Position Announcement
in the mathematical sciences

Proof School invites applications for a teaching position to begin July 2024. Proof School is an independent school located in San Francisco that provides a liberal arts education for students in grades six through twelve who love math.

PROOF SCHOOL

973 Mission St, San Francisco
www.proofschool.org
work@proofschool.org

Faculty at Proof School have the opportunity to work with some of the most mathematically talented and motivated students in the San Francisco Bay Area. Our teachers develop innovative math curriculum and help to shape a small school community. Demonstrated excellence in teaching, experience with secondary school students, and problem solving ability are all essential. Average class size is thirteen students; the standard teaching load is outlined on the next page. Salaries are competitive and commensurate with experience. We anticipate hiring one or two math teachers for the 2024-25 academic year.

To apply for a position on the math faculty, prepare a cover email addressed to `work@proofschool.org` indicating why you are interested in the position and attach the five items below. Once an application has been submitted we are not able to replace documents with new versions at a later time.

1. Provide a current CV with educational background, degrees earned, past teaching responsibilities, scholarly work, other relevant experience with middle or high school students, names and contact info of two or three references we may speak with, and any further information desired.

2. Submit transcripts for all college and graduate work completed. (Unofficial copies are fine.)

3. Complete the *Chart of Teaching and Employment Preferences* on the next page.

4. Compose a lesson plan for a 2-hour class that introduces/involves matrix multiplication. Assume that your audience consists of strong students who are familiar with necessary prerequisites. Structure your lesson to give students the opportunity to learn material, practice techniques, and engage in a variety of classroom modes. (Students can access laptops. No homework is assigned.) Include specific examples, problems, or activities. Please limit your response to two pages.

5. For any positive real number x, let $\lfloor x \rfloor$ denote the integer part and let $\langle x \rangle$ be the decimal part. Given a real number $a_0 > 0$, define a sequence via $a_{n+1} = \lfloor a_n \rfloor \langle a_n \rangle + 1$ for all $n \geq 0$. Hence if $a_0 = 3.14$, then $a_1 = (3)(.14) + 1 = 1.42$. Show that regardless of the initial value a_0, the sequence eventually stabilizes, meaning that $a_{n+1} = a_n$ for some n. Then describe how you might run a miniature student research project based on this problem. Feel free to write up any other results you discover. Naturally, all results and ideas you present must be your own.

Completed applications will be acknowledged via an email; please submit documents early to receive full consideration. Proof School will begin reviewing applications in January 2024 and continue until the position is filled. Candidates are encouraged to notify Proof School if they accept offers elsewhere. Individuals conducting a broad academic job search may have additional materials they wish to submit, such as a teaching or research statement—these are welcomed but not required.

Proof School is an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, marital status, national origin, age, mental or physical disability, military or veteran status, or any other characteristic protected by law. Women and minorities are especially encouraged to apply.

Chart of Teaching Preferences

At Proof School the academic year is divided into five blocks, bridged by "build weeks" featuring themed activities, student workshops, or field trips. Within a given block math courses generally belong to a single broad category, such as algebra, analysis, or geometry. Therefore teachers must be able to teach across the math curriculum, although not necessarily at the highest level within each category. Classroom teaching styles vary, but typically include components such as small group work on handouts, individual check-ins, review games, interactive lecture, and other creative formats.

To facilitate planning, please indicate your teaching preferences for *every* afternoon course listed below using the following guide, either by making annotations directly on this PDF file or by printing, completing, and scanning this page.

E = I am eager to teach this course, because of both a strong background and interest in the subject.

W = I would be fine teaching this course, having adequate background or the willingness to become sufficiently familiar with the subject.

R = I am reluctant to teach this course, for instance due to insufficient background or lack of interest in the subject.

_____ Problem Solving	_____ Basics of Geometry	_____ Intro Number Theory
_____ Combinatorics	_____ Euclidean Geometry	_____ Quadratic Reciprocity
_____ Graph Theory	_____ Projective Geometry	_____ Elliptic Curves
_____ Discrete Probability	_____ Exps, Logs and Trig	_____ Game Theory
_____ Algebra 1 or 2	_____ Diff/Integral Calculus	_____ Topology
_____ Polynomials/Inequalities	_____ Multivariable Calculus	_____ Statistics
_____ Linear Algebra	_____ Differential Equations	_____ Intro to Python
_____ Group Theory	_____ Intro to Real Analysis	_____ Data Structures

Employment Preferences

A standard load for math teachers at Proof School consists of teaching a single two-hour math class each afternoon (for a total of five math courses, one per block) along with service to the school such as offering mini-courses, supervising club activities, and chaperoning students to and from public transportation. We are also open to part-year and intern arrangements. Indicate your preference below.

☐ I am interested in a full-year standard teaching load. Salary range for first year of employment in 2024-25 is $64,453 to $85,938; salary range for the second year in 2025-26 is $66,387 to $106,219.

☐ I am available on a part-year basis and can teach math courses during certain parts of the academic year. (Please contact us first to determine what arrangements are feasible.)

☐ I am interested in a year-long internship at Proof School. (Available to college graduates who are 25 years old or less. In this case, please contact the school for a separate, simplified application.) Compensation for a 2024-25 Proof School internship is set at $57,322.