Reimagined Use of Space in a Math Circle: from Serendipity to Intentionality

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Math Renaissance Math Circle

Philadelphia Area Joyful Math Collaborative

LAND ACKNOWLEDGEMENTS and more importantly….

Lenapehoking (aka Philadelphia)

We acknowledge that Math Renaissance works on the unceded Indigenous territory of the Lenni Lenape people. Despite being forcibly removed from a state that still doesn't recognize tribes, the Lenape were and continue to be active stewards of this land. We affirm Indigenous sovereignty and with this Land Acknowledgement pledge our intention to do work that not only does no further harm to Indigenous communities but also benefits Indigenous students.

Nacotchtank/Tayak (aka Washington DC)

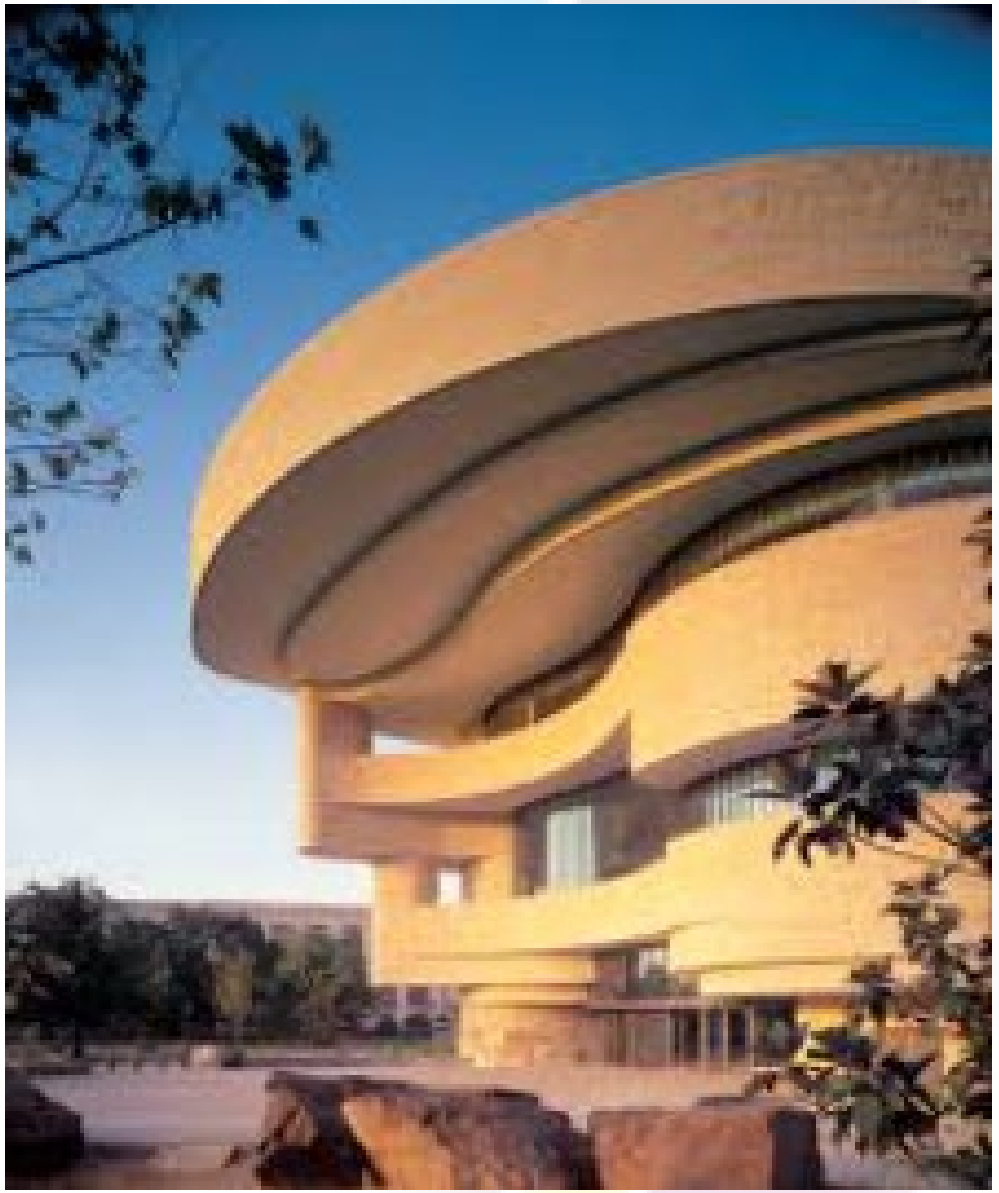
At this moment, we are literally standing on the traditional land of the Nacotchtank, Piscataway, and other Indigenous people.

In 1608 there was a Nacotchtank village on the future site of Capitol Hill. There is no living Nacotchtank lineage left.

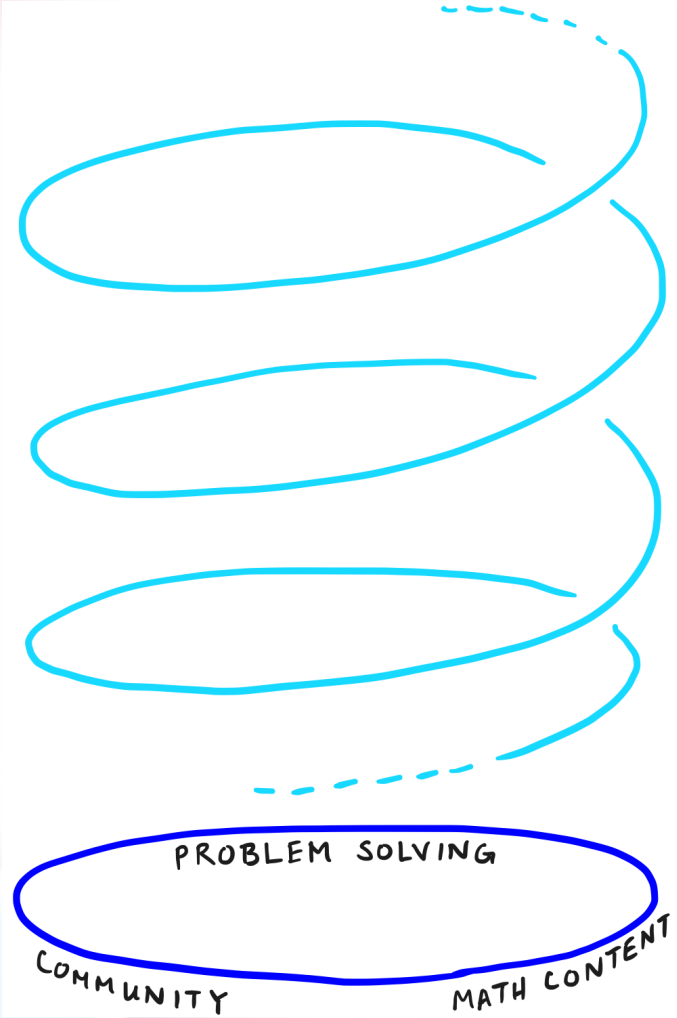
The Piscataway people were farmers, many of whom owned large tracts of land. THEY ARE STILL HERE.

ACTION:

National Museum of the American Indian on the National Mall



Journal of Math Circles Special Issue on the Kaplans



https://digitalcommons.cwu.edu/mathcirclesjournal/

LOCATION 1: St Thomas Whitemarsh

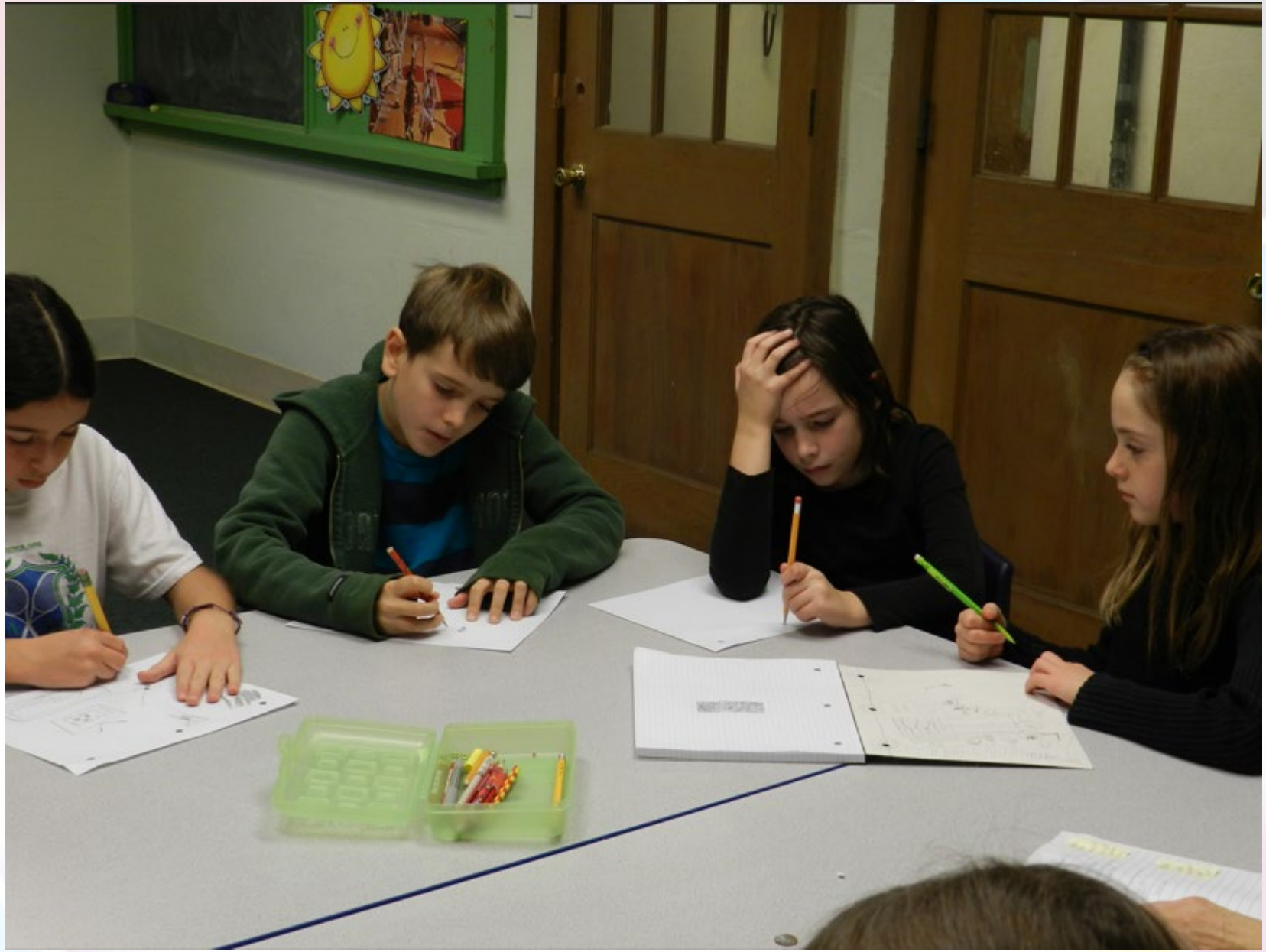
"The Little Church at White Marsh," With permission by St. Thomas' Episcopal Church, Whitemarsh, PA

https://battleofwhitemarsh.weebly.com/important-places.html

CHALLENGE: board not near seats

Plato’s cave (The Signaling Problem, 6-week course)

See the Journal of Math Circles for details about The Signaling Problem



CHALLENGE: windows

Euler, 6-week course

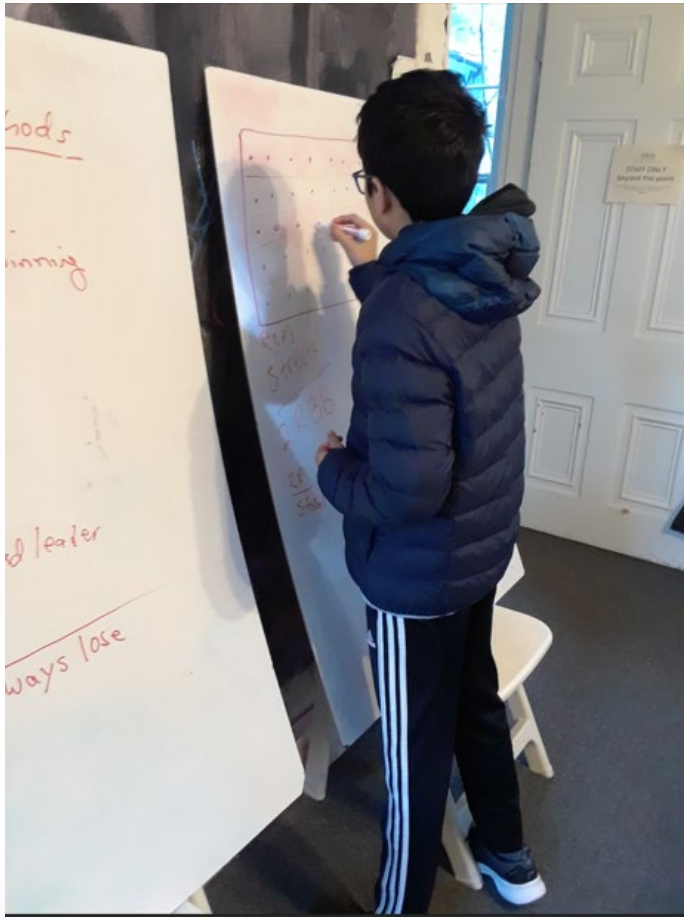
LOCATION 2: Awbury Arboretum Cope House

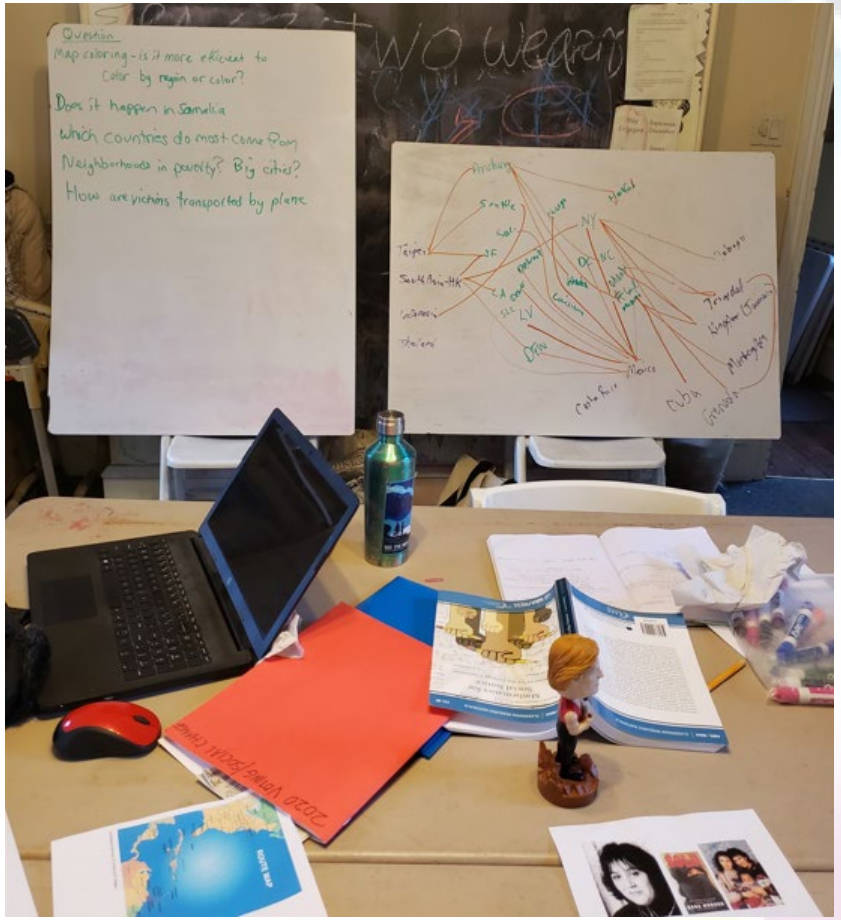
https://awbury.org/wp-content/uploads/2025/02/DSC_0350-1-scaled.jpg

CHALLENGE: unusable chalkboard

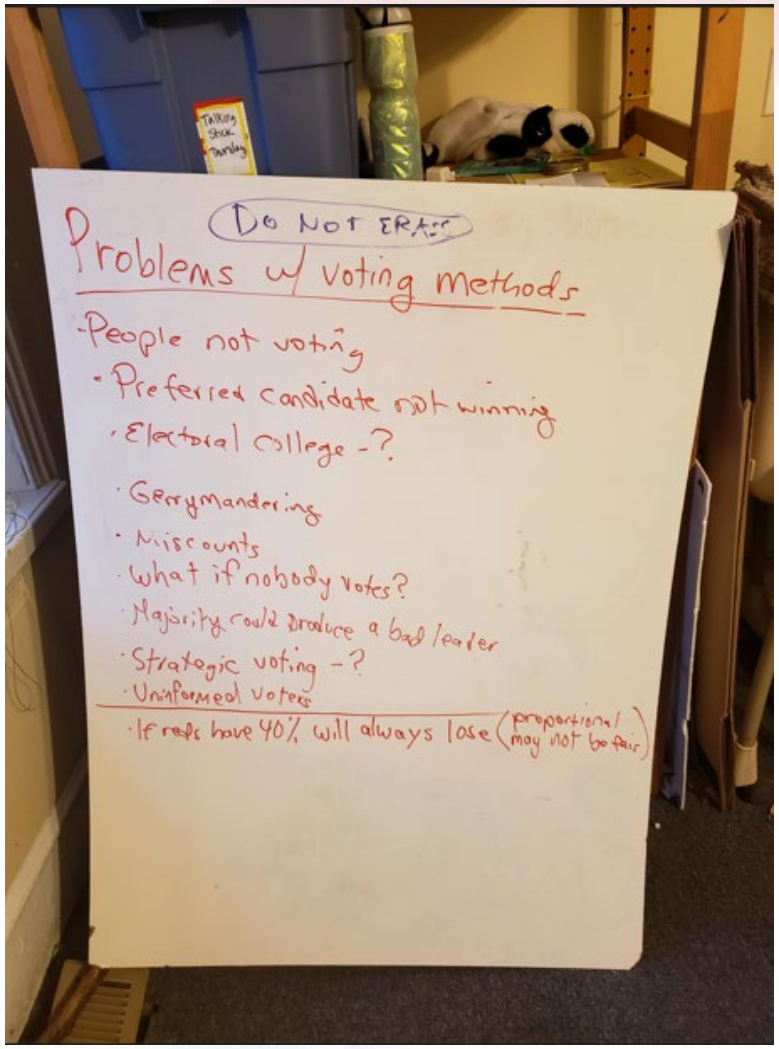
Cantor, 8-week course

CHALLENGE: not enough board space

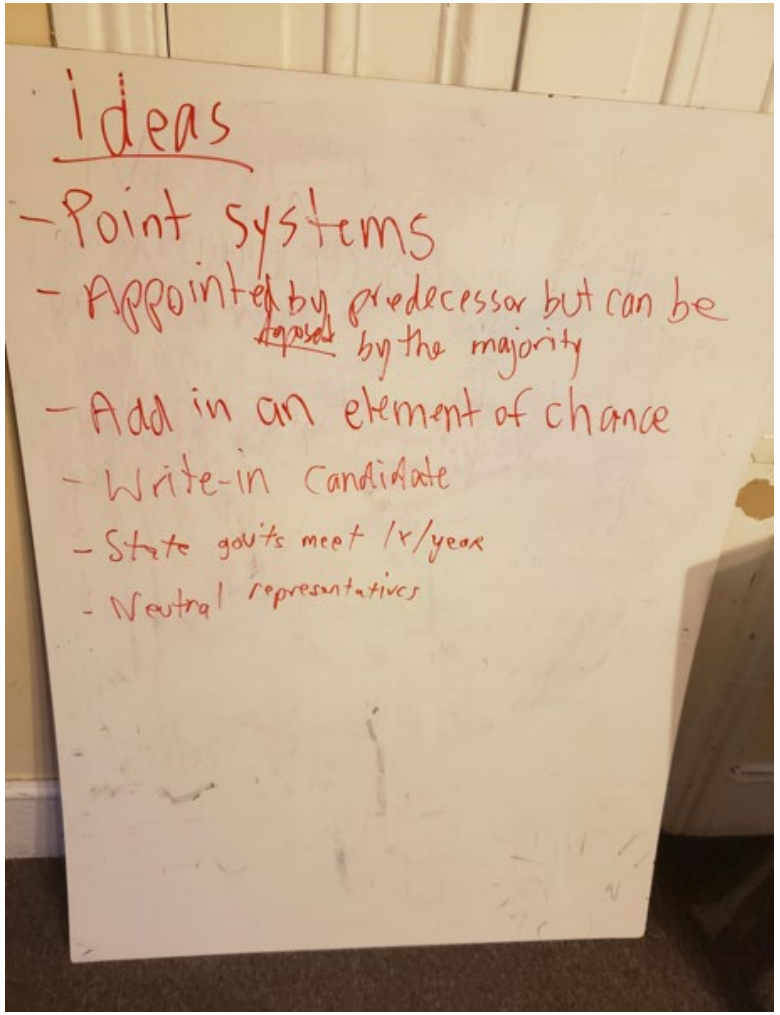




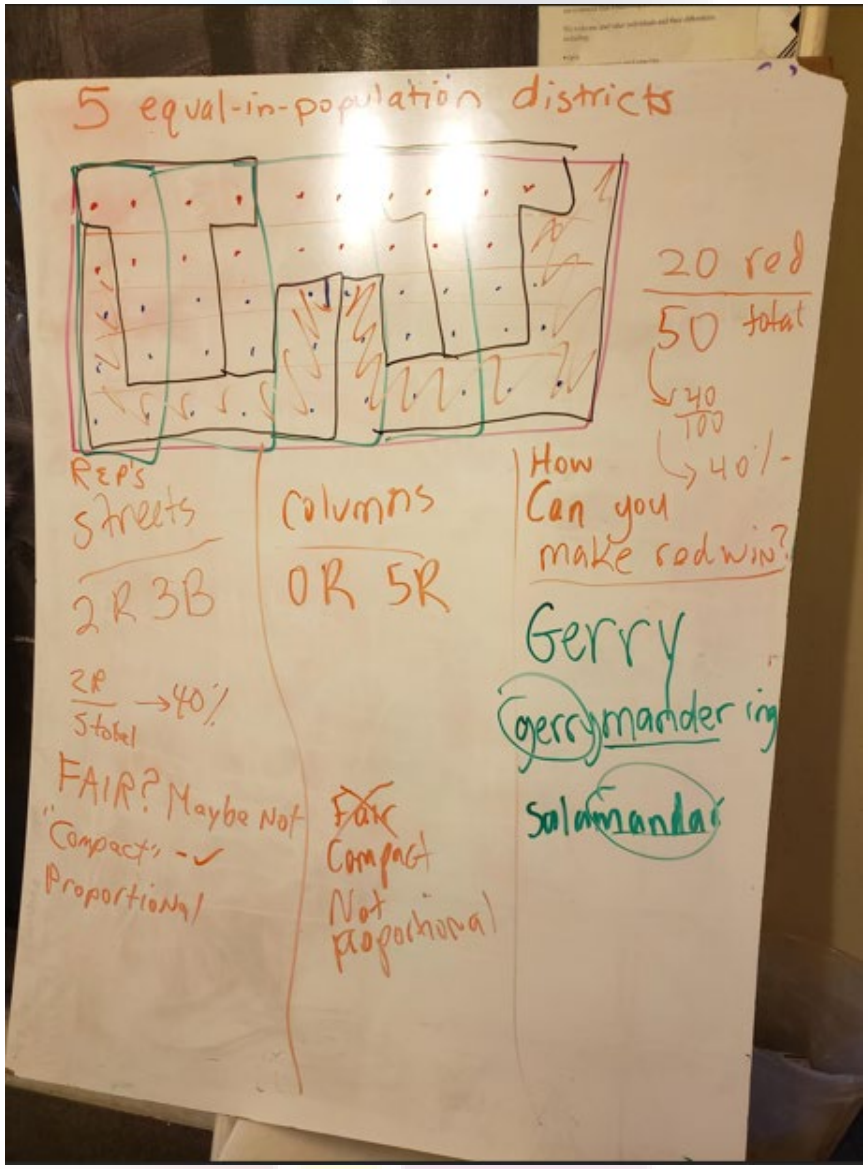
The Mathematics of Social Change, 8-week course



shelf



door



trash can

CHALLENGE: catering event, furniture removed

https://awbury.org/wp-content/uploads/2025/01/DSC_0004-scaled.jpg

Probability (Gardner, 6-week course)

CHALLENGE: weather too nice outside

G4G15

As is our tradition, we'll end this academic year with our 13th annual "picnic math course." G4G is Gathering4Gardner, "a community of people who share Martin Gardner's interests and was founded by Tom Rodgers, a Gardner fan [illegible] puzzle collector. Gardner is celebrated and honored for popularizing recreational mathematics, bringing delightful, magical, and wondrous ma[illegible]to laymen and mathematicians, scientists, and engineers." In this course, participants will open the gift exchange bag from G4G15, the 1[illegible]t met in Atlanta in 2024. The "puzzles, magic tricks, artwork, papers, novelty items, books, etc" make up "a collection of items Martin G[illegible]ght find intriguing." We'll explore the mathematical foundation underlying the items in this collection that the participants find intriguing.

Tuition: $93.75
Lovett Library, 6945 Germantown Ave, Philadelphia, PA 19119

Register Now!

Location	Day	Month	Date	Time	Class	Approx. Ages
Lovett Library	Tues	May	20	3:35- 4:50 p.m.	1	9-17
Lovett Library	Tues	May	27	3:35- 4:50 p.m.	2	9-17
Lovett Library	Tues	Jun	3	3:35- 4:50 p.m.	3	9-17

CHALLENGE: “nowhere” to prop up board outside

All-time greatest hit: whiteboards on the ground!

CHALLENGE: nothing to write on

the river

River Crossing Problems, 6-week course

CHALLENGE: outdoor catering event, nothing to sit on inside or outside

https://www.weddingwire.com/biz/portico-awbury-arboretum/ff293a7de74a8bd1.html

CHALLENGE: class moved to a very cold art studio

LOCATION 3: Awbury Arboretum Agricultural Village

https://whyy.org/articles/neighbors-don-t-like-the-look-or-location-of-awbury-arboretum-s-new-modular-classrooms/

steps!

Actually a pretty nice room…

CHALLENGE: chairs too small for older students

Number Systems, 6-week course

CHALLENGE: class in a kitchen, no board

Chromatic Number of the Plane, 5-week course

no rugs!

This room was great for moving around…

CHALLENGE: the window…

… needed firmer BOUNDARIES

- Know your students (in advance)!
  - “Is there anything I should know about how your child learns?”
- Sit on towel or mat or ground or X instead of random places on ground or grass
- Give verbal spatial instructions
  - “Make sure you have exactly 3 tiles between you and your neighbor”
- Have (enforce!) another adult in the room at all times

MATH EXPERTISE AND GOOD TEACHING SKILLS ARE NOT ENOUGH!

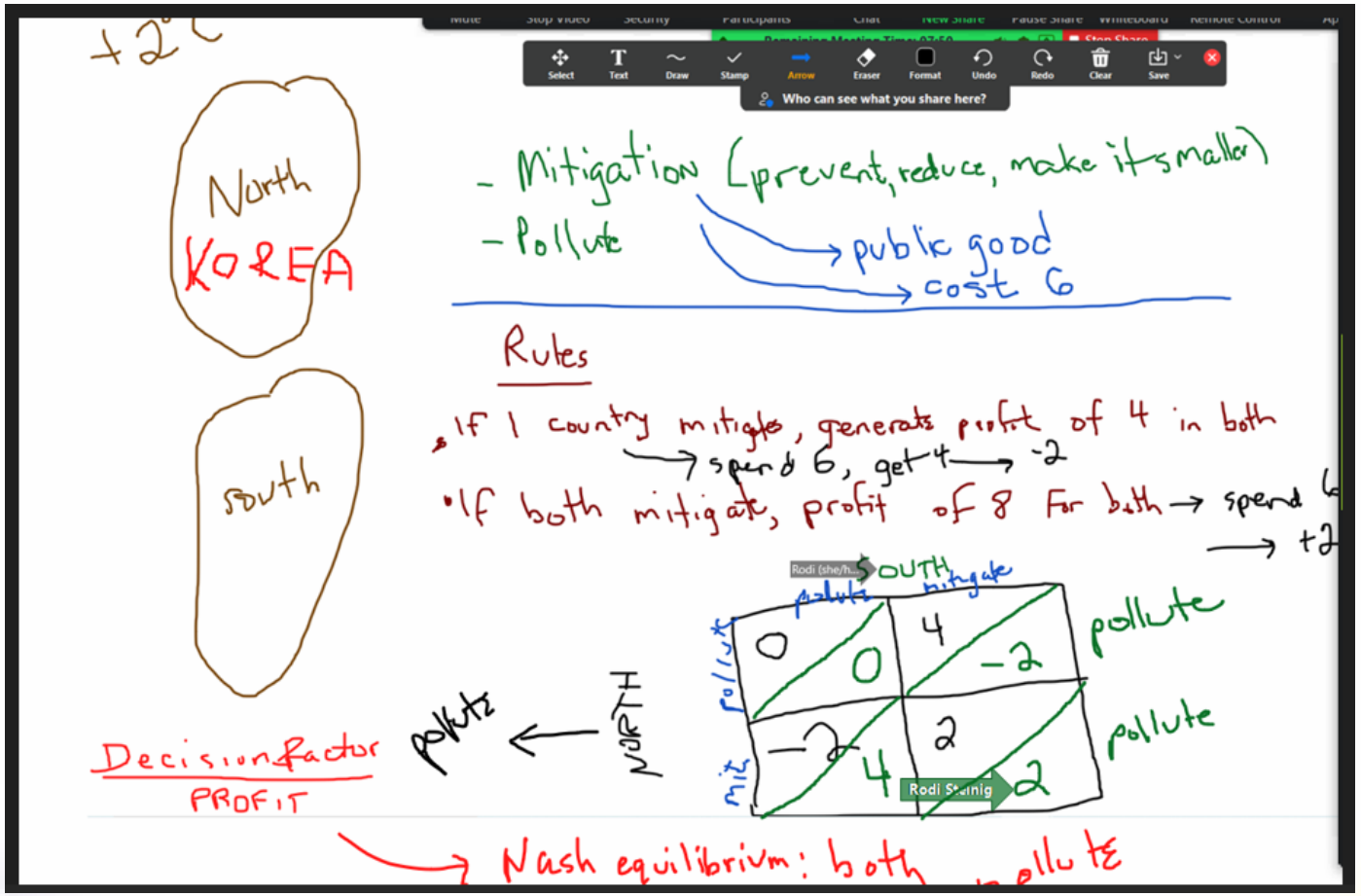
CALLENGE: hard time sitting still

https://www.tclf.org/landscapes/awbury-arboretum

SIDEWALK CHALK!

No Three in a Line Problem

LOCATION 4: no comment



Applied Mathematics, 8-week course

LOCATION 5: Lovett Park

CHALLENGE: no board

(You know what we did!)

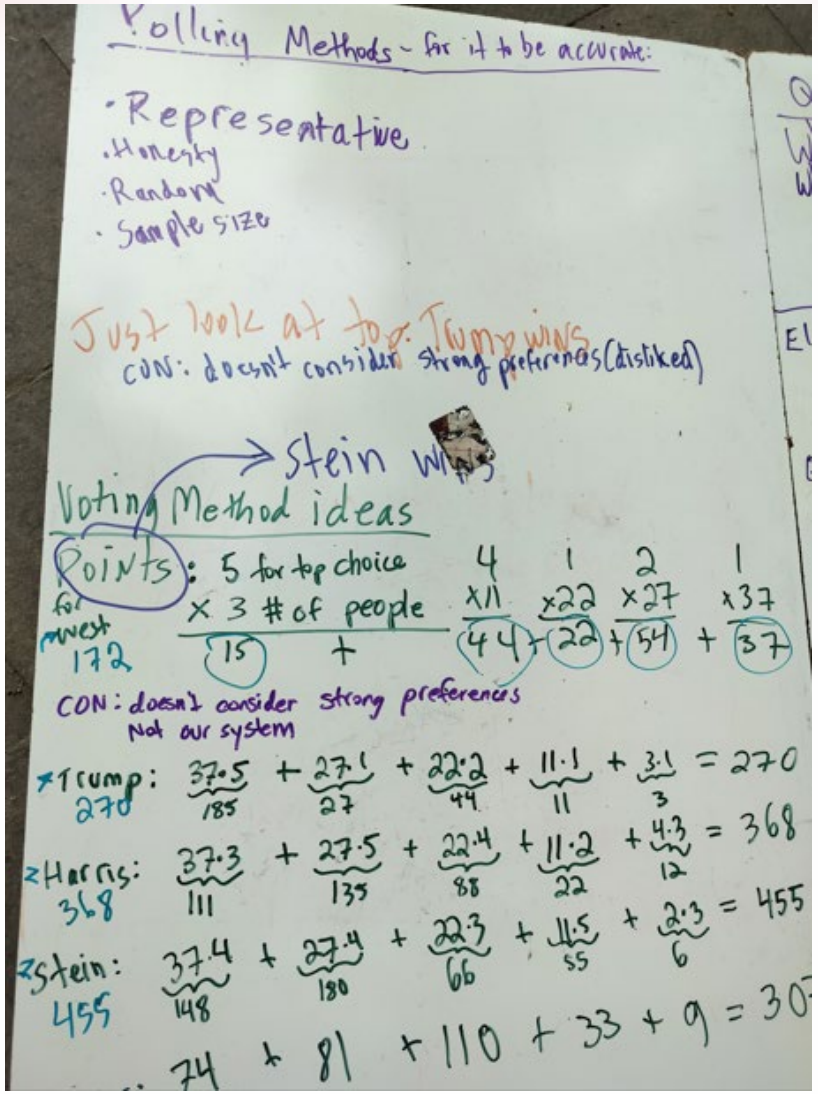
MU puzzle (Axioms of Mathematics, 6-week course)

Tracking mathematical thinking

ASSUMPTIONS … CONJECTURES … QUESTIONS

gives “access to the benefits of democracy”

Chokwe Sona patterns (Combinatorics, 5-week course)



The Mathematics of Voting Methods, 6-week course

CHALLENGE: traffic noise and sirens

Algebraic Thinking, 6-week course

CHALLENGE: broken glass

Venn diagrams (Axiomatic Set Theory, 6-week course)

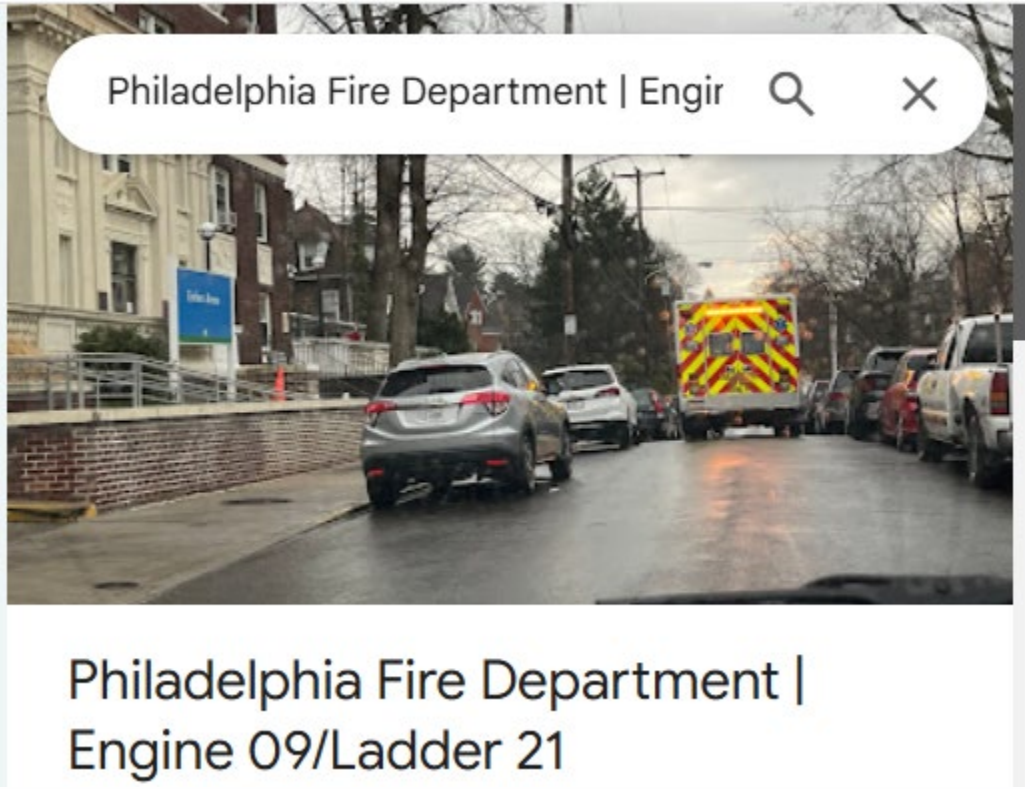
Students eventually took ownership of the sweeping responsibility

CHALLENGE: damp outside

Tree canopy

Dealbreakers (for some)?

CHALLENGE: traffic noise and sirens



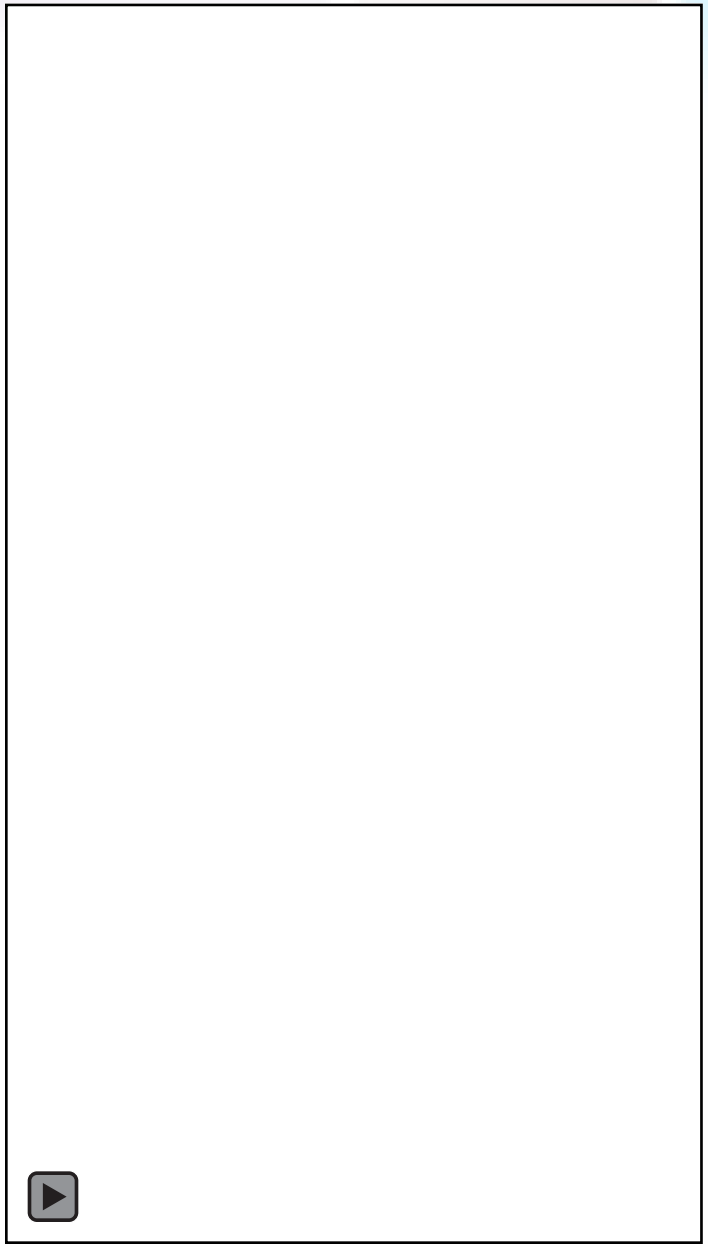
CHALLENGE: it’s cold out

LOCATION 6: Temple University Ambler

“Would it be okay if we want you to teach outside?”

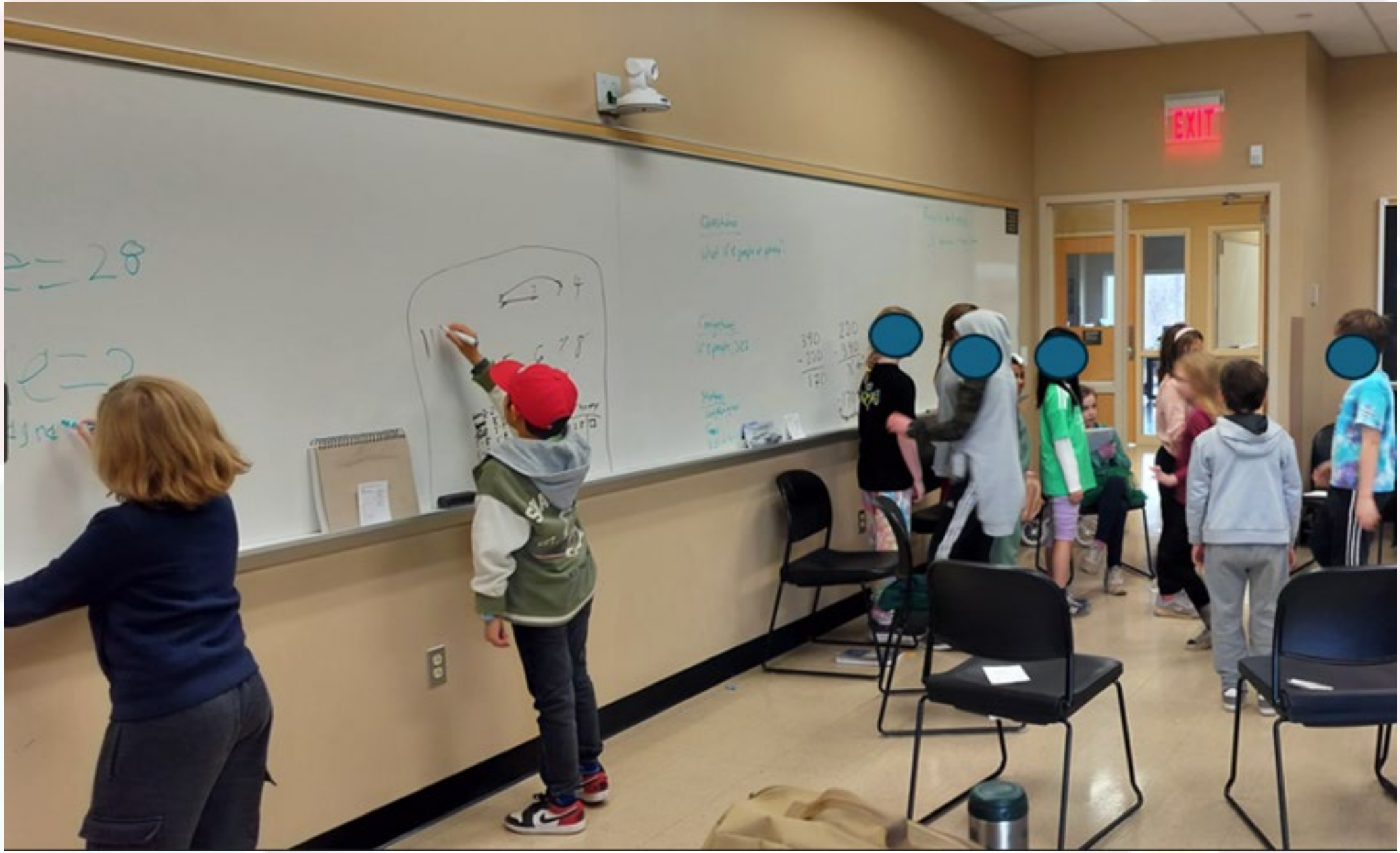
4 whiteboards on the ground!

CHALLENGE:



NEW CHALLENGE:

“**Regarding sidewalk chalk:** what you saw on campus was a special, one-time welcome activation for incoming Temple University students and isn't our norm. I've spoken with leadership and, if you'd like to use chalk for a single lesson, we can accommodate that in designated areas. Please let me know the date you'd like to do this and please refer to the attached map for where chalk will be permitted.”



handshake problem

CHALLENGE: closed group

Nothing is perfect

Don’t let the perfect be the enemy of the good

Please contact me!

Rodi Steinig

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Proposed Math Circle Satellite Event adjacent to International Congress of Mathematics

ICM 2026

PHILADELPHIA

International Congress of Mathematicians

American Institute of Mathematics

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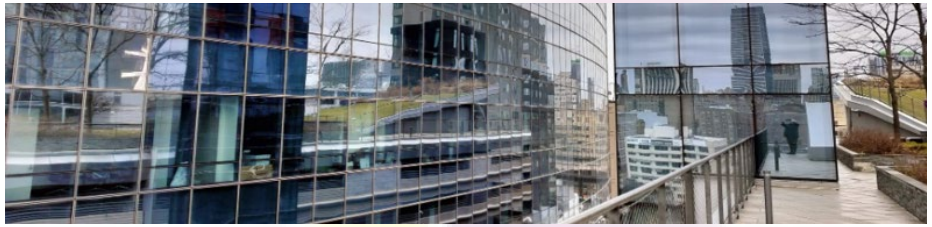
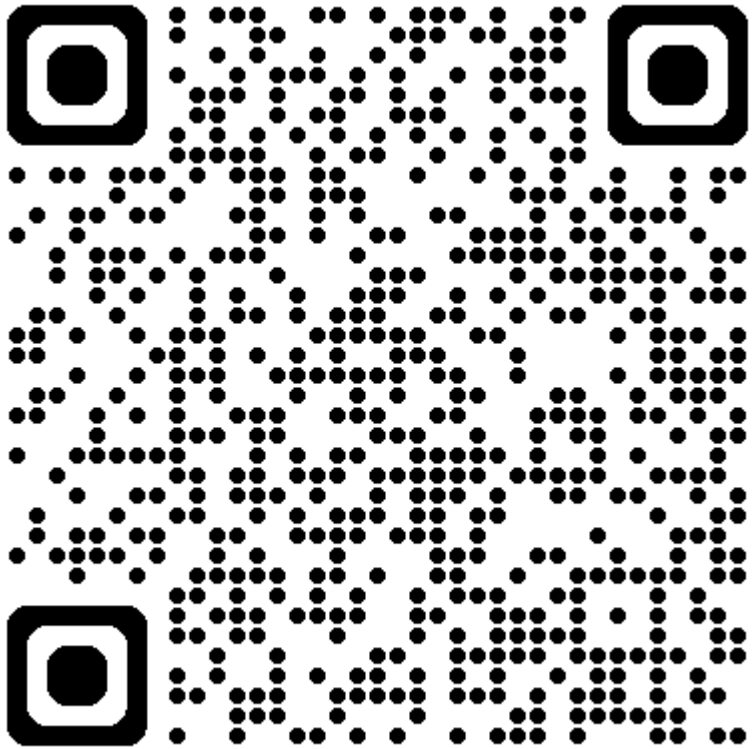


PAJMC (Philadelphia Area Joyful Math Collaborative)

Math Renaissance Course Topics



https://mathrenaissance.com/math-circles/