

Student Numeracy Assistance Centre (SNACK)



- SNACK two-year pilot complete.
- Visits to peer tutors are increasing.
- Student feedback is extremely positive.

$$y = \frac{dx}{dz} \quad T = \frac{3\pi}{2} \quad r + y = \left(\frac{y}{2}\right) \quad \frac{dx}{dy} = \lim_{\Delta y \rightarrow 0} \frac{\Delta x}{\Delta y} \quad \int \frac{dx}{x} = \ln|x| + C$$

Faculty of Liberal Arts & Professional Studies

FREE TUTORING

Student Numeracy Assistance Centre at Keele (SNACK)

1对1免费数学辅导

DROP-IN SUPPORT SCHEDULE

ECON-ADMS-ITEC-NUMERACY-STATS-EXCEL

Visit yorku.ca/laps/snack/ or email snack@yorku.ca for more information

The Motivation to Create SNACK

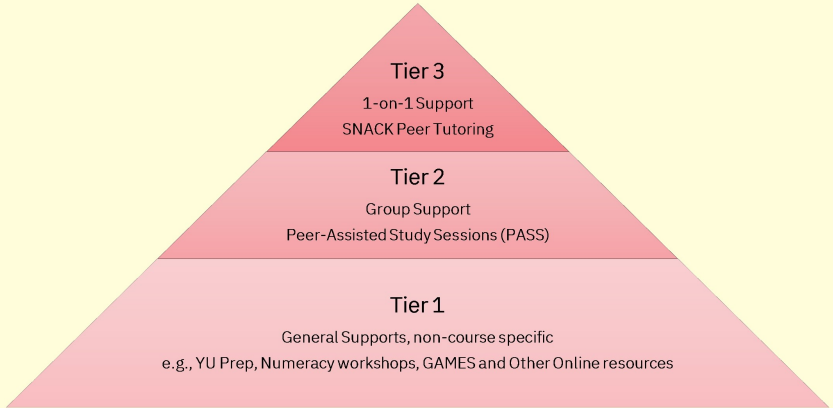
- Many students in ADMS and ECON struggled with math.
- Supporting these at-risk students with pre-existing resources was a challenge.
- Counter predatory tutoring and academic dishonesty for hire.

Major Initiative: Offer Peer Tutoring

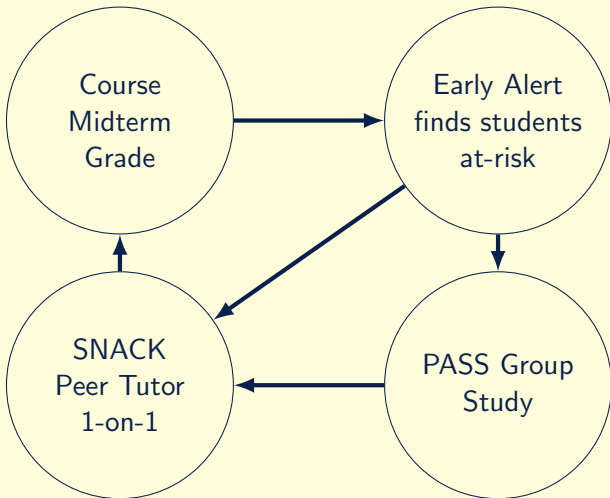
VanLehn 2011, Bloom 1984 found tutoring improves student outcomes from 0.7 to 2.0 standard deviations.

- Hire upper-year students to tutor first and second-year courses.
- Goal: foster a learning community to advance numeracy and support at-risk students.

LA&PS Numeracy Support Framework

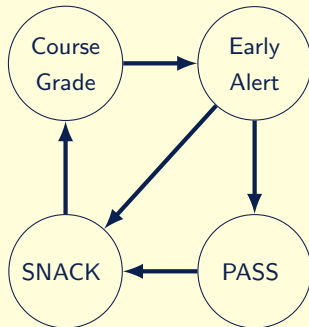


LA&PS Numeracy Support Framework



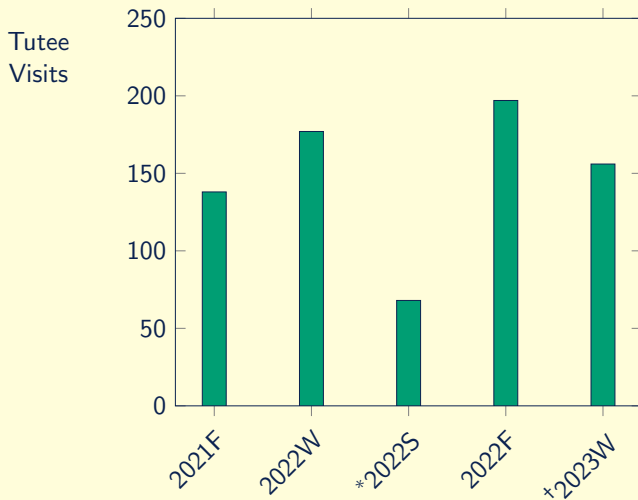
LA&PS Numeracy Support Framework

- Mutually reinforcing tiered supports
- Maintain communication between staff, faculty, peers with regular meetings.
- SNACK peer tutors meet students where they are.



Measuring Success

- Lawson, Grove, and Croft 2020, Mills, Rickard, and Guest 2022 warn there is no perfect measure of success for university math centres although there is plenty of data.
- Success at SNACK was measured by tutee visits and feedback.

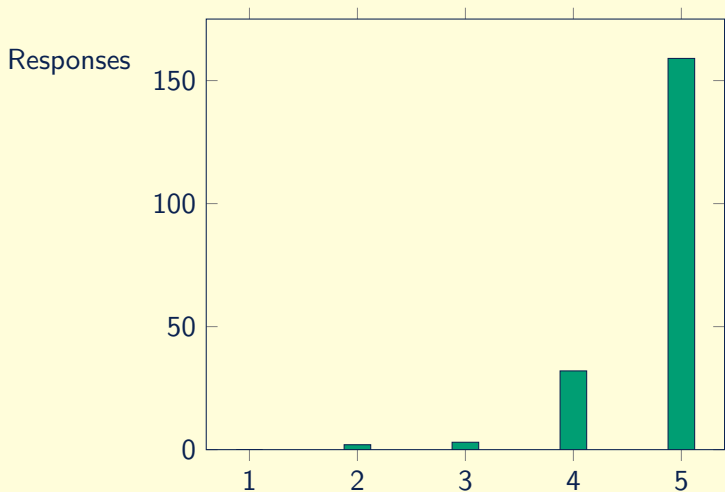


* Peer tutoring hours were limited.

Student Visits to SNACK Peer Tutors

	2021 Fall	2022 Winter	2022 Summer*	2022 Fall	2023 Winter
ECON	103	101	24	100	70
ADMS	5	37	22	46	33
OTHER	30	39	22	51	53
TOTAL	138	177	68	197	156
STUDENTS	62	95	24	111	103

* Summer peer tutoring hours were limited.



Q: How helpful was your SNACK session today?

Moving Forward with SNACK

- Maintain a **perpetuating learning community** where learners of all skill-levels find assistance.
 - Recruit talented students to become peer tutors.
 - Investigate why a few peer tutors receive a disproportionate number of tutees.
 - Raise awareness to enlarge the community.
 - Intentionally schedule peer tutor times to sync with student demand.

Moving Forward with SNACK

- A new physical space is available in Founders College.
 - Determine how to balance in-person with online peer tutoring.
 - Will students travel to Founders from LA&PS depts?
- Leverage Generative AI, LLMs to enhance peer tutoring.

References



Bloom, Benjamin S (1984). "The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring". In: *Educational researcher* 13.6, pp. 4–16.



Lawson, Duncan, Michael Grove, and Tony Croft (2020). "The evolution of mathematics support: a literature review". In: *International Journal of Mathematical Education in Science and Technology* 51.8, pp. 1224–1254. DOI: 10.1080/0020739X.2019.1662120. eprint: <https://doi.org/10.1080/0020739X.2019.1662120>. URL: <https://doi.org/10.1080/0020739X.2019.1662120>.



Mills, Melissa, Brian Rickard, and Bob Guest (2022). "Survey of Mathematics Tutoring Centres in the USA". In: *International Journal of Mathematical Education in Science and Technology* 53.4, pp. 948–968. DOI: 10.1080/0020739X.2021.1934728.



VanLehn, Kurt (2011). "The relative effectiveness of human tutoring, intelligent tutoring systems, and other tutoring systems". In: *Educational psychologist* 46.4, pp. 197–221.