

PAVING THE WAY WITH TREADS

GRADES K–3

This document lists the Georgia 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 Georgia Department of Education.

41

MATH

39

ELA

16

CS

3

SCIENCE

99

TOTAL STANDARDS

MATHEMATICS

41 STANDARDS

Based on the Georgia state standards

GRADE	CODE	STANDARD
K	K.MP.1	Make sense of problems and persevere in solving them.
K	K.NR.1	Demonstrate and explain the relationship between numbers and quantities up to 20; connect counting to cardinality (the last number counted represents the total quantity in a set).
K	K.NR.2.1	Count forward to 100 by tens and ones and backward from 20 by ones.
K	K.NR.5.2	Represent addition and subtraction within 10 from a given authentic situation using a variety of representations and strategies.
K	K.NR.5.3	Use a variety of strategies to solve addition and subtraction problems within 10.
K	K.MDR.7.1	Directly compare, describe, and order common objects, using measurable attributes (length, height, width, or weight) and describe the difference.
K	K.MDR.7.2	Classify and sort up to ten objects into categories by an attribute; count the number of objects in each category and sort the categories by count.
K	K.GSR.8.1	Identify, sort, classify, analyze, and compare two-dimensional shapes and three-dimensional figures, in different sizes and orientations, using informal language to describe their similarities, differences, number of sides and vertices, and other attributes.
K	K.GSR.8.2	Describe the relative location of an object using positional words.
K	K.GSR.8.3	Use basic shapes to represent specific shapes found in the environment by creating models and drawings.
1	1.MP.1	Make sense of problems and persevere in solving them.
1	1.MP.2	Reason abstractly and quantitatively.
1	1.NR.1.2	Explain that the two digits of a 2-digit number represent the amounts of tens and ones.

GRADE	CODE	STANDARD
1	1.NR.1.3	Compare and order whole numbers up to 100 using concrete models, drawings, and the symbols $>$, $=$, and $<$.
1	1.NR.2.1	Use a variety of strategies to solve addition and subtraction problems within 20.
1	1.GSR.4.1	Identify common two-dimensional shapes and three-dimensional figures, sort and classify them by their attributes and build and draw shapes that possess defining attributes.
1	1.GSR.4.2	Compose two-dimensional shapes (rectangles, squares, triangles, half-circles, and quarter-circles) and three-dimensional figures (cubes, rectangular prisms, cones, and cylinders) to create a shape formed of two or more common shapes and compose new shapes from the composite shape.
1	1.MDR.6.1	Estimate, measure, and record lengths of objects using non-standard units, and compare and order up to three objects using the recorded measurements. Describe the objects compared.
1	1.MDR.6.4	Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to compare and order whole numbers.
2	2.MP.1	Make sense of problems and persevere in solving them.
2	2.NR.1.1	Explain the value of a three-digit number using hundreds, tens, and ones in a variety of ways.
2	2.NR.1.3	Represent, compare, and order whole numbers to 1000 with an emphasis on place value and equality. Use $>$, $=$, and $<$ symbols to record the results of comparisons.
2	2.NR.2.3	Solve problems involving the addition and subtraction of two-digit numbers using part-whole strategies.
2	2.NR.2.4	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
2	2.MDR.5.2	Estimate and measure the length of an object or distance to the nearest whole unit using appropriate units and standard measuring tools.
2	2.MDR.5.4	Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.
2	2.MDR.6.2	Find the value of a group of coins and determine combinations of coins that equal a given amount that is less than one hundred cents, and solve problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.
2	2.GSR.7.1	Describe, compare and sort 2-D shapes including polygons, triangles, quadrilaterals, pentagons, hexagons, and 3-D shapes including rectangular prisms and cones, given a set of attributes.
2	2.GSR.7.3	Partition circles and rectangles into two, three, or four equal shares. Identify and describe equal-sized parts of the whole using fractional names ("halves," "thirds," "fourths," "half of," "third of," "quarter of," etc.).
2	2.GSR.7.4	Recognize that equal shares of identical wholes may be different shapes within the same whole.
3	3.MP.1	Make sense of problems and persevere in solving them.
3	3.PAR.3.2	Represent single digit multiplication and division facts using a variety of strategies. Explain the relationship between multiplication and division.

GRADE	CODE	STANDARD
3	3.PAR.3.3	Apply properties of operations (i.e., commutative property, associative property, distributive property) to multiply and divide within 100.
3	3.PAR.3.6	Solve practical, relevant problems involving multiplication and division within 100 using part-whole strategies, visual representations, and/or concrete models.
3	3.PAR.3.7	Use multiplication and division to solve problems involving whole numbers to 100. Represent these problems using equations with a letter standing for the unknown quantity. Justify solutions.
3	3.NR.4.1	Describe a unit fraction and explain how multiple copies of a unit fraction form a non-unit fraction. Use parts of a whole, parts of a set, points on a number line, distances on a number line and area models.
3	3.MDR.5.1	Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.
3	3.MDR.5.4	Use rulers to measure lengths in halves and fourths (quarters) of an inch and a whole inch.
3	3.GSR.6.2	Classify, compare, and contrast polygons, with a focus on quadrilaterals, based on properties. Analyze specific 3-dimensional figures to identify and describe quadrilaterals as faces of these figures.
3	3.GSR.7.1	Investigate area by covering the space of rectangles presented in realistic situations using multiple copies of the same unit, with no gaps or overlaps, and determine the total area (total number of units that covered the space).
3	3.GSR.7.2	Determine the area of rectangles (or shapes composed of rectangles) presented in relevant problems by tiling and counting.

ENGLISH LANGUAGE ARTS

39 STANDARDS

Based on the Georgia state standards

GRADE	CODE	STANDARD
K	K.F.PA.1	Identify and produce rhyme in spoken language and oral texts.
K	K.F.CP.3.b	Recognize that words are separated by spaces.
K	K.F.P.1.b	Identify and produce both long and short vowel sounds for A, E, I, O, U.
K	K.F.F.1.a	Develop sight word vocabulary using decoding skills by reading regularly and irregularly spelled high-frequency words in isolation and context with increasing automaticity, including first and last names of students and others.
K	K.P.CP.2.d	Engage in dialogue with audiences by asking and answering questions.
K	K.L.GC.1	Learn and apply conventions of Standard English grammar, usage, and mechanics to aid the comprehension of texts and to communicate clearly in written and spoken language.
K	K.L.V.3	Make connections between words and phrases and use reference materials to determine or clarify word meanings in a variety of settings and for a variety of purposes.
K	K.T.SS.1.b	With adult support, use text features, including titles, illustrations, and/or labels, to add clarity/coherence to texts.

GRADE	CODE	STANDARD
1	1.F.PA.6.a	Isolate and pronounce initial, medial, and final sounds in spoken one-syllable words, including words with digraphs and blends.
1	1.F.PA.6.b	Distinguish between short and long vowel sounds in spoken one-syllable words.
1	1.F.P.1.b	Identify and produce both long and short vowel sounds for A, E, I, O, U, including final -e and vowel digraphs.
1	1.F.P.2	Use grade-level phonics skills to decode words in context and in isolation.
1	1.F.P.2.a	Decode regularly spelled one-syllable words with a variety of spelling patterns (VC, CV, CVC, CVCe, VCC, CCVC, CVCC, CVVC, CCVCC), including high-frequency words.
1	1.F.F.1	Demonstrate oral and silent reading fluency while reading texts for understanding, self-correcting as necessary to ensure accuracy and aid comprehension.
1	1.F.F.1.a	Increase sight word vocabulary using decoding skills by reading grade-appropriate regularly and irregularly spelled words, including high-frequency words, in isolation and context with increasing automaticity.
1	1.P.CP.2.a	Communicate clearly to present ideas, information, and texts.
1	1.P.CP.2.d	Engage in dialogue with audiences by asking and answering questions.
1	1.L.GC.1	Learn and apply conventions of Standard English grammar, usage, and mechanics to aid the comprehension of texts and to communicate clearly in written and spoken language.
2	2.F.P.1.b	Identify and produce both long and short vowel sounds for A, E, I, O, U, including final -e, vowel digraphs, r-controlled vowels, and diphthongs.
2	2.P.EICC.3.d	Summarize and visualize sections of the text to maintain understanding.
2	2.P.EICC.4	Compose a range of texts for a variety of purposes and audiences, flexibly engaging in writing processes to plan, draft, evaluate, revise, and edit texts.
2	2.P.CP.2.a	Communicate clearly to present ideas, information, and texts.
2	2.P.CP.2.d	Engage in dialogue with audiences by asking and answering questions.
2	2.L.GC.1.18	Use apostrophes to form contractions and singular possessive nouns.
2	2.L.GC.1.19	Form and use irregular plural nouns.
2	2.L.GC.1.23	Use collective and abstract nouns.
2	2.L.V.3	Make connections between words and phrases and use reference materials to determine or clarify word meanings in a variety of settings and for a variety of purposes.
2	2.L.V.3.a	Use context within and beyond a sentence to determine or clarify the meaning of unknown and multiple-meaning words and phrases.
2	2.T.C.1.c	Choose two or more modes and create a multimodal text on a self-selected topic.
2	2.T.SS.1.b	Use text features (e.g., illustrations, page numbers, bold print, headings) to add clarity and meaning to texts.
2	2.T.T.1.e	Use knowledge of narrative techniques (e.g., characters, settings, events, dialogue) to create texts that recount real or imagined experiences and events with a sense of closure.

GRADE	CODE	STANDARD
2	2.T.T.3.c	Use knowledge of opinion techniques to create opinion pieces that introduce the topic, state an opinion about the topic, supply reasons to support the opinion with linking words (e.g., because, and, also), and provide a conclusion.
3	3.F.P.4	Use knowledge of phonics to decode and encode grade-level words.
3	3.P.EICC.4	Compose a range of texts for a variety of purposes and audiences, flexibly engaging in writing processes to plan, draft, evaluate, revise, and edit texts.
3	3.L.V.3	Make connections between words and phrases and use reference materials to determine or clarify word meanings in a variety of settings and for a variety of purposes.
3	3.T.T.1.c	Describe characters' traits, motivations, actions, thoughts, and feelings and explain their connection to the central message, lesson, or moral of the story.
3	3.T.T.1.e	Apply narrative techniques (e.g., character, setting, problem, resolution, dialogue) to develop a real or imagined experience using descriptive details, clear event sequences, and a sense of closure.
3	3.T.T.2.a	Describe the techniques used to present and design expository texts, including facts and key details used to support the main idea.
3	3.T.RA.2.a	Refer to specific passages from a text to support an idea, answer, or opinion.

COMPUTER SCIENCE

16 STANDARDS

Based on the Georgia state standards

GRADE	CODE	STANDARD
K-2	CSS.KC.K-2.2	Use digital tools (e.g. computers, tablets, cameras, software, 3D printers, etc....) to build knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others.
K-2	CSS.CC.K-2.6	Use digital tools to creatively share and express ideas.
K-2	CSS.DA.K-2.9	Understand how people can use technology.
K	CSS.DA.K-2.9.4	Create simple artifacts using a computing device.
1	CSS.DC.K-2.3.3	Follow safety rules and exhibit responsibility when using a device.
1	CSS.CT.K-2.5.2	Create and use Algorithms (a set of step-by-step instructions) to complete a task.
1	CSS.CT.K-2.5.3	Use Algorithms (a set of step-by-step instructions) to construct programs (using a block-based programming language or unplugged activities) that accomplish a task as a means of creative expression.
1	CSS.DA.K-2.9.3	Practice using a variety of computing hardware and software to achieve personal learning goals.
2	CSS.RR.K-2.8.3	Collect and organize data.
2	CSS.DA.K-2.9.1	Use devices appropriately
2	CSS.DA.K-2.9.2	Choose and use appropriate hardware and software tools for a given purpose using accurate terminology.

GRADE	CODE	STANDARD
3	CSS.CT.3-5.5.1	Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
3	CSS.CT.3-5.5.3	Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.
3	CSS.CT.3-5.5.4	Create programs that include sequences, events, loops, conditionals, and variables.
3	CSS.CC.3-5.6	Select and use the most appropriate platform, tool, style, format and digital media to clearly and creatively express thoughts, messages, goals, or positions.
3	CSS.GC.3-5.7	Use digital tools to expand personal viewpoints and enrich learning by collaborating effectively both locally and globally.

SCIENCE

3 STANDARDS

Based on the Georgia state standards

GRADE	CODE	STANDARD
2	S2P2.b	Design a device to change the speed or direction of an object.
2	S2P2.c	Record and analyze data to decide if a design solution works as intended to change the speed or direction of an object with a force (a push or a pull).
3	S3P1.c	Use tools and every day materials to design and construct a device/structure that will increase/decrease the warming effects of sunlight on various materials.

SOURCES & NOTES

- The official mathematics, English language arts, computer science and science standards for Georgia, as published by the Georgia Department of 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.