

NIKOLA TESLA STEM HIGH SCHOOL

INSPIRE INNOVATE EDUCATE

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<http://tesla.lwsd.org>

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School CEB Code: 480976



Nikola Tesla STEM High School is a science, technology, engineering and mathematics high school that uses Problem-Based Learning to prepare students for STEM professions. As a public choice school, a lottery-style system for enrollment is used. 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, 7 Science courses and 4 Math courses over the course of their high school career, with engineering and technology integrated into all grade level classes.

Foundational courses completed in 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-based, 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" 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 - Focuses on cause/effect and the science of global climate change, along with a strong emphasis on central lab themes of engineering and sustainability solutions. *Dual credit available via University of Washington.*

Forensics & Psychology - 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 University of Washington & AP credit 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 credits (AP Physics C: M + EM) available.*

Biomedical Engineering STEM Lab - Honors Human Anatomy and Physiology is taught in tandem with Advanced Biomedical Engineering. The human body systems are explored using various vertebrate models. 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 available via University of Washington.*

STEM Pathways (available to all grade levels):

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

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. *AP credits available for the lower-level courses.*

TESLA STEM CLASS OF 2023

SENIOR CLASS SIZE: 146

CO 2023 AVERAGE GPA: 3.72*
ALL-SCHOOL AVERAGE GPA: 3.68
(un-weighted, on a 4.0 scale)

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%
P (Pass, w/ credit)^	60-69%
NC or N (No Credit)^	59% -

^P, NC & N grades do not impact GPA

TESLA STEM DOES NOT RANK

FALL 2022

16 NATIONAL MERIT SEMI-FINALISTS

36 COMMENDED MERIT SCHOLARS

107 AP SCHOLARS

55 AP SCHOLARS WITH HONORS

177 AP SCHOLARS WITH DISTINCTION

SAT (CLASS OF 2022 MEAN SCORES)

TESLA: MATH: 720 ERW: 676
(WASH STATE: MATH 542 ERW: 554)
(NATIONAL: MATH 521 ERW 529)

ACT (CLASS OF 2022 MEAN SCORES)

TESLA COMPOSITE: 31.0
(WASH STATE COMPOSITE: 22.9)
(NATIONAL: 20.8)

2022 AP EXAM MEAN SCORES

TESLA AP PASS RATE: 88%

BIOLOGY: 4.2 (WA STATE: 3.3)

CALCULUS AB: 4.1 (WA STATE: 3.3)

CALCULUS BC: 3.8 (WA STATE: 3.6)

CHEMISTRY: 3.6 (WA STATE: 2.8)

COMPUTER SCI A: 3.8 (WA STATE: 3.3)

COMP SCI PRINCIPLES: 4.1 (WA STATE: 3.2)

ENGLISH LANGUAGE: 4.0 (WA STATE: 3.1)

ENVIRO SCIENCE: 3.9 (WA STATE: 2.9)

PHYSICS C E&M: 3.7 (WA STATE: 3.6)

PHYSICS C MECHANICS: 3.9 (WA STATE: 3.7)

PSYCHOLOGY: 4.5 (WA STATE: 3.1)

STATISTICS: 4.1 (WA STATE: 3.2)

OUTSIDE OF THE CLASSROOM

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

PROJECTS

PROJECT AWARDS EARNED AT:

- INTEL ISEF COMPETITION
- CONGRESSIONAL APPS CHALLENGE
- TECHNOLOGY STUDENT ASSOCIATION
- VERIZON APPS CHALLENGE

COMPETITIONS

AWARDS EARNED AT:

- **WA STATE SCIENCE & ENGINEERING FAIR:** MULTIPLE AWARDS INCLUDING GENIUS OLYMPIAD AND GOLD PRIZE AWARD
- **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

NOTABLE CLUBS & ORGANIZATIONS

- SCHOOLS UNDER 2C
- STEM STARTUPS
- MAKER CLUB
- STEM REACH
- KEY CLUB
- NATIONAL SCIENCE BOWL CLUB
- ART HONOR SOCIETY
- TED CLUB



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

Tesla STEM offers the typical state minimum requirements in Humanities, enabling our students to maximize opportunities in STEM-based curriculum.

Tesla Junior Year Internships

As a critical component in STEM education, students work in partnership with school staff, college professors, industry experts, and community and business leaders in a combined effort to further support and enrich students' interests and curiosity. Historically during Junior year 95% of our scholars participate in a school-sponsored internship. Due to the global pandemic we did not offer school-sponsored internships in the 2021/22 school year.

Some past business partners included:

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

2018-22 graduates have gone on to attend many colleges, including:

(*more than 5 students) *Bellevue College, *Cal Poly, Caltech, Carnegie Mellon Cornell, Duke, *Georgia Tech, Harvard, Harvey Mudd, Johns Hopkins, *Northeastern, Princeton, *Purdue, *Rice, Stanford, UCLA, *UC Berkeley, *Oregon State, Gonzaga, MIT, RIT, Rensselaer Polytech, *Seattle University, *UC Davis, University of Chicago, *UI — Urbana, *UW — Bothell, *UW — Seattle, University of British Columbia, University of San Diego, University of Waterloo, *WSU, *Western Washington U, Washington U, Whitman, & many more!

Academic Curriculum

AP/dual-credit/accelerated courses are available to any students who meet the prerequisite coursework

Courses	Core Academic Requirement	Honors/AP/ Accelerated/ Dual Credit
9th/10th Gr English	ELA	Honors
English Lang 11th Gr	ELA	Honors or AP
World Literature/ARC	ELA	Accelerated
U.S. History	Social Studies	Honors
Contemp World Probs	Social Studies	Honors
Civics	Social Studies	
Economics	Social Studies	
Psychology	Social Studies	AP
Algebra 2	Math	Honors
Math Analysis	Math	Accelerated
Pre-Calculus	Math	Honors
Calculus AB, Calculus BC	Math	AP
Statistics	Math	AP
Multivariable Calc	Math	Accelerated
Physics	Science	Honors
Physics C: Mechanics + Electrical & Magnetic	Science	AP
Chemistry	Science	Honors & AP
Biology	Science	BC Dual Cr & AP
Environmental Science	Science	AP
Forensics	Science	UWHS Dual Credit
Environ Engineering & Sustainable Design	Science	UWHS Dual Credit
Anatomy & Physiology	Science	Honors, Dual Cr
Biomedical Engineer	Science	Accelerated
Comp Sci Principles	Science, Math	AP
Computer Science A	Science, Math	AP
Data Structures	Occ Ed	Accelerated (post-AP)
Advanced Projects	Occ Ed	Accelerated (post-AP)
Graphic Design	Fine Arts	CTE Dual Credit
Choir/Orchestra	Fine Arts	(after school only)
Spanish I, II, III	World Lang	Honors
Entrepreneurship	Occ Ed	CTE Dual Credit
Engineering I, II, III	Occ Ed	UT-A Dual Credit/ Accelerated
Business/Marketing	Occ Ed	BC Dual Credit

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STEM RESEARCH JOURNALS and COURSE CATALOG:

<https://tesla.lwsd.org/academics>

ACADEMIC COUNSELORS:

Molly Brownie (last names A-K)
Chase Covington (last names L-P)
Kelly Wescott (last names Q-Z)

COVID-19 REMOTE LEARNING AND GRADING ADDENDUM, updated 9/30/2022

*Learning Model & Grading Policies:

Tesla STEM High School was closed to in-person learning due to the global pandemic for 13 months, from 3/11/2020 -04/19/2021.

From March 2020 - June 2020, students had the option of various asynchronous and synchronous learning opportunities. Students in the Lake Washington SD were graded for Spring semester of 2019-20 with A's (issued for a grade 60% or higher) or I's (Incompletes). Incompletes from this semester can be cleared and updated to an A* by the student's graduation date through various competency methods.

For the 2020-21 school year, our students attended school via remote learning only from September 2020 - April 19, 2021, with no in-person schooling option. Classes met synchronously for one hour twice per week with additional asynchronous work required for each class. Our regular grading scale was utilized (letter grades A through C-, Pass or No Credit given), with the option to convert any letter grade to a Pass/Fail if circumstances warranted this flexibility. From April 19th, 2021 to June 2021, students were given the option to attend school either in-person 4 days per week or remotely, with each class meeting synchronously 2 times per week for 70 mins.