Advanced eXploration, Inquiry, and Observation in Mathematics

Program Counsellor

AeXIOM
Summer 2027
University of Waterloo and Renison University College

Mentor the next generation of mathematical thinkers

AeXIOM is a four-week residential summer program in which motivated high school students learn to think like mathematicians through discovery-based number theory, rigorous proof-writing, and self-directed problem-solving. **Program Counsellors** are undergraduate mathematicians who mentor small groups of participants, give feedback on their work, help facilitate academic sessions, and help keep the residential community safe, welcoming, and engaged.

Program dates	July 5 – 30, 2027	**Mentoring ratio**	3 to 4 students per counsellor	**Live and work**	On campus in Waterloo, Ontario	**Screening**	Vulnerable sector check required

Key responsibilities

01 Academic mentorship

- Build mentoring relationships with 3 to 4 assigned students, meeting regularly to discuss progress, challenges, and learning goals.
- Encourage independent problem-solving, intellectual risk-taking, and persistence with unfamiliar problems.
- Monitor engagement and progress, offering extra guidance when needed.

02 Feedback on student work

- Review problem sets and give constructive feedback to a consistent standard.
- Identify misconceptions and spot opportunities for deeper exploration.
- Help students articulate and refine their reasoning, in written solutions and in presentations.

03 Seminars and workshops

- Lead or co-facilitate seminars, workshops, tutorials, and small-group problem-solving sessions.
- Support faculty and instructors in delivering the academic program.
- Help students connect ideas across topics and participate actively.
- Organize mini-courses and engage with other students and counsellors in peer learning to advance your own mathematical knowledge.

04 Community and role modelling

- Foster a collaborative, inclusive culture of respectful discussion and peer learning.
- Support academic events such as lectures, presentations, and enrichment activities.
- Model enthusiasm for mathematics, professionalism, and integrity, representing the values of the University of Waterloo and AeXIOM.

05 Planning and collaboration

- Attend staff orientation and training before the program starts, along with planning meetings and program debriefs.
- Work with faculty, instructors, fellow counsellors, and Renison peer leaders and Dons.
- Share observations on student progress and ideas for improving the program.

06 Residence and student support

- Conduct evening check-ins and residence rounds; document absences and late returns, escalating to program leadership as required.
- Act as a first contact for minor concerns, connecting students with Renison and program supports (wellness, accessibility, residence matters, lockouts).
- Refer significant wellbeing concerns promptly to designated staff.
- Join social and recreational activities voluntarily.

Qualifications on reverse →

Who we are looking for

Undergraduates who love mathematics, can explain it well, and want to help talented high school students see firsthand how to discover, create, and utilize mathematics.

Education

- At least one year of undergraduate study in Mathematics, Computer Science, Statistics, Mathematical Physics, or a related quantitative field.
- Preference for senior undergraduates with relevant coursework, exceptional mathematical achievement, or mentoring, teaching, or tutoring experience.

Experience

- Tutoring, teaching, mentoring, or facilitating learning in mathematics or a related field.
- Working with highly motivated secondary school students (an asset).
- A demonstrated ability to explain complex mathematical ideas clearly.

Knowledge and skills

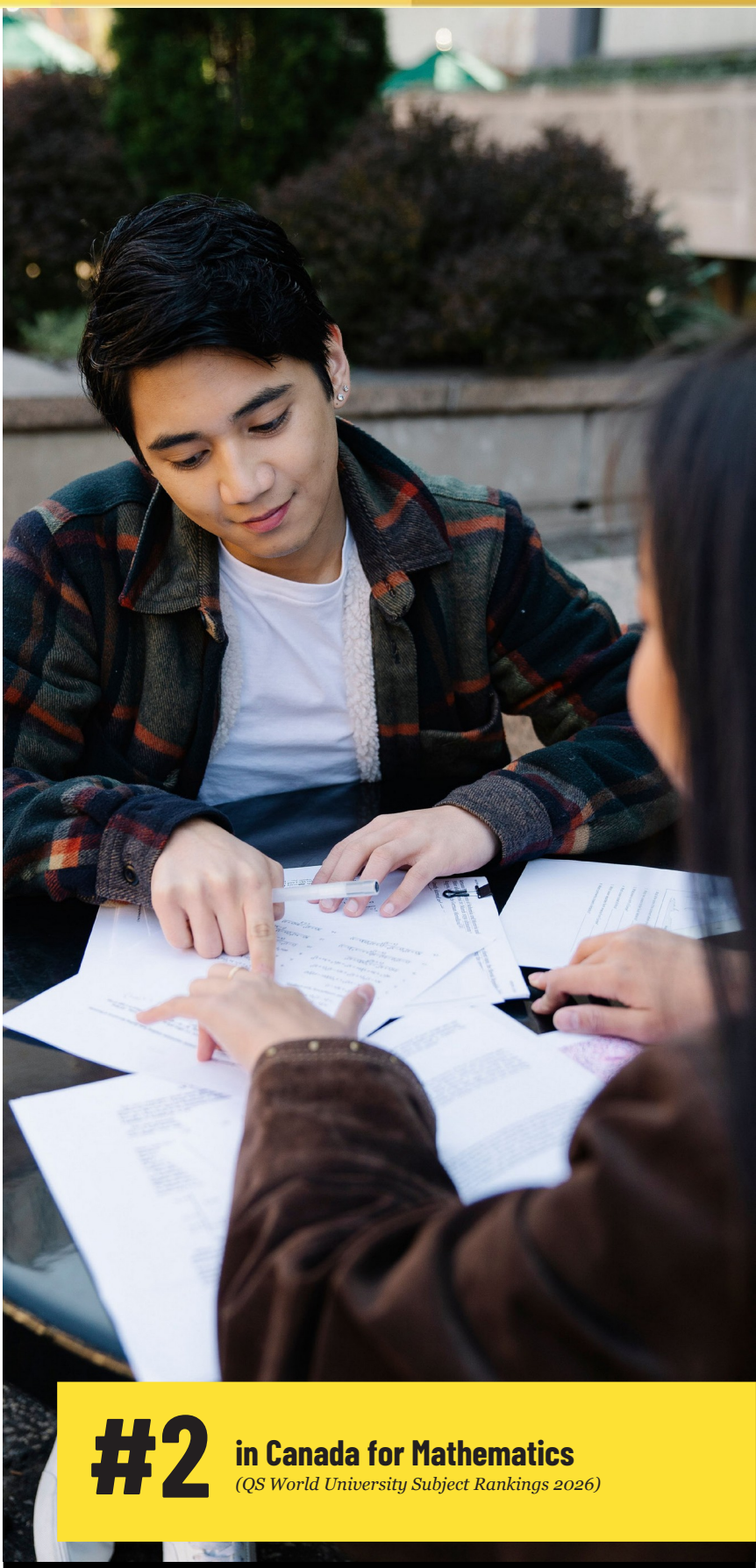
- Strong mathematical problem-solving.
- Communicating mathematics to learners at varying levels of experience.
- Excellent interpersonal and facilitation skills, including constructive, developmental feedback.
- Strong organization and time management.
- Commitment to building an inclusive and respectful learning environment.

Required | A vulnerable sector check is required for all counsellors.

July 5 – 30, 2027

Learn more about AeXIOM and its program details. Scan the QR code or visit **uwaterloo.ca/aexiom**.

AeXIOM



#2 in Canada for Mathematics
(QS World University Subject Rankings 2026)

UNIVERSITY OF WATERLOO | FACULTY OF MATHEMATICS

RENISON UNIVERSITY COLLEGE
AFFILIATED WITH THE UNIVERSITY OF WATERLOO