

MEDICAL ROBOTICS

GRADES 8–12

This document lists the Alabama learning standards addressed by Medical Robotics, True Robotics' grades 8–12 robotics curriculum. Standards are grouped by subject and grade level, with codes and wording as published by the Alabama State Department of Education.

6

SCIENCE

4

STEM

1

CS

17

TOTAL STANDARDS

SCIENCE

6 STANDARDS

Based on the Alabama state standards

GRADE	CODE	STANDARD
8	7.4	Obtain, evaluate, and communicate information explaining how cells, tissues, and organs of various systems of the human body work together for specific functions, including the circulatory, digestive, muscular, nervous, respiratory, and skeletal systems.
8	8.11a	Use mathematical representations to explain how the sum of external forces on an object and the object's mass affect its acceleration.
9–12	Human Anatomy and Physiology 9a	Construct an explanation of how the circulatory system works with respiration to transport respiratory gases.
9–12	Human Anatomy and Physiology 9c	Construct an explanation of the respiratory system's relationships with other organ systems, including the body's mechanisms for maintaining homeostasis.
9–12	Human Anatomy and Physiology 6a	Obtain, evaluate, and communicate information explaining how hormones secreted by endocrine glands help the body maintain homeostasis through negative and positive feedback loops.
9–12	Human Anatomy and Physiology 8b	Carry out an investigation exploring the link between blood pressure and heart rate and include the role of baroreceptors and chemoreceptors in the explanation of results.

STEM (CAREER AND TECHNICAL EDUCATION)

4 STANDARDS

Based on the Alabama state standards

GRADE	CODE	STANDARD
8	STEM Technologies II 17	Make a product or system to solve a problem and document the solution.
8	STEM Technologies III 19	Test, evaluate, and modify a design in relation to criteria and constraints.
9–12	Foundations of Engineering 8a	Produce multi-view sketches and drawings.
9–12	Robotic Systems 5c	Present a completed robotic system, including a design, materials, procedure, prototype, and reflection summary, using a variety of media.

DIGITAL LITERACY AND COMPUTER SCIENCE

7 STANDARDS

Based on the Alabama state standards

GRADE	CODE	STANDARD
8	8.2	Design multi-branched flowcharts and corresponding pseudocode.
8	7.7	Write a program that utilizes multiple data types and structures.
8	7.6	Design and implement a program that solves a problem, using sequencing, selection, and iteration, and user input to control the program's behavior.
8	8.3	Evaluate programs containing nested logic by applying relational and logical operators to trace conditions, and debug when those conditions do not behave as expected.
8	7.24	Describe ways computing technologies can transform and impact the environment, culture, economies, and society.
9–12	9-12.14	Create a complete program to solve a problem or explore personal interests, using a text-based programming language.
9–12	9-12.5	Decompose problems into component parts, extract key information, and model levels of abstraction in complex systems.

SOURCES & NOTES

- The official science, STEM and computer science standards for Alabama, as published by the Alabama State 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.
- 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.