

MEDICAL ROBOTICS

GRADES 8–12

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

10

SCIENCE

7

CS

17

TOTAL STANDARDS

SCIENCE

10 STANDARDS

Based on the Arkansas state standards

GRADE	CODE	STANDARD
8	6-LS1-3	Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
8	8-PS2-2	Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.
8	7-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
8	7-ETS1-4	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.
9–12	BI-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
9–12	HAP-LS7-1AR	Develop and use a model to illustrate the interactions between systems that control or affect specific functions within the human body.
9–12	BI-LS1-3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
9–12	BI7-ETS1-1	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
9–12	BI6-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
9–12	BI6-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

COMPUTER SCIENCE

7 STANDARDS

Based on the Arkansas state standards

GRADE	CODE	STANDARD
8	3.2.2	Create and use variables with assigned values in a text-based program.
8	2.3.2	Use nested conditional statements, boolean operators, and random number generation when programming.
8	2.1.2	Design clear procedures, incorporating iteration and conditional logic to solve a complex problem.
9–12	2.4.2	Construct visual representations and structured expressions to plan programs (e.g., flowcharts, pseudocode, UML diagrams).
9–12	3.1.3	Gather and analyze data using sensors (e.g., temperature, light, HC-SRO4).
9–12	2.4.1	Break down complex problems into smaller, manageable sub-problems (e.g., decomposing a game into separate modules for graphics, input handling, and game logic).
9–12	6.2.1	Analyze the impact of robotics on the workforce and society.

SOURCES & NOTES

- The official science and computer 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.
- 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.