

MEDICAL ROBOTICS

GRADES 8–12

This document lists the Alaska 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 Alaska Department of Education & Early Development.

9

SCIENCE

6

CS

15

TOTAL STANDARDS

SCIENCE

9 STANDARDS

Based on the Alaska state standards

GRADE	CODE	STANDARD
8	MS-LS1-3	Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
8	MS-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	MS-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
8	MS-ETS1-4	Develop a model to generate data for repetitive testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.
9–12	HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
9–12	HS-LS1-3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
9–12	HS-ETS1-1	Analyze major global challenges to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
9–12	HS-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	HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and tradeoffs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

COMPUTER SCIENCE

6 STANDARDS

Based on the Alaska state standards

GRADE	CODE	STANDARD
8	8.AP.A.01	Design algorithms in natural language, flow and control diagrams, comments within code, and/or pseudocode to solve complex problems.
8	8.AP.V.01	Develop programs that utilize combinations of nested repetition, compound conditionals, functions, and the manipulation of variables representing different data types.
8	8.CS.HS.01	Design and refine projects that combine hardware and software (User Interface) to collect and exchange data.
9–12	L1.AP.A.01	Use algorithms (e.g., sequencing, selection, iteration, recursion, etc.) to create a prototype to provide a possible solution for a common problem.
9–12	L1.AP.M.01	Using systematic analysis and design, break down a solution into basic elements such as procedures, functions, or methods.
9–12	L2.CGEI.C.02	Based on research, evaluate how computing has revolutionized an aspect of our culture and predict how it might evolve (e.g., education, healthcare, art/entertainment, and energy).

SOURCES & NOTES

- The official science and computer science standards for Alaska, as published by the Alaska Department of Education & Early Development.
- 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.