Profile for College Admissions
2019–2020

The School
Proof School is a full-curriculum, independent day school for young people with an active curiosity and passion for mathematics. The school launched in 2015, and was founded on the premise that kids who love math would thrive in a tight-knit community where they are surrounded by people who share that love.

Our small community is a core feature of the school. Whole-school meetings start each day, classes are highly collaborative, and students are extraordinarily well known by faculty and peers alike. Students work, eat, and play together, with our oldest students often looking out for our youngest students.

Academics
The school emphasizes analytical thinking, communication, and collaboration across the curriculum. Students devote their mornings to the humanities and sciences. Each afternoon, students explore problem solving and proof writing in a range of mathematical subjects, from algebra and combinatorics to topology and number theory.

Need-Blind Admissions
Proof School is need-blind and fully meets demonstrated financial need. Financial assistance ranges from 10%-99% of tuition.

Faculty
Proof School’s faculty fuels the operation of the school, from teaching and curricular design to school leadership and operations. The vast majority of our staff are classroom teachers, including the three members of the school leadership team. Our faculty members bring an unusual blend of advanced academic expertise; relevant and varied teaching experience; and the ability to engage bright, eager students. Faculty searches each year are at the national level. Among our 20 faculty, 10 hold PhDs and another seven hold Master’s degrees.

Students
Our school reflects the broad range of interests among our students. Students have demonstrated interests and exceptional abilities in math, coding, writing, music, art, and science, to name a few. Our expectation is that these varied interests ultimately will open many different paths to them.

Our student body is multicultural and collectively speaks twenty different languages. Students commute to school from around the San Francisco Bay Area, with typical commutes of 30-120 minutes each way. To date, 16 students have moved from around the country to be within commuting distance of the school. Our students are well versed in going great distances to seek out opportunities.

Head of School
Sam Vandervelde

Director of School Programs & Admissions
Kathy Lin

Dean of Humanities
Zachary Sifuentes

[ 111 ] students
[ 6-12 ] grades
[ 20 ] teachers
[ 17 ] adv. degrees
[ 12 ] avg. class size
Mission and Pedagogy

Our mission is to offer a transformative liberal arts education to young people with an active curiosity and a passion for mathematics, equipping them to reason, communicate, and positively impact their world.

Our Mission in Practice
We believe that in order for students to become resilient, resourceful, and responsible individuals they must be given the chance to wrestle with meaningful problems, guided towards effective collaboration, allowed to structure their own plans for completing long-term projects, and mentored in the art of communicating complicated ideas. Our pedagogy across the curriculum engages each of these essential goals.

The school's pedagogical approach emphasizes collaborative learning and communication skills at every grade level and across all disciplines. Students work together to solve problems in math; discuss ethics and write increasingly sophisticated papers in literature; and design, carry out, and present on experiments in laboratory sciences.

We expect students to engage enthusiastically with a full range of core subjects and electives, with admission to the school dependent on such a disposition. During their time at Proof School, students build considerable stamina for diving deeply into areas of study; struggling with and solving hard problems and difficult questions; and iteratively improving their work. Students develop independence and ownership of their work. Across everything we do is an emphasis that students be kind and proactively mindful of their community.

School Schedule
Students take five academic courses at a time, four of which are in the humanities and sciences. These humanities and science courses meet twice weekly for 80 minutes per session. Math courses meet for two hours per day, five days per week. Students take one math course at a time and progress through several math courses each year. Devoting each day to three long class periods provides time for discovery learning, in-depth writing, seminar discussions, collaborative work, and one-on-one interactions with teachers. Wednesday mornings and every seventh week of school are devoted to flex time, when we offer ungraded mini-courses and extended projects.

Assessment
Faculty provide extensive feedback throughout the year, cultivating a culture of iteration and growth. We rate students on two metrics:

- **Achievement** is related to successful completion of academic tasks, and reflects the quality of work, accuracy of results, and merit of academic output.
- **Disposition** refers to qualities or habits that lead to effective learning, such as effort, curiosity, engagement, persistence, organization, openness to new ideas, and classroom citizenship.

Transcripts reflect an average of ratings across the year for humanities and science classes.

Evaluation Scale
The school evaluates students on a scale of 1-5.

- **5** Fully meeting Proof School’s high expectations
- **4** Meeting Proof School’s essential expectations
- **3** Progressing towards expectations
- **2** Barely progressing to expectations
- **1** Failing to meet expectations

Evaluation Criteria
Proof School evaluates students on achievement (academic accomplishment) and disposition (relationship to learning).

Rank & GPA
Proof School does not calculate weighted GPAs and does not rank students.
High school students take a range of core courses that provide a robust liberal arts foundation. At the same time, students are afforded the latitude to pursue individual interests in a substantial manner.

Mathematics
Proof School’s mathematics curriculum emphasizes problem-solving, skill mastery, and communication. Students develop a foundation across all major fields of mathematics, including not only a calculus sequence that is common to secondary schools, but also an extensive curriculum in discrete math, college-level algebra, advanced geometry, analysis, and number theory.

Students progress through an enormous amount of mathematics thoughtfully and thoroughly; it is not uncommon at the upper levels for a student to grapple with a couple of difficult problems for an entire afternoon. Students work closely with one another and come to understand, through experience, the value of collaboration and communication. In many math classes, students prepare and make formal presentations of their work or write extended papers. We emphasize articulating one’s reasoning in a clear, concise manner at every level.

Our mathematics program is supplemented by talks and workshops, an annual school-wide AI tournament, a student-run problem of the week challenge, participation in a variety of regional and national math competitions, and two weeks of open-ended student research and presentations. Each year, students share their love of math through two student-led math festivals that are open to the public.

Core Courses in the Humanities & Sciences
Proof School offers a broad liberal arts education, with rigorous courses in literature, history, Latin, art, computer science, and science. Each course is offered at the advanced to college level.

The sequence of literature courses provides a survey of literature, and students develop increasingly sophisticated tools for rigorous, evidence-based writing, close reading of texts, and academic argumentation. Our history courses focus on primary texts and social science approaches to understanding the world, with connections to the present day. Our science sequence includes intensive courses on physics, chemistry, and biology; a student’s conceptual understanding precedes computational questions and is motivated by laboratory observations. All of our core courses aim to teach students transferable skills in communication and collaboration.

Electives
In grades 10, 11, and 12, students choose among elective offerings, including Project Studio, in which students research, propose, carry out, and share extended projects under the mentorship of faculty. Electives are developed based on faculty expertise and student interest. Examples of electives include creative writing, film studies, linguistics, data structures and algorithms, electromagnetism, and neuroscience.

Proof School does not offer AP classes. Students have taken 234 AP exams, which have included Biology, Calculus, Chinese, Chemistry, Computer Science, French, German, Literature, Music Theory, Economics, Physics, Psychology, Statistics, and US History, with the following score breakdown across all tests:

<table>
<thead>
<tr>
<th>AP Score</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td># of tests</td>
<td>0</td>
<td>5</td>
<td>13</td>
<td>47</td>
<td>169</td>
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Class of 2020 SAT Averages

<table>
<thead>
<tr>
<th></th>
<th>Verbal</th>
<th>Math</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>736</td>
<td>770</td>
<td>1506</td>
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</tbody>
</table>

Class of 2020 SAT Averages
Now in our fifth year of operations, we continue to build our offerings across the curriculum, with new courses in math, history, literature, science, and computer science.

**Mathematics**

### Problem Solving & Discrete Math
- Problem Solving 2
- Combinatorics 1, 2
- Discrete Probability*
- Theory of Partitions*

### Algebra
- Algebra 2A, 2B
- Algebra: Conics & Inequalities
- Axiomatic Theory of Numbers
- Number Systems
- Group Theory A*, B*
- Ring Theory*
- Linear Algebra A*, B*
- Fields & Galois Theory*

### Geometry
- Euclidean Geometry 2, 3
- 3D Coordinate Geometry*
- Convex Geometry*
- Point-Set Topology*
- Knot Theory*

### Analysis
- Exponents/Logs/Trig
- Differential Calculus
- Integral Calculus
- Series & Topics in Calculus
- Differential Equations*
- Numerical Analysis*
- Asymptotic Analysis*
- Real Analysis*
- Multivariable Calculus*
- Topics in Analysis*

### Number Theory
- Number Theory 2, 3*
- Number Theory Lab
- Quad. Forms & Number Fields*
- Topics in Number Theory*
- Theory of Continued Fractions*
- Algebraic Number Theory*

### Other Math Courses
- Problem Writing Seminar
- Statistics A, B
- Computability & Complexity*
- Game Theory & Voting Systems
- Foundations of Logic*

### Humanities & Sciences

#### History
- World History: Human Rights
- World History: Modernization
- US History: Civil Rights
- US History: The Supreme Court

#### Literature
- Advanced Literature
- Literature & Ethics
- Creative Writing
- Literary Arts: Theater
- Literary Arts: Reading Film
- American Literature
- Literature: Space and Place
- Literature: Global Feminisms
- Literature: Metamorphoses
- Literary Research: Magical Realism

#### Lab-Based Sciences
- Physics: Mechanics
- Chemistry
- Physics: Special Relativity
- Biology
- Physics: Electromagnetism
- Neuroscience

#### Foreign Language
- Latin 1, 2
- Latin: Directed Study

#### Arts
- Art
- Art
- Art

#### Computer Science
- Computer Science 1, 2
- Data Structures & Java
- Computer Graphics Studio
- Data Structures & Algorithms
- CS: Directed Study
- Structure & Interpretation of CS

#### Mentored Projects
- Project Studio

### Additional Humanities & Science Courses

- Linguistics

* Designates a college-level course

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**College Matriculation, Classes of 2018 and 2019**

Carleton College, Harvard University, MIT (3), Stanford University, UC Berkeley, UCLA, UC Santa Cruz, Univeristy of Chicago, and University of Waterloo.