NIKOLA TESLA STEM HIGH SCHOOL

INSPIRE INNOVATE EDUCATE

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Tesla STEM High School is a science, technology, engineering and mathematics high school that uses Problem-Based Learning to prepare students for future STEM professions. Tesla STEM is a public choice school that uses a lottery-style system for enrollment. In class, students conduct research in STEM Lab Concentrations, investigate real world problems, and bring research and debate into the equation while working towards viable solutions. Students enroll in, on average, six Science courses and four Math courses for the duration of their high school career, with Engineering and Technology integrated into all grade level classes.

Courses completed the first two years at Tesla STEM include: honors-level English, World Language, Physics, Math, Graphic Design, Computer Science, Engineering, AP Environmental Science, AP or Honors Biology, and Entrepreneurship. In their final two years students work in either a defined STEM Lab Concentration or STEM pathway each year, conducting inquiry and original research to the level of publication and/or academic competitions. Lab Concentrations address the goals of the National Academy of Engineering's "Grand Challenges for Engineering" in order to support a bright and sustainable future on a global scale.

Tesla STEM Lab Concentrations/STEM Pathways

(Students may only enroll in 1 STEM lab each year. Labs are lottery-based if over-requested.)

Junior STEM Labs:

Environmental Science & Sustainable Design - This lab focuses on cause, effect, and science of global climate change, along with a strong emphasis on the central lab themes of engineering and sustainability solutions. *Dual credit is available via U of Washington.*

Forensics & Psychology - This lab engages students in systems biology problem solving, applying forensic science knowledge to engineer crime maps and data bases, and provides students with innovative thinking. Students apply understanding of the brain and psychology to solve problems and analyze criminal behavior and crime trends. *Dual credit via U of Washington & AP credit are available.*

Senior STEM Labs:

Advanced Physics & Global Engineering - Advanced Physics focuses on extensive mathematical modeling of physical phenomena and calculus based problem solving. Students make extensive use of hardware to investigate phenomena, apply physical/mathematical understanding and create new devices. *AP credit (AP Physics C: M + EM) are available.*

Advanced Biomedical STEM Lab - Honors Human Anatomy and Physiology is presented in tandem with Advanced Biomedical Engineering. The human body systems are explored using various vertebrate models. This knowledge is then applied in a project-based learning format which teaches modern lab techniques and creates innovative solutions to real world problems. Students investigate how our changing planet is impacting human health and explore how sustainability is at the interface of modern biomedical science. *Dual credit is available via U of Washington.*

STEM Pathways (available to all grade levels):

Engineering Pathway—Our Engineering 1, 2 & 3 courses are hands-on project based courses that emphasize the engineering design process, with increasing complexity, rapid prototyping and presentation of large-scale projects. *Dual credit is available via U of Texas-Austin.*

Computer Sciences Pathway—Our sequential Computer Science courses include increasing levels of computational thinking, data abstraction, beginning through advanced programming, and mobile development. Students at all levels participate in contest-based experiences. *Dual credit via Bellevue College and AP credit are available.*

Tesla Graduating Class: 2021

Senior Class size: 141

Average Un-weighted GPA: 3.69 (on a 4.0 scale)

Tesla STEM does not rank

Tesla STEM Grading Scale

A	100-90%
B+	89-87%
B	86-83%
B-	82-80%
C+	79-77%
C	76-73%
C-	72-70%
NC	69-0%

**P grade issued at school's discretion for 69-60% or for non-grade-bearing courses*

18 National Merit Scholars
29 Commended Merit Scholars
90 AP Scholars
49 AP Scholars with Honors
106 AP Scholars with Distinction
55 National AP Scholars

SAT (2019/20 Mean Scores)

Tesla: Math: 706 ERW: 683
WA State: Math: 534 ERW: 539

ACT (2019/20 Mean Scores)

Tesla Composite: 29.5
WA State Composite: 22.2

AP (Mean Scores)

Tesla AP Pass rate: 84%

Biology: 3.65 (WA state: 3.07)

Calculus AB: 4.0 (WA state: 3.07)

Calculus BC: 3.85 (WA state: 3.75)

Chemistry: 3.18 (WA state: 2.75)

Computer Sci A: 3.83 (WA state: 3.39)

Comp Sci Principles: 3.64 (WA state: 3.21)

Environmental Science: 3.55 (WA state: 3.03)

English Language: 3.73 (WA state: 3.07)

Physics C E&M: 3.5 (WA state: 3.76)

Physics C Mechanics: 4.0 (WA state: 3.96)

Psychology: 4.05 (WA state: 3.23)

Statistics: 4.02 (WA State: 3.0)

Outside of the Classroom

Central to our school's mission is developing students' ability to apply learning with an integrated and problem-based approach. Tesla STEM students practice presentation of long-term projects in all classes, and all students participate in academic competitions. Scholars demonstrated ability to apply these skills outside the classroom setting include:

Projects

Project Awards earned at:

- Intel ISEF competition
- Congressional Apps Challenge
- NWABR Expo
- Technology Student Association
- Verizon Apps challenge

Competitions

Awards earned at:

- **Imagine Tomorrow Grand Challenges Competition (2018):** multiple awards in project design, behavior change and technology innovation
- **WA State science & engineering fair:** multiple awards including Genius Olympiad and Gold Prize award
- **Health Occupations Student Association:** National and State awards
- **Central Sound Science Fair:** Grand Prize Winner and multiple awards earned
- **Hunt The Wumpus Microsoft Competition:** Multiple Awards Earned
- **National History Day:** National State Awards

Presentations

Award-earning presentations at:

- **Model UN:** Outstanding Delegate award
- **HOSA:** National and State awards
- **FBLA:** National and State awards

Contest-based mentorships

Student-initiated Professional mentorships with industry professionals at:

- Microsoft
- University of Washington
- City of Redmond
- NW Assoc for Biomedical Science
- National Center for Women and Information Technology

Clubs & Organizations

- Schools under 2C
- STEM Startups
- Darrington STEM Education
- STEM Reach
- Key Club
- National Science Bowl Club
- Amnesty International

Diploma Requirements: Credit requirements for all grade levels can be accessed at http://www.lwsd.org/programs-and-services/curriculum-instruction/high-school-guide/graduation-requirements

Tesla Junior Year Internships

As a critical component in STEM education, students work in partnership with Tesla's High School college professors, industry experts, and community and business leaders in a combined effort to further support and enrich students' interests and curiosity. During Junior year 95% of our scholars participate in a school-sponsored internship, allowing the learner to connect their courses and lab concentrations and use their knowledge and skills in real time with the experts and leaders in specific STEM fields. Some Business Partners Include:

Aerojet —DLR Architecture
Genie/Terex Corp
Glacier River Design
Inventcor -Integrus Architecture
MicroGreen—Microsoft
NW Medical Physics Center
University of Washington
Washington State Patrol Crime Lab

Our 2015-19 graduates have gone on to attend many colleges, including:

MIT, CalTech, Rice, Purdue, Harvard, Stanford, Washington University, Cornell, Georgia Tech, Princeton, Johns Hopkins, UCLA, UC Berkeley, Oregon State, Bellevue College, Gonzaga, Whitman, University of Washington, Vanderbilt, Cal Poly, Chapman, Harvey Mudd, University of Waterloo, University of Chicago, RIT, RPI, UC Davis, Northeastern, Duke, WA State, Carnegie Mellon, WSU, Western Washington, University of British Columbia, Whitworth University, University of San Diego, Seattle University & more!

Advanced Courses	Honors/AP/ Accelerated/ Dual Credit
9th & 10th grade English	Honors
English Language 11th Grade	Honors, AP
World Literature/ARC	Accelerated
U.S. History	Honors
Contemporary World Probs	Honors
Psychology	AP
Advanced Algebra	Honors
Math Analysis	Accelerated
Calculus AB, Calculus BC	AP
Statistics	AP
Physics	Honors
Physics C: Mechanics + Electrical & Magnetic	AP
Chemistry	Honors, AP
Biology	Honors, AP
Environmental Science	AP
Forensics	Dual Credit
Environmental Science & Sustainable Design	Dual Credit
Anatomy & Physiology	Honors, Dual Credit
Advanced Biomedical Lab	Accelerated
Comp Science Principles	AP
Computer Science A (Java)	AP
Data Structures	Accelerated
Advanced Projects in Java	Accelerated
Spanish I, II, III	Honors
Engineering I	Dual Credit
Engineering II, III	Accelerated
Business/Marketing & Econ	Dual Credit

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STEM RESEARCH JOURNALS:
https://tesla.lwsd.org/academics

ACADEMIC COUNSELORS:
Molly Brownie *(last names A-J)*
Chase Covington *(last names K-P)*
Kelly Wescott *(last names Q-Z)*

COVID DISCLAIMER

Tesla STEM High School has been closed to in-person learning since March 11, 2020. From March 11 through the end of June 2020, students attended school via remote learning. All students in the LWSD were graded with A's or I's (incompletes) for Spring semester of the 2019/20 school year. Incompletes from this semester are able to be cleared by the student's graduation date through various competency methods.

This fall of 2020, students are continuing to attend school via remote learning, with no in-person schooling to date. Our teachers use a combination of synchronous and asynchronous learning in their work with students. We are operating on our regular grading scale for the current Fall semester (A through C-, P, or NC grades).