

MEDICAL ROBOTICS

GRADES 8–12

This document lists the Missouri 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 Missouri Department of Elementary and Secondary Education.

9

SCIENCE

7

CS

16

TOTAL STANDARDS

SCIENCE

9 STANDARDS

Based on the Missouri state standards

GRADE	CODE	STANDARD
8	6-8.LS1.A.4	Present evidence that body systems interact to carry out key body functions, including providing nutrients and oxygen to cells, removing carbon dioxide and waste from cells and the body, controlling body motion/activity and coordination, and protecting the body.
8	6-8.PS2.A.2	Plan and conduct 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	6-8.ETS1.B.1	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
8	6-8.ETS1.B.3	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	9-12.LS1.A.2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
9–12	9-12.LS1.A.3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
9–12	9-12.ETS1.A.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	9-12.ETS1.A.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	9-12.ETS1.B.1	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 Missouri state standards

GRADE	CODE	STANDARD
8	6-8.AP.A.01	Design algorithms with flow charts and/or pseudocode to show solutions to complex problems.
8	6-8.AP.V.01	Create clearly named variables to store and manipulate information.
8	6-8.AP.C.01	Design and develop combinations of control structures, nested loops and compound conditionals.
8	6-8.CS.HS.01	Design projects that combine hardware and software to collect and exchange data.
9–10	9-10.AP.A.01	Create a prototype that uses algorithms (e.g., searching, sorting, finding shortest distance) to provide a possible solution for a real-world problem.
9–10	9-10.AP.M.01	Break down a solution into procedures using systematic analysis and design utilizing functional abstraction.
9–10	9-10.IC.C.01	Evaluate the ways computing impacts personal, ethical, social, economic and cultural practices.

SOURCES & NOTES

- The official science and computer science standards for Missouri, as published by the Missouri Department of Elementary and 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.