



# Science, Technology, Engineering & Mathematics

## STEM AT CLEVELAND HIGH SCHOOL

### INTRODUCTION

The STEM Program at Cleveland High School offers students an integrated, project-based, high technology learning environment. STEM students apply their knowledge and skills in ways that have personal significance and work together with community partners to address real, authentic life, societal or world problems.

### THE INSTRUCTIONAL PROGRAM

- Students enjoy a 1:1 student lap-top program.
- Project-based learning accelerates students' academic progress, giving all students an opportunity to successfully complete college-level work while still in high school.
- Career and Technical Education is an important aspect of the instructional core, and student internships in STEM fields provide students with opportunities to demonstrate their ability to apply knowledge learned in the classroom.
- STEM students develop leadership, thinking, & collaboration skills, self-management and other 21<sup>st</sup> Century skills through service learning & project based learning, which prepare them for a successful transition to further education, future careers, and adult life.

### IS STEM THE RIGHT FIT FOR MY STUDENT?

Consider whether you or your student would benefit from a learning environment which emphasizes:

- Cooperative, small group work and instruction.
- Full inclusion of Special Education and English Language Learners.
- Laptops provided to each student and required daily in class.
- Real world and relevant project/instructional contexts.
- Culture of learning, trust, respect, & responsibility of students and adults.

### HOW DOES STEM AT CLEVELAND HIGH SCHOOL WORK?

Cleveland High School is an "option" high school, meaning that any Seattle student can attend. STEM at Cleveland has two separate pathways students can choose from. Common elements are:

- **Block Scheduling.** STEM features eight courses per semester, giving students the opportunity to take rigorous math and science courses, as well as world languages, music, art, and PE.
- **Math and science every year.** STEM students take four years of math and four years of science. Cleveland offers a strong academic program, including an array of AP science, mathematics, and engineering courses.
- **Courses for every student.** The STEM program is structured so that every student can succeed. STEM at Cleveland offers **support** for students who need additional assistance, as well as **acceleration** for students who are ready to tackle more rigorous coursework.
- **Project-based learning opportunities.** All courses are taught using project or problem-based approaches, in a high technology learning environment in which students apply their knowledge and skills in ways that have personal significance. Local and regional partnerships with industry, higher education, and community-based organizations provide an array of learning opportunities.
- **Expanded Learning Opportunities.** The STEM Program has been designed to provide enriched learning opportunities throughout high school.
  - Incoming 9<sup>th</sup> Graders have the opportunity to get a head start in Project 206
  - STEM Summer Learning Opportunities for grades 9/10
  - Job Shadow Opportunities for 11<sup>th</sup> graders
  - Internship opportunities for 12<sup>th</sup> graders



## COURSE PROGRESSION: ALL STUDENTS

At Cleveland STEM, all students will take the coursework outlined below (standard SPS graduation requirements). We require a “college-ready” schedule for all students, including two years of world language, four years of math, and four years of science. We have strong non-STEM electives available as well, including music, fine art, journalism, multimedia, and video production.

9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
Language Arts	Language Arts	Language Arts	Language Arts
World History	World History 3	US History	American Government
Algebra/Geometry	Geometry/Algebra 2	Algebra 2 / Pre-Calculus	Pre-Calculus /Calculus
Physical Science	Biology	Chemistry	Physics
Electives	Courses include: PE/Health, World Language (Mandarin, Spanish), Fine Arts (Band, Orchestra, Drumline, Art Survey, Music Survey, Ceramics), Yearbook, Journalism, Multimedia, Video Production, Robotics, , Forensics		
AP Classes	AP Chemistry, AP Computer Science, AP Environmental Science, AP Physics, AP Statistics, AP Spanish, AP Calculus		
College Level Classes	Biology 100 (UWIHS)		

## COURSE PROGRESSION: PATHWAYS



### BIOMEDICAL/LIFE SCIENCES Pathway

focuses on the life sciences and biomedical fields, including biology, anatomy and physiology, molecular biology and techniques, and professional research lab skills via a robust series of *Project Lead the Way* courses.

9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
Intro to Biomedical Principles	Human Body Systems: Anatomy and Physiology	Medical Interventions: Molecular Techniques/ Molecular Biology	Capstone Course—AP Environmental Science, UWIHS Biology,



### ENGINEERING AND DESIGN Pathway

students answer “How are things made and what processes go into creating products?” They use software and manufacturing equipment to create products of their own

9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade
Introduction Engineering Design	Engineering 2/ Computer Integrated Manufacturing Or AP Computer Science Principle	Principles of Engineering Or AP Computer Science A1	Engineering and Design Development Or Project in Computer Science

### Community Partners (Partial List)

Microsoft  
Boeing  
Army Corps of Engineers  
Institute for Systems Biology  
Fred Hutchinson Cancer Research  
Dana K. Johnston Foundation  
College Success Foundation  
Upward Bound – UW  
Dream Project - UW  
YMCA  
Global Visionaries  
Bikeworks  
City of Seattle  
Seattle Parks and Recreation  
First Robotics  
PNW Regional Council of Carpenters  
South Seattle College  
Group Health  
Public Health- Seattle and King County  
Young Shakespeare  
Seattle Tilth  
WWAHEC- Western Washington Area Health Education Center  
UW Center for Sensorimotor Neural Engineering  
Omeros  
SeaVuria  
Cleveland High School PTSA/Booster Club  
Cleveland High School Alumni Association



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