

MathFest 2013
Hartford, Connecticut

Albany Area Math Circle: Building Mathematical Communities

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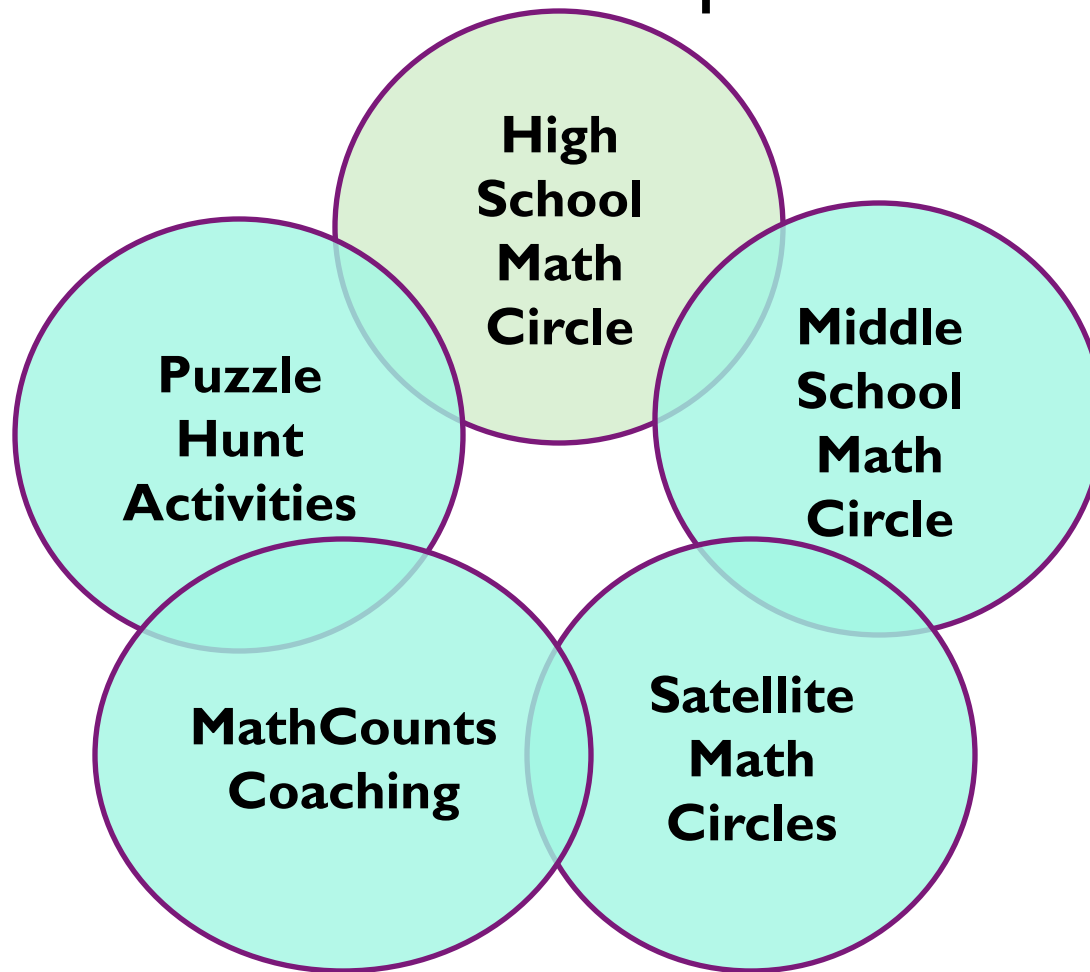


Communities

- According to Dictionary.com a **community** is a group sharing common interests and is unique in some respect from the larger society within which it exists
- The Albany (NY) Area Math Circle creates a community of students who love math and pass on this passion to others to further extend the community

Albany Area Math Circle

The AAMC is made up of several subcircles

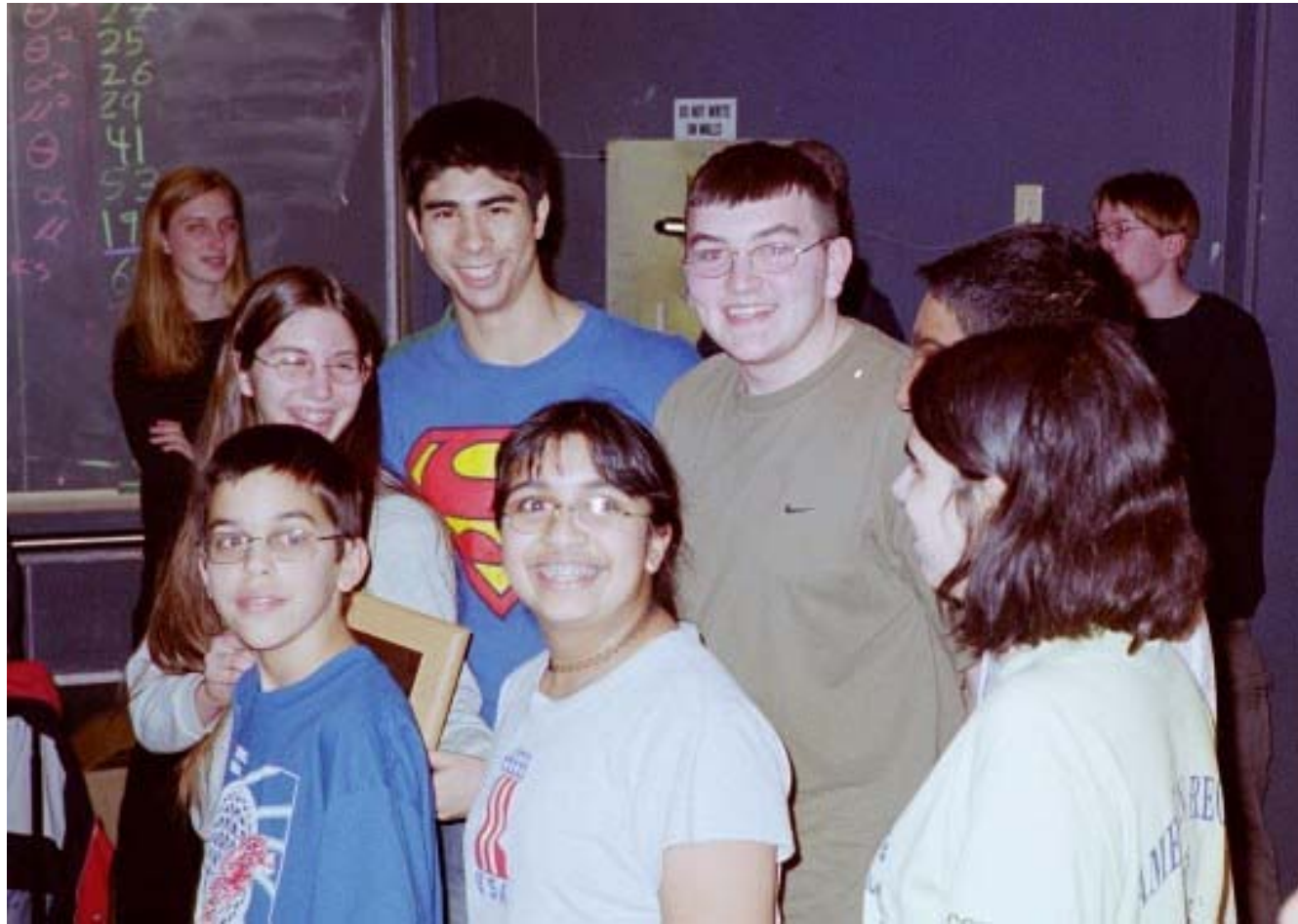




High School Math Circle

- Founded in 2001 by Dr. Mary O’Keeffe and Dr. Krishnamoorthy
- Created a platform for enthusiastic students who love mathematics
- Started with just 3 students
- Today, it has grown to over 50 students
- The team competes in many math competitions: ARML, NYSML, PUMAC, HMMT, and AMC’s

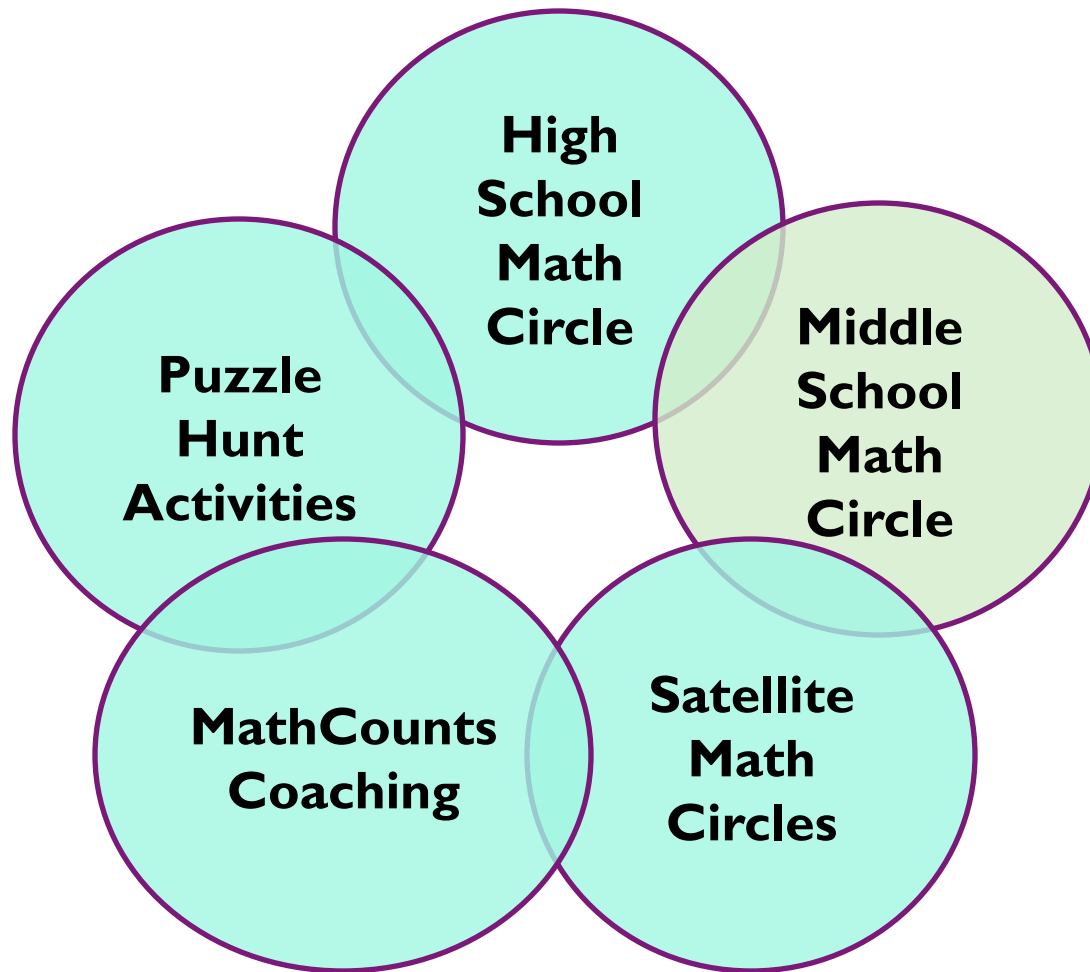
2002



2012



Albany Area Math Circle





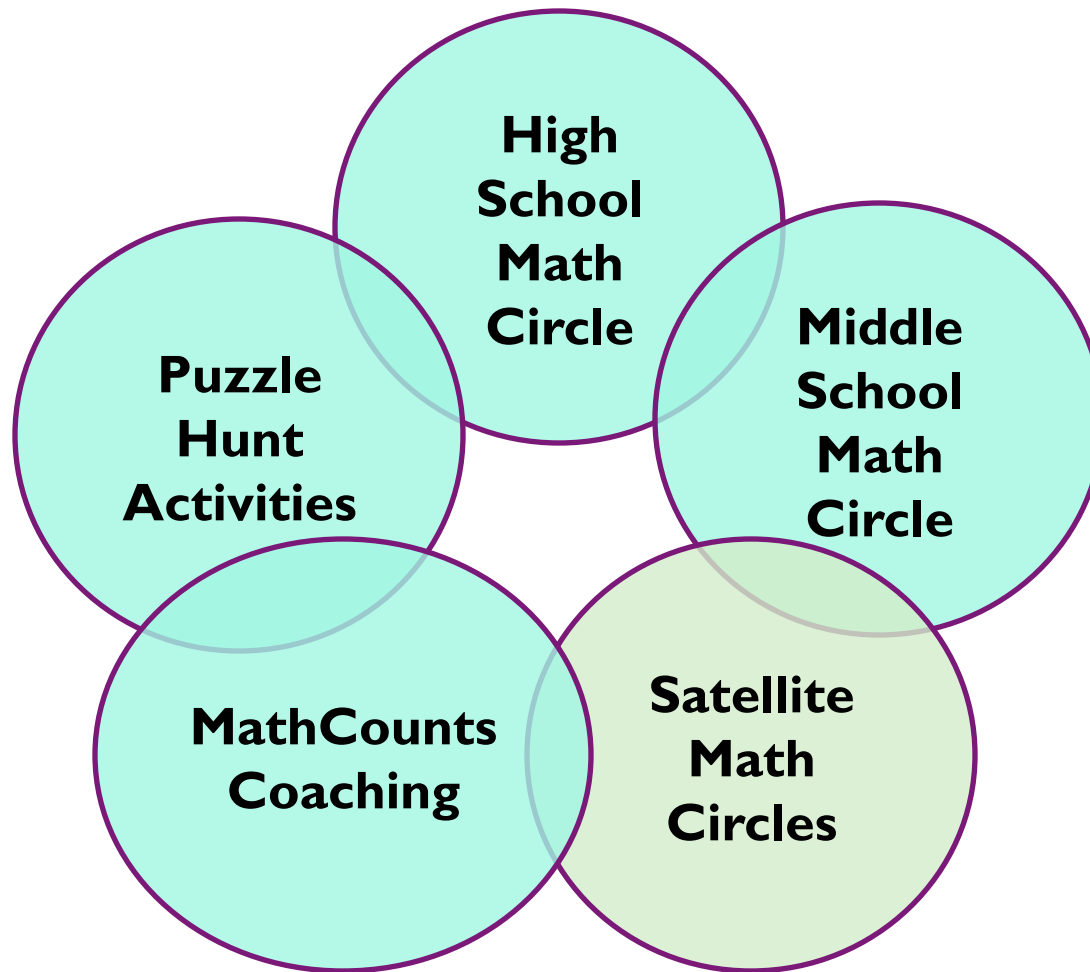
Middle School Math Circle

- Created for younger students
- Run by high school mentors
- Practice for AMC8 and MathCounts
- Participated in Math Meets and Purple Comet competitions
- Great student coaching experience: High school students coaching younger students





Albany Area Math Circle

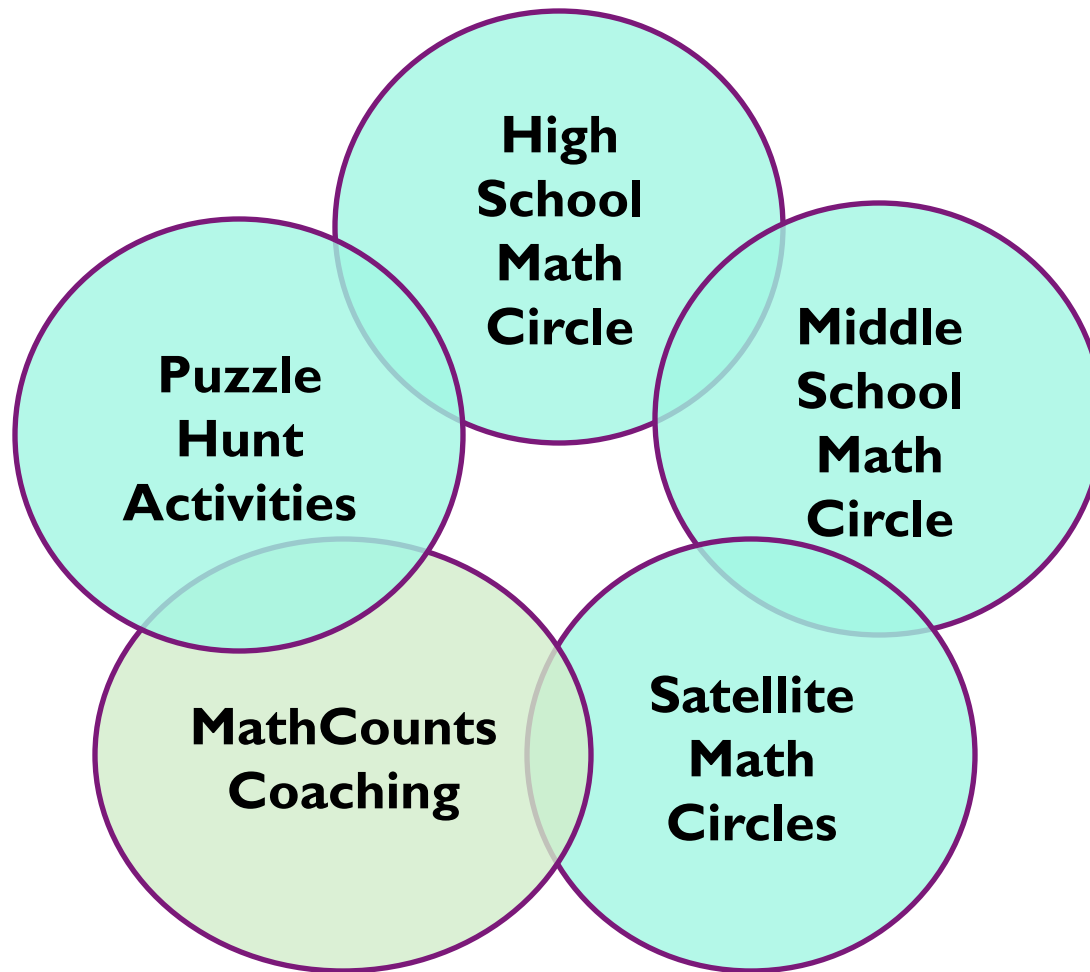




Satellite Math Circles

- High school students also started their own separate satellite programs
- These helped reach out to even more people including younger students who were unfamiliar with Math Circle
- Some students from these Satellite programs later joined Math Circle

Albany Area Math Circle

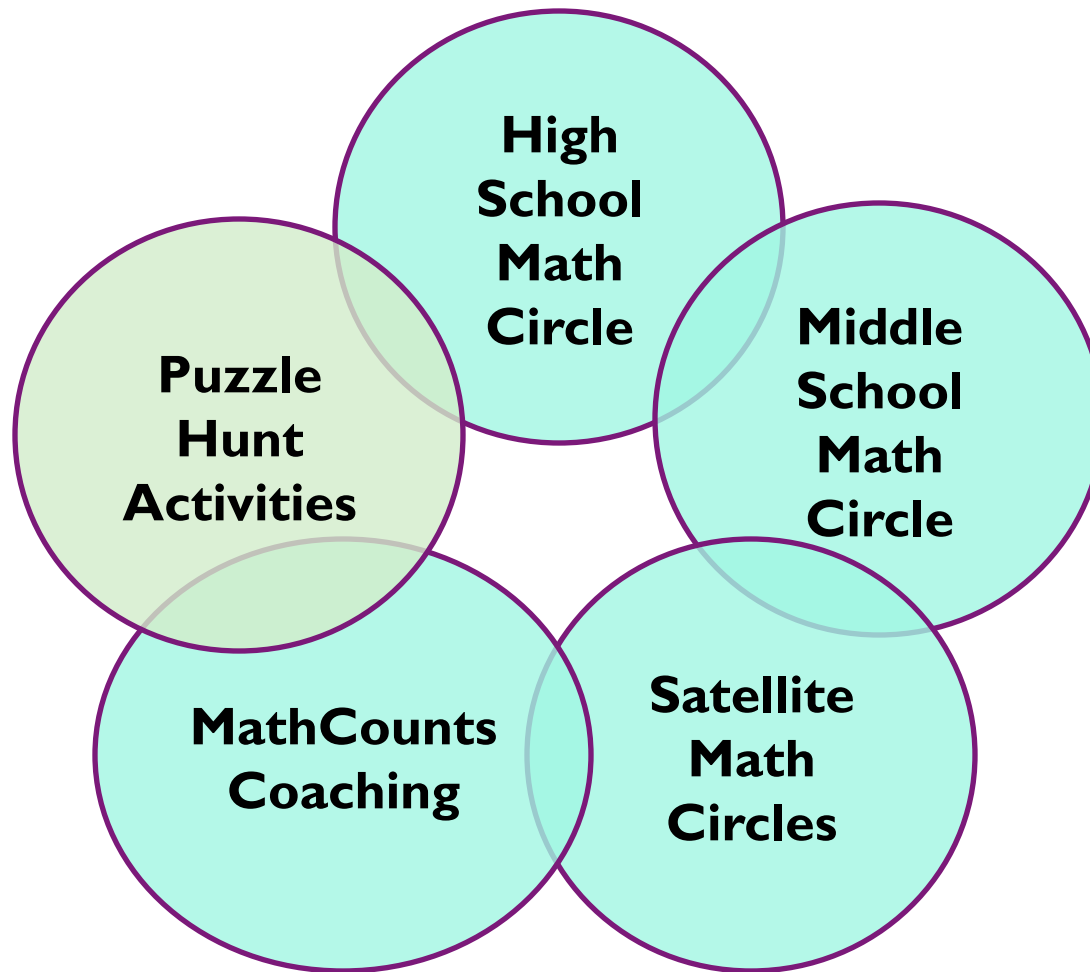




MathCounts Tutoring

- Other students volunteer at their school or a local school helping tutor the MathCounts team
- I have been coaching the MathCounts team for two years with a local inner city school
- High school students mentor many local teams
- High school students have also created Mock-MathCounts activities to give a friendly practice for the MathCounts competition

Albany Area Math Circle



STEP Program


- Organized by Union College (Dr. O’Keeffe)
- Students volunteer at a program that encourages underrepresented students to encounter mathematics





Puzzle Hunt Activities

- After attending a fantastic program, SUMIT by Girls' Angle, I decided to create similar collaborative events for local students in my area
- Goals of my events:
 - Create further outreach to inner city students, especially girls
 - Collaborative work instead of competitive work
 - Good atmosphere for solving problems and learning new concepts from each other
 - Be fun and stress-free
- Puzzle hunts create diverse groups of students and teach teamwork and collaboration

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- I created 3 such events last year:
 - Two crossword events
 - Teaching event



Crossword Event

- Crossword event:
 - I made a problem set for the students whose answers fit into a crossword puzzle
 - At the end the students used answers from the crossword puzzle to open a combination lock to a box with prizes
 - Students worked together to complete the crossword and eventually receive prizes











Teaching Event

- Teaching Event (Halloween event):
 - I ran this event with a friend, Catherine Wolfram
 - For this event I broke the students up into groups and gave them each hands-on activities to work with:
 - 1) We used **pumpkins** to teach geometry concepts of area and volume by actually handing out pumpkins and students measuring them
 - 2) We used M&M's to teach about prime numbers by having the students try to create rectangles using them
 - 3) We simulated trick-or-treating by having a student pick certain numbers of candies from bags to teach about counting numbers and other patterns



Conclusion

- These events brought together a diverse group of students, some of whom would never have imagined loving math
- They have truly encouraged students to become more confident in their abilities, and learn new concepts.

This ensures the solid future of MathCircle:
Students who have been mentored by these
events will go forth and mentor other
students spreading the love of mathematics
just as I was mentored when I was in middle
school





Thank You
Are there any questions?