(b)(4)	use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text
1	110.3(b)(11)(D)	edit drafts using standard English conventions

GRADE	CODE	STANDARD
2	110.4(b)(1)(A)	listen actively, ask relevant questions to clarify information, and answer questions using multi-word responses
2	110.4(b)(1)(C)	share information and ideas that focus on the topic under discussion, speaking clearly at an appropriate pace and using the conventions of language
2	110.4(b)(2)(B)(i)	demonstrate and apply phonetic knowledge by: decoding words with short, long, or variant vowels, trigraphs, and blends
2	110.4(b)(2)(B)(iii)	demonstrate and apply phonetic knowledge by: decoding multisyllabic words with closed syllables; open syllables; VCe syllables; vowel teams, including digraphs and diphthongs; r-controlled syllables; and final stable syllables
2	110.4(b)(3)(B)	use context within and beyond a sentence to determine the meaning of unfamiliar words
2	110.4(b)(7)(D)	retell and paraphrase texts in ways that maintain meaning and logical order
2	110.4(b)(11)(C)	revise drafts by adding, deleting, or rearranging words, phrases, or sentences
2	110.4(b)(11)(D)	edit drafts using standard English conventions
2	110.4(b)(11)(D)(iii)	edit drafts using standard English conventions, including: singular, plural, common, and proper nouns
2	110.4(b)(11)(D)(x)	edit drafts using standard English conventions, including: end punctuation, apostrophes in contractions, and commas with items in a series and in dates
2	110.4(b)(12)(A)	compose literary texts, including personal narratives and poetry
2	110.4(b)(13)(G)	use an appropriate mode of delivery, whether written, oral, or multimodal, to present results
3	110.5(b)(2)(A)	demonstrate and apply phonetic knowledge by
3	110.5(b)(3)(B)	use context within and beyond a sentence to determine the meaning of unfamiliar words and multiple-meaning words
3	110.5(b)(3)(D)	identify, use, and explain the meaning of antonyms, synonyms, idioms, homophones, and homographs in a text
3	110.5(b)(6)(B)	generate questions about text before, during, and after reading to deepen understanding and gain information
3	110.5(b)(7)(C)	use text evidence to support an appropriate response
3	110.5(b)(7)(D)	retell and paraphrase texts in ways that maintain meaning and logical order
3	110.5(b)(8)(A)	infer the theme of a work, distinguishing theme from topic
3	110.5(b)(9)(D)(i)	recognize characteristics and structures of informational text, including: the central idea with supporting evidence
3	110.5(b)(11)(A)	plan a first draft by selecting a genre for a particular topic, purpose, and audience using a range of strategies such as brainstorming, freewriting, and mapping
3	110.5(b)(11)(C)	revise drafts to improve sentence structure and word choice by adding, deleting, combining, and rearranging ideas for coherence and clarity
3	110.5(b)(11)(D)	edit drafts using standard English conventions

GRADE	CODE	STANDARD
3	110.5(b)(11)(D)(x)	edit drafts using standard English conventions, including: punctuation marks, including apostrophes in contractions and possessives and commas in compound sentences and items in a series
3	110.5(b)(12)(A)	compose literary texts, including personal narratives and poetry, using genre characteristics and craft
3	110.5(b)(12)(C)	compose argumentative texts, including opinion essays, using genre characteristics and craft

TECHNOLOGY APPLICATIONS

18 STANDARDS

Based on the Texas state standards

GRADE	CODE	STANDARD
K	126.1(c)(1)(C)	identify algorithms (step-by-step instructions) using a sequential process such as first, next, then, and last
K	126.1(c)(2)	create a sequence of code with or without technology such as solving a maze using drag-and-drop programming or creating step-by-step directions for student movement to a specific location
K	126.1(c)(6)(A)	demonstrate acceptable use of digital resources and devices as outlined in local policies or acceptable use policy (AUP)
K	126.1(c)(8)(A)	use a variety of applications, devices, and online learning environments to engage with content
K	126.1(c)(8)(C)	perform software application functions such as opening an application and modifying, printing, and saving digital artifacts using a variety of developmentally appropriate digital tools and resources
1	126.2(c)(1)(C)	create a simple algorithm (step-by-step instructions) for an everyday task
1	126.2(c)(4)	identify examples of how technology has impacted different communities
1	126.2(c)(9)(A)	select and use a variety of applications, devices, and online learning environments to create an original product
2	126.3(c)(1)(A)	identify and communicate a problem or task and break down (decompose) multiple solutions into sequential steps
2	126.3(c)(1)(D)	create and troubleshoot simple algorithms (step-by-step instructions) that include conditionals such as if-then statements as they apply to an everyday task
2	126.3(c)(10)(A)	select and use a variety of applications, devices, and online learning environments to create and share content
2	126.3(c)(10)(C)	operate a variety of developmentally appropriate digital tools and resources to perform software application functions such as reviewing digital artifacts and designing solutions to problems
3	126.8(c)(1)(D)	debug simple algorithms (set of procedures) by identifying and removing errors
3	126.8(c)(2)(B)	use a design process to create programs that include sequences, loops, and conditionals to express ideas or address a problem

GRADE	CODE	STANDARD
3	126.8(c)(5)(A)	identify and collect numerical data such as the price of goods or temperature
3	126.8(c)(6)	analyze data in graphs to identify and discuss trends and inferences
3	126.8(c)(7)	use digital tools to communicate and publish results to inform an intended audience
3	126.8(c)(8)(C)	define digital collaboration

SCIENCE

6 STANDARDS

Based on the Texas state standards

GRADE	CODE	STANDARD
1	112.3(b)(1)(A)	ask questions and define problems based on observations or information from text, phenomena, models, or investigations
1	112.3(b)(1)(B)	use scientific practices to plan and conduct simple descriptive investigations and use engineering practices to design solutions to problems
1	112.3(b)(1)(G)	develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
2	112.4(b)(2)(D)	evaluate a design or object using criteria to determine if it works as intended
3	112.5(b)(1)(B)	use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
3	112.5(b)(2)(D)	evaluate a design or object using criteria

SOURCES & NOTES

- The official mathematics, English language arts, computer science and science standards for Texas, as published by the Texas Education Agency.
- 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.
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- A lesson-level crosswalk is available on request at info@truerobotics.org.