

# INQUIRY-BASED LEARNING PROBLEM SETS IN AN OUTREACH PROGRAM FOR HIGH SCHOOL GIRLS

Increasing Confidence and Strengthening Interest Among Underrepresented Groups

Girls Talk Math

[www.girlstalkmath.web.unc.edu](http://www.girlstalkmath.web.unc.edu)

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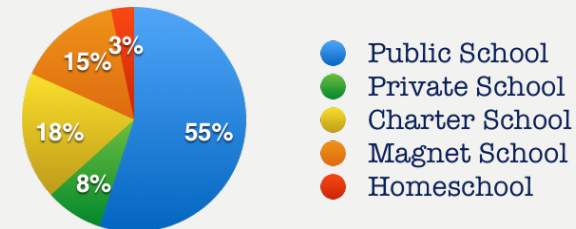
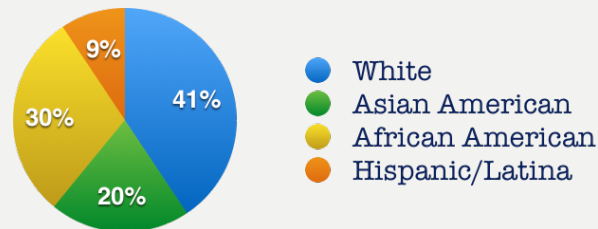
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# Girls Talk Math: Overview



- Free 2 week summer day camp for high school girls interested in math hosted by the University of North Carolina at Chapel Hill
  - *Funded by MAA Tensor Women and Mathematics Grant*
- Goals
  - *Consider careers in mathematic*
  - *Enroll in math courses in college*
  - *Increase confidence*
- 26 campers in 2016; 35 campers in 2017
- Demographics:



# Girls Talk Math: Activities



- IBL Problem Set
- Blog post
- Final Presentation
- Research a female mathematician
- Write and record a podcast



# Why Inquiry-Based Learning?

- Increase confidence
- Emphasize creative problem solving
- Collaboration



# Curriculum Details

- 14 problem sets, 12-21 pages
- Written by graduate student volunteers
  - *Initial volunteer meeting*
  - *Meet with individual groups*
  - *Edit and revise*
- Topics
  - *Pure Math, Math Physics, Applied Math*



# Results

- Engaged in conversation
- Excited about what they learn
- Demonstrate solid understanding of material
- Pre/Post surveys gauging self-confidence and interest

When you learn that everything is both a particle and a wave

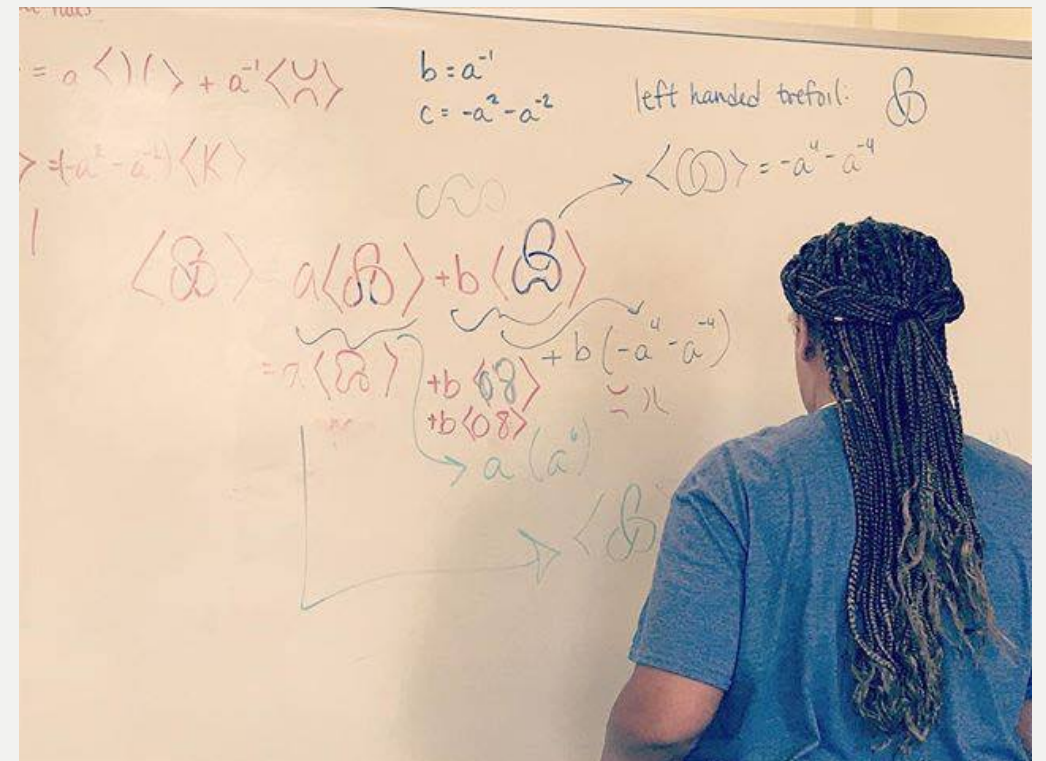


# Challenges and Action Steps

- Maintaining focus
  - *More structure*
  - *Announce work plan at beginning of session*
- Mastering topics
  - *Pure math: engaging with abstract material → provide physical visualization*
  - *Math physics: translating calculations to physical implications → TL facilitated conversations*
  - *Applied math: coding → More hands-on Tls*

# Increasing Access

- Working to finalize curriculum and make publicly available
  - *Classrooms*
  - *Other outreach initiatives*
- Bringing program to other institutions
  - *UMD graduate student*





# Thank you for your attention!

## *Girls Talk Math*

Blog posts and podcasts are available on the program website.

website: [girlstalkmath.web.unc.edu](http://girlstalkmath.web.unc.edu)

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