TRUE ROBOTICS

TAKING OFF WITH PILOT

GRADES 3–5

This document lists the Florida learning standards addressed by Taking Off with Pilot, True Robotics' grades 3–5 robotics curriculum. Standards are grouped by subject and grade level, with codes and wording as published by the Florida Department of Education.

31	8	8	47
MATH	SCIENCE	CS	TOTAL STANDARDS

MATHEMATICS

31 STANDARDS

Based on the Florida state standards

GRADE	CODE	STANDARD
3	MA.3.NSO.2.1	Add and subtract multi-digit whole numbers including using a standard algorithm with procedural fluency.
3	MA.3.NSO.2.2	Explore multiplication of two whole numbers with products from 0 to 144, and related division facts.
3	MA.3.NSO.2.3	Multiply a one-digit whole number by a multiple of 10, up to 90, or a multiple of 100, up to 900, with procedural reliability.
3	MA.3.FR.2.1	Plot, order and compare fractional numbers with the same numerator or the same denominator.
3	MA.3.AR.1.2	Solve one- and two-step real-world problems involving any of four operations with whole numbers.
3	MA.3.AR.3.2	Determine whether a whole number from 1 to 144 is a multiple of a given one-digit number.
3	MA.3.M.1.1	Select and use appropriate tools to measure the length of an object, the volume of liquid within a beaker and temperature.
3	MA.3.M.2.1	Using analog and digital clocks tell and write time to the nearest minute using a.m. and p.m. appropriately.
3	MA.3.M.2.2	Solve one- and two-step real-world problems involving elapsed time.
3	MA.3.GR.1.2	Identify and draw quadrilaterals based on their defining attributes. Quadrilaterals include parallelograms, rhombi, rectangles, squares and trapezoids.
3	MA.3.GR.2.2	Find the area of a rectangle with whole-number side lengths using a visual model and a multiplication formula.

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GRADE	CODE	STANDARD
3	MA.3.GR.2.3	Solve mathematical and real-world problems involving the perimeter and area of rectangles with whole-number side lengths using a visual model and a formula.
4	MA.4.NSO.2.2	Multiply two whole numbers, up to three digits by up to two digits, with procedural reliability.
4	MA.4.NSO.2.4	Divide a whole number up to four digits by a one-digit whole number with procedural reliability. Represent remainders as fractional parts of the divisor.
4	MA.4.FR.1.4	Plot, order and compare fractions, including mixed numbers and fractions greater than one, with different numerators and different denominators.
4	MA.4.AR.1.1	Solve real-world problems involving multiplication and division of whole numbers including problems in which remainders must be interpreted within the context.
4	MA.4.AR.3.1	Determine factor pairs for a whole number from 0 to 144. Determine whether a whole number from 0 to 144 is prime, composite or neither.
4	MA.4.M.2.1	Solve two-step real-world problems involving distances and intervals of time using any combination of the four operations.
4	MA.4.M.2.2	Solve one- and two-step addition and subtraction real-world problems involving money using decimal notation.
4	MA.4.GR.2.1	Solve perimeter and area mathematical and real-world problems, including problems with unknown sides, for rectangles with whole-number side lengths.
4	MA.4.GR.2.2	Solve problems involving rectangles with the same perimeter and different areas or with the same area and different perimeters.
4	MA.4.DP.1.1	Collect and represent numerical data, including fractional values, using tables, stem-and-leaf plots or line plots.
5	MA.5.FR.1.1	Given a mathematical or real-world problem, represent the division of two whole numbers as a fraction.
5	MA.5.FR.2.1	Add and subtract fractions with unlike denominators, including mixed numbers and fractions greater than 1, with procedural reliability.
5	MA.5.AR.1.2	Solve real-world problems involving the addition, subtraction or multiplication of fractions, including mixed numbers and fractions greater than 1.
5	MA.5.M.1.1	Solve multi-step real-world problems that involve converting measurement units to equivalent measurements within a single system of measurement.
5	MA.5.GR.1.1	Classify triangles or quadrilaterals into different categories based on shared defining attributes. Explain why a triangle or quadrilateral would or would not belong to a category.
5	MA.5.GR.2.1	Find the perimeter and area of a rectangle with fractional or decimal side lengths using visual models and formulas.
5	MA.5.GR.3.1	Explore volume as an attribute of three-dimensional figures by packing them with unit cubes without gaps. Find the volume of a right rectangular prism with whole-number side lengths by counting unit cubes.
5	MA.5.GR.3.2	Find the volume of a right rectangular prism with whole-number side lengths using a visual model and a formula.

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GRADE	CODE	STANDARD
5	MA.5.GR.3.3	Solve real-world problems involving the volume of right rectangular prisms, including problems with an unknown edge length, with whole-number edge lengths using a visual model or a formula. Write an equation with a variable for the unknown to represent the problem.

SCIENCE

8 STANDARDS

Based on the Florida state standards

GRADE	CODE	STANDARD
4	SC.4.N.1.1	Raise questions about the natural world, use appropriate reference materials that support understanding to obtain information (identifying the source), conduct both individual and team investigations through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.
4	SC.4.P.10.1	Observe and describe some basic forms of energy, including light, heat, sound, electrical, and the energy of motion.
4	SC.4.P.10.2	Investigate and describe that energy has the ability to cause motion or create change.
4	SC.4.P.12.2	Investigate and describe that the speed of an object is determined by the distance it travels in a unit of time and that objects can move at different speeds.
4	SC.4.P.8.1	Measure and compare objects and materials based on their physical properties including: mass, shape, volume, color, hardness, texture, odor, taste, attraction to magnets.
5	SC.5.N.1.1	Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, interpreting data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.
5	SC.5.P.13.2	Investigate and describe that the greater the force applied to it, the greater the change in motion of a given object.
5	SC.5.P.13.4	Investigate and explain that when a force is applied to an object but it does not move, it is because another opposing force is being applied by something in the environment so that the forces are balanced.

COMPUTER SCIENCE

8 STANDARDS

Based on the Florida state standards

GRADE	CODE	STANDARD
3–5	SC.K12.CTR.3.1	Complete tasks with digital fluency.
3	SC.3.PE.3.2	Demonstrate how programs written differently can have the same outcome.
3	SC.3.TI.1.1	Summarize how different types of computing devices are used to communicate with others on a daily basis.
4	SC.4.PE.3.2	Create a list of steps (algorithm) to solve a real-world problem.

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GRADE	CODE	STANDARD
5	SC.5.CO.1.1	Describe the function and purpose of various input/output devices.
5	SC.5.PE.1.2	Create a program in a graphical environment.
5	SC.5.PE.1.3	Create a program using arithmetic operators, conditionals and repetition in programs.
5	SC.5.PE.1.4	Detect and correct program errors.

SOURCES & NOTES

- The official mathematics, science and computer science standards for Florida, as published by the Florida 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.

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