

PAVING THE WAY WITH TREADS

GRADES K-3

This document lists the Arkansas 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 Arkansas Division of Elementary & Secondary Education.

44

MATH

44

ELA

14

CS

5

SCIENCE

107

TOTAL STANDARDS

MATHEMATICS

44 STANDARDS

Based on the Arkansas state standards

GRADE	CODE	STANDARD
K	K.NPV.1	Count to 100 by ones and tens; count forward by ones from any given number up to 100.
K	K.NPV.2	Count a set of objects up to 20 using one-to-one correspondence, demonstrating that the last number stated indicates the number of objects in the set regardless of the arrangement.
K	K.CAR.1	Use objects, fingers, mental images, drawings, sounds, acting out situations, or verbal explanations to represent addition and subtraction from 0 to 10.
K	K.CAR.5	Solve real-world problems involving addition and subtraction within 10, using objects, drawings, or equations to represent the problem.
K	K.GM.1	Describe the positions of objects and geometric shapes in the environment.
K	K.GM.2	Name shapes correctly regardless of their orientation or overall size.
K	K.GM.6	Make direct comparisons of the length, capacity, weight, and temperature of objects, recognizing which object is shorter/longer, lighter/heavier, warmer/cooler, or holds more.
K	K.DA.1	Collect, sort, and organize data into two or three categories, using real-object graphs and picture graphs.
1	1.NPV.3	Explain the place value of ones and tens in two-digit numbers, using concrete models, diagrams, numbers, or words.
1	1.NPV.7	Compare two two-digit numbers using symbols ($<$, $=$, $>$) based on the value of tens and ones in the given numbers.
1	1.CAR.6	Solve real-world problems involving addition and subtraction within 20.
1	1.CAR.7	Solve real-world problems involving addition of three whole numbers whose sum is less than or equal to 20.

GRADE	CODE	STANDARD
1	1.GM.1	Understand the difference between defining attributes (e.g., triangles are closed and three-sided shapes) and non-defining attributes (e.g., color, orientation, overall size), using that understanding to build and draw shapes that exhibit defining attributes.
1	1.GM.2	Create a composite shape using two-dimensional or three-dimensional shapes.
1	1.GM.3	Express the length of an object as a whole number of units by laying multiple copies of a shorter object end-to-end, understanding that the length of one object is equal to the number of same-size units that span the object with no gaps or overlaps.
1	1.GM.4	Order three objects by their length, indirectly comparing the lengths of two objects by using a third object.
1	1.DA.1	Organize, represent, and interpret data with up to three categories (e.g., tally tables, picture graphs, bar graphs).
1	1.DA.2	Ask and answer questions about the total number represented such as how many in each category and how many more or less in one category compared to another.
2	2.NPV.2	Identify the value of hundreds, tens, and ones place in a three-digit number.
2	2.NPV.3	Read, write, and represent whole numbers up to 1,000 using concrete models or drawings, number names, and a variety of expanded forms.
2	2.NPV.6	Partition circles and rectangles into two, three, or four equal shares, describing the shares using the words halves, thirds, and fourths (or quarters).
2	2.NPV.7	Recognize that equal shares of identical wholes need not have the same shape.
2	2.CAR.2	Use computational fluency to add and subtract within 100 using strategies based on place value, properties of operations, or the relationship between addition and subtraction.
2	2.CAR.7	Solve one and two-step real-world problems involving addition and subtraction within 100 in situations of adding to, taking from, putting together, taking apart, and comparing unknowns in all positions.
2	2.GM.1	Identify, describe, and draw two-dimensional shapes.
2	2.GM.2	Identify and describe three-dimensional shapes based on the shape, number of faces, number of edges, and number of vertices.
2	2.GM.3	Select appropriate measurement tools to estimate and measure the length of an object to the nearest whole inch or whole centimeters.
2	2.GM.8	Partition a rectangle into rows and columns of same-size squares, counting the total number of squares to find the area.
2	2.GM.12	Count collections of mixed coins and solve real-world problems involving quarters, dimes, nickels, and pennies within 99¢ and whole dollar amounts.
2	2.DA.1	Use bar graphs, picture graphs, and line plots to organize and represent data, interpreting data with up to four categories.
2	2.DA.2	Ask and answer simple put together, take apart, and compare problems, using information presented in the bar graphs, picture graphs, and line plots.
3	3.NPV.7	Partition squares, regular hexagons, and equilateral triangles into parts with equal shares, explaining the shares of each part as a unit fraction of the whole.

GRADE	CODE	STANDARD
3	3.NPV.8	Identify and represent a unit fraction as a number on the number line.
3	3.NPV.9	Identify and represent a non-unit fraction as a number on the number line, including fractions greater than one.
3	3.NPV.10	Decompose and compose a non-unit fraction a/b as the quantity formed by the sum of unit fractions.
3	3.CAR.3	Apply properties of operations as strategies to multiply and divide.
3	3.CAR.6	Solve real-world problems using multiplication and division within 100 involving equal groups, arrays, partitive and measurement division.
3	3.CAR.8	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
3	3.GM.1	Understand that quadrilaterals in different categories may share attributes; those attributes (e.g., four equivalent sides) can define a larger category (e.g., quadrilaterals) or subcategory (e.g., rhombus and square).
3	3.GM.3	Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, identifying and/or drawing examples of quadrilaterals that do not belong to any of these subcategories.
3	3.GM.4	Measure lengths of objects to the nearest half and quarter inch, using a ruler.
3	3.GM.5	Describe area as the number of unit squares that cover a plane figure without gaps and overlaps.
3	3.DA.1	Represent a data set with multiple categories, using a scaled picture graph, scaled bar graph, and a line plot.
3	3.DA.2	Solve one and two-step problems, using categorical data represented with a scaled picture graph, scaled bar graph, and a line plot.

ENGLISH LANGUAGE ARTS

44 STANDARDS

Based on the Arkansas state standards

GRADE	CODE	STANDARD
K	K.FR.3.CP	Point to words, using one-to-one correspondence to demonstrate that words are separated by spaces.
K	K.FR.5.PA	Isolate and pronounce the initial, medial vowel, and final sounds in three sound words.
K	K.FR.9.PD	Decode one-syllable words with single consonants and all short vowels (e.g., bag, sip, web, hog, cut).
K	K.FR.11.PD	Decode one-syllable words with single consonants and final long vowels (e.g., we, go).
K	K.FR.12.PD	Read high-frequency words.
K	K.FR.16.PE	Encode words phonetically, drawing on knowledge of sound-letter relationships.
K	K.W.6.P	Edit writing to include grade-appropriate conventions for publishing (e.g., capitalize the first word in the sentence, capitalize the pronoun "I," use end punctuation marks).

GRADE	CODE	STANDARD
K	K.CC.2.OL	Ask and answer questions orally about what a speaker says to gather additional information and clarify understanding.
K	K.CC.4.P	Use visual displays to provide additional detail.
1	1.FR.4.PD	Decode one-syllable words with consonant clusters and predictable vowel patterns (e.g., blast, spell, dry, flake, star, swerve).
1	1.FR.6.PD	Decode one-syllable words with common vowel teams (e.g., rain, play; seed, beach; high, pie; boat, snow, toe; book; new, moon).
1	1.FR.9.PD	Decode two-syllable base words with grade level letter-sound correspondences (e.g., napkin, cupcake, poodle, super).
1	1.FR.10.PD	Read high-frequency words.
1	1.FR.11.PD	Decode words with inflectional suffixes (e.g., -ed, -ing, -s/es, -er).
1	1.FR.17.PE	Encode one-syllable words with initial or medial VCe patterns (e.g., use, lake, slime, choke, these).
1	1.FR.20.PE	Encode words phonetically, drawing on knowledge of sound-letter relationships.
1	1.RF.24.F	Orally read texts with accuracy, automaticity, and expression at an appropriate rate to support comprehension, self-correcting as necessary.
1	1.W.8.P	Edit writing to include K-1 language conventions for publishing.
1	1.CC.2.OL	Ask and answer questions orally about what a speaker says to gather additional information and clarify understanding.
1	1.CC.3.P	Use relevant details to express ideas and feelings when orally describing people, places, things, and events.
2	2.FR.1.PD	Decode one-syllable words with vowel teams (e.g., haul, straw, clue, chief, key, bread).
2	2.RC.3.RF	Retell (orally or in writing) a text read aloud including main idea and key details to demonstrate understanding of the central message or topic.
2	2.V.2	Use sentence-level clues to identify the meaning of words or phrases.
2	2.W.1.S	Write an opinion piece about a topic or text with details to support the opinion.
2	2.W.3.S	Write a narrative, using a logical sequence of events.
2	2.W.7.P	Revise writing to expand and combine simple sentences to create compound sentences.
2	2.W.8.P	Edit writing to include K-2 language conventions for publishing.
2	2.CC.2.OL	Ask and answer questions about what a speaker says to gather additional information and clarify understanding.
2	2.CC.3.P	Use relevant, descriptive details to orally share a story or experience that includes appropriate facts.
2	2.CC.4.P	Use visual displays to clarify ideas, thoughts, and feelings.
2	2.L.2.S	Use regular and irregular plural nouns (e.g., branches, elves; geese, sheep).
2	2.L.3.S	Use singular possessive common and proper nouns.

GRADE	CODE	STANDARD
3	3.FR.2.PD	Decode multisyllable base words with grade-level letter-sound correspondences (e.g., neighbor, suitcase, fascinate, suggest).
3	3.FR.3.PD	Decode words, using knowledge of most common Latin prefixes, bases, and suffixes including inflectional and derivational suffixes.
3	3.RC.1.RF	Ask questions about key details in a text.
3	3.RC.2.RF	Answer questions about key details in a text.
3	3.RC.3.RF	Summarize multi-paragraph texts, providing key details to demonstrate understanding of the central message or topic.
3	3.V.1	Determine or clarify the meaning of words and phrases in a text read aloud or independently.
3	3.V.4	Distinguish shades of meaning among related words.
3	3.W.3.S	Write a narrative with a logical plot (sequence of events, characters, and setting).
3	3.W.7.P	Plan and revise writing, using words, phrases, and sentences for effect.
3	3.W.8.P	Edit writing to include K-3 language conventions for publishing.
3	3.L.2.S	Use collective nouns (e.g., group, flock, herd).
3	3.L.16.S	Form contractions, using an apostrophe.

COMPUTER SCIENCE

14 STANDARDS

Based on the Arkansas state standards

GRADE	CODE	STANDARD
K, 1, 3	4.2.1	Identify common digital tools (e.g., laptop, iPads) and their on-screen elements (e.g., icons, buttons) that aid in learning, creativity, and productivity.
K-1	2.2.1	Replicate a given sequence (e.g., recreate a building block construction, hamburger and hotdog folds).
K-1	4.1.2	Demonstrate basic use and care of computer equipment (e.g., turning on and off, logging in and out, charging, handling).
K	4.1.3	Interact with apps and programs to complete tasks on a computer.
1-2	2.3.1	Explain that a program is a set of instructions that defines what a computer or device does.
1, 3	2.3.2	Construct a basic program using block-based coding.
1	1.3.1	Explain how to balance screen time with other activities and understand the potential negative consequences.
1	2.1.3	Decompose (break-down) a task (e.g., bedtime routine, decoding words) into simple steps.
2	4.2.3	Access and manage digital files and folders (e.g., open, save, locate, move).

GRADE	CODE	STANDARD
3	1.1.4	Participate safely and appropriately in online school-based communication (e.g., learning management system, class email).
3	2.1.2	Create a clear and ordered set of instructions that can be followed to complete a given, familiar task.
3	2.2.2	Use debugging strategies to identify and correct errors in algorithms.
3	3.1.2	Formulate appropriate questions for data collection.
3	3.3.1	Create appropriate visualizations to communicate data insights.

SCIENCE: ENGINEERING, TECHNOLOGY, AND APPLICATIONS

5 STANDARDS

Based on the Arkansas state standards

GRADE	CODE	STANDARD
1	1-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
1	1-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
2	2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
3	3-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
3	3-ETS1-3	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

SOURCES & NOTES

- The official mathematics, English language arts, computer science and science standards for Arkansas, as published by the Arkansas Division of Elementary & Secondary Education.
- 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.