

Math Club 5

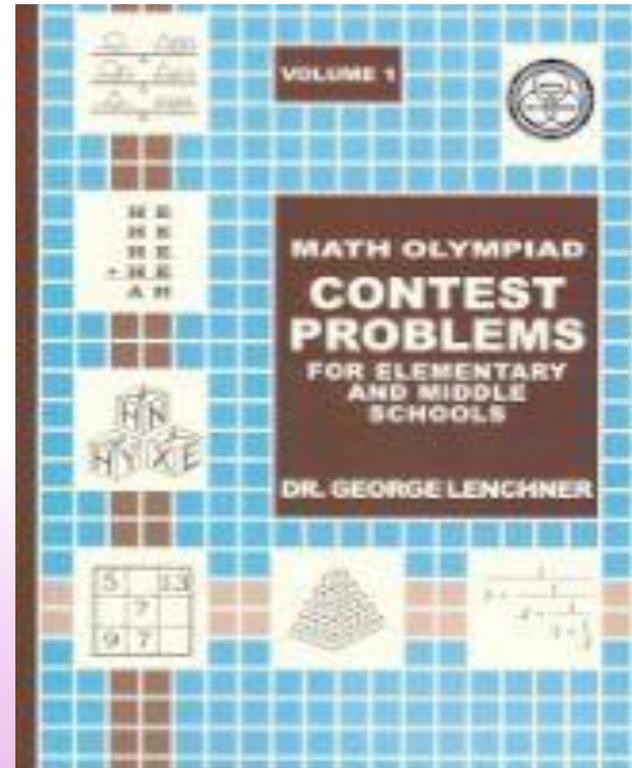
- ▶ Math Club for Grades 4 - 6
- ▶ Develop creative problem-solving skills.
- ▶ Students participate in MOEMS Math Olympiads.
- ▶ Introduce advanced mathematical concepts in probability, combinatorics and codes and ciphers.
- ▶ Students immerse in mathematics by working on an investigative project.

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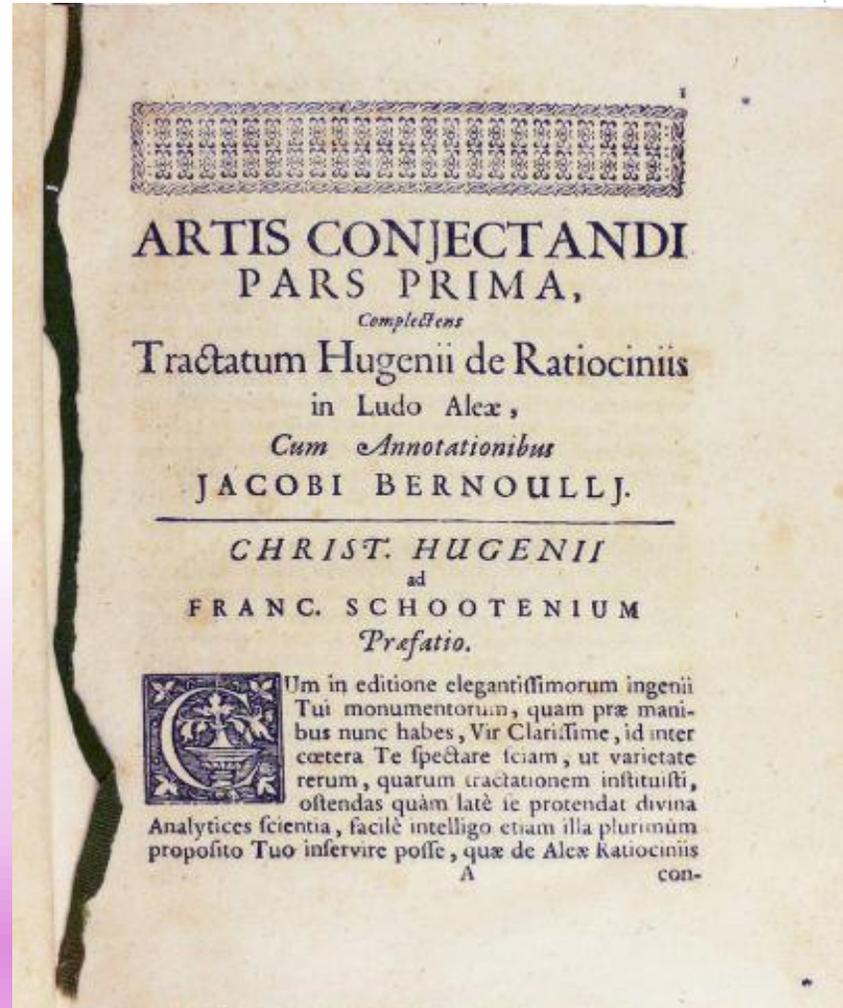
MOEMS Math Olympiad

- ▶ Math Olympiads for Elementary and Middle School (MOEMS).
- ▶ Strengthen problem solving skills.
- ▶ Practice problems in-class.
- ▶ Olympiad packets for practice.
- ▶ Five contests, held once a month, from November through March.
- ▶ All Math Club students are invited to participate.



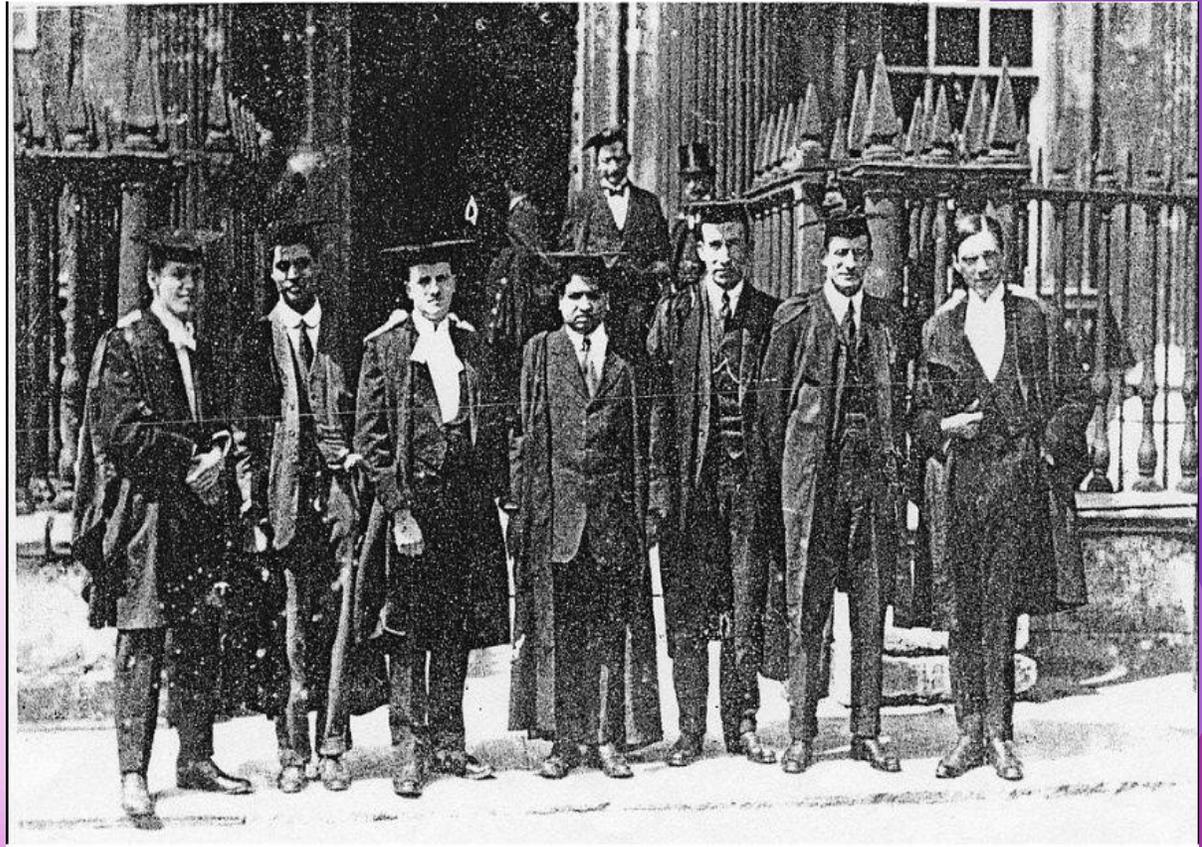
Advanced Math Concepts - Probability

- ▶ Counting principles, permutations, combinations, partitioning.
- ▶ Basic probability concepts.
- ▶ Bernoulli and binomial trials.
- ▶ Experiments with dice and coins.
- ▶ Experiments illustrating law of large numbers.
- ▶ Story of Jacob Bernoulli.



Advanced Math Concepts - Codes and Ciphers

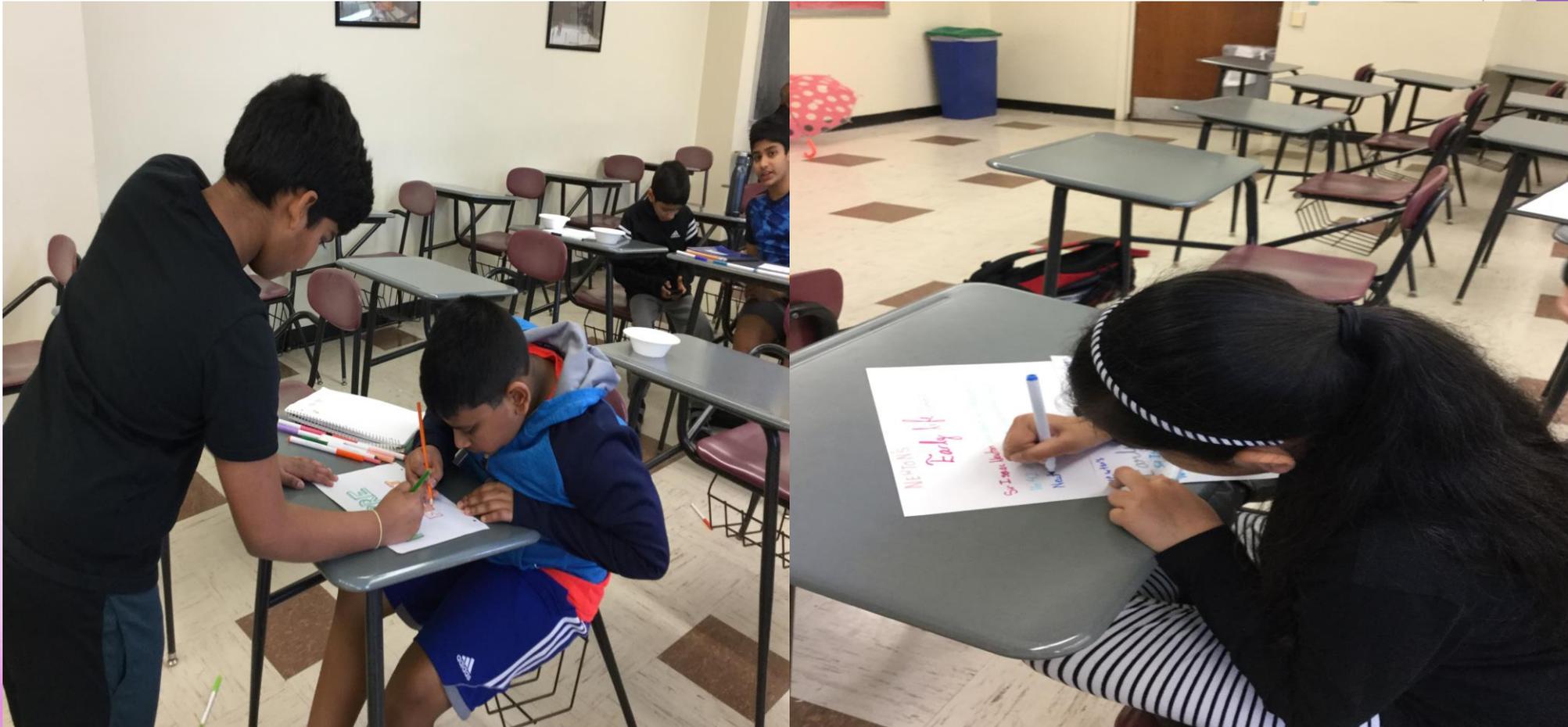
- ▶ Reduce numbers modulo a positive integer.
- ▶ Convert numbers from decimal to base-26.
- ▶ Kids-RSA: middle school version of encryption and digital signature.
- ▶ Story of Ramanujan



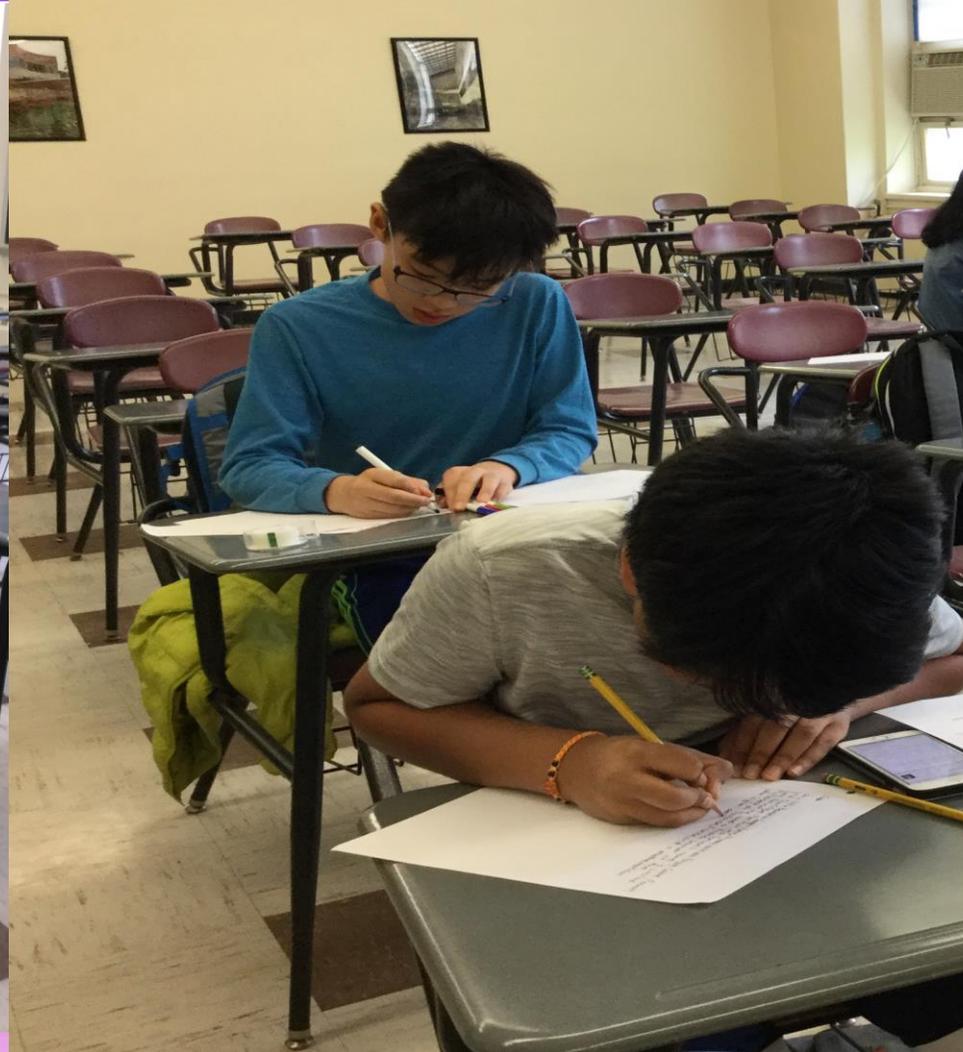
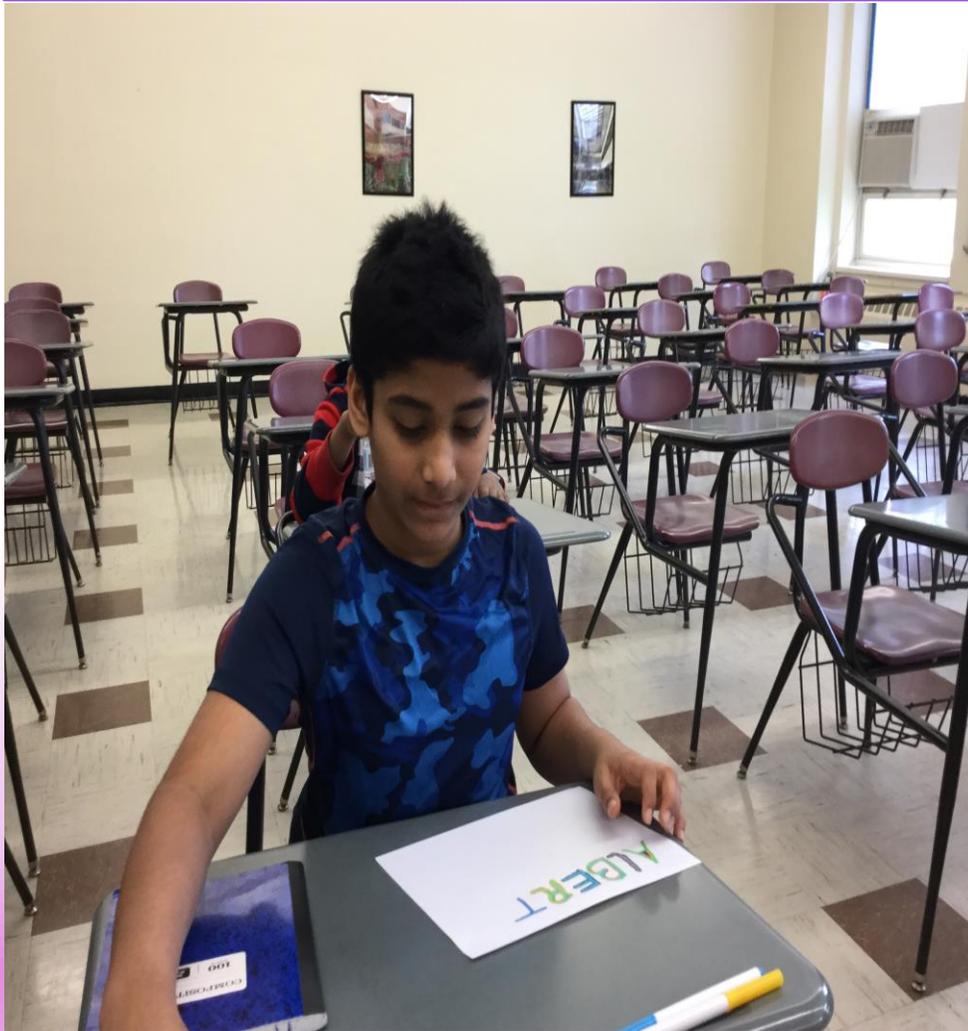
Investigative Projects - I

- ▶ Investigate and prepare a presentation on a mathematical concept or the life of a famous mathematician.
- ▶ Students work in teams of three.
- ▶ Students present their work to the class and the parents.

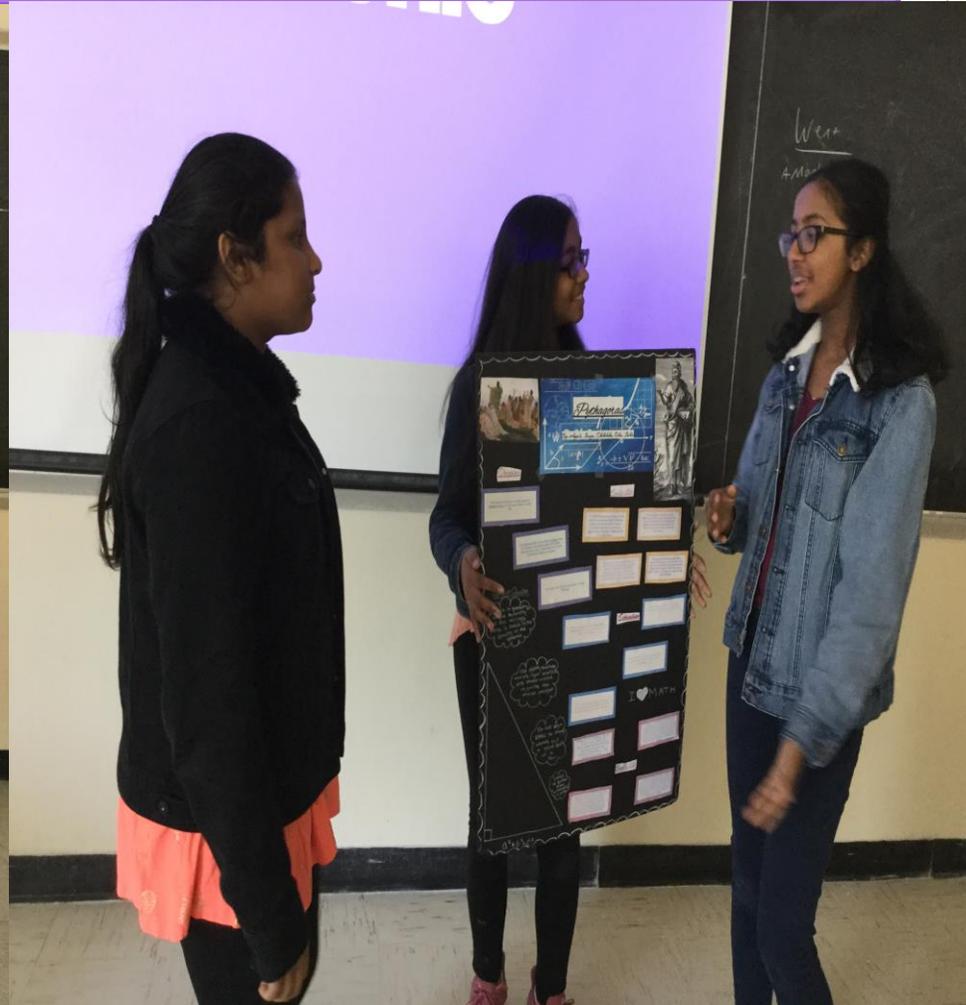
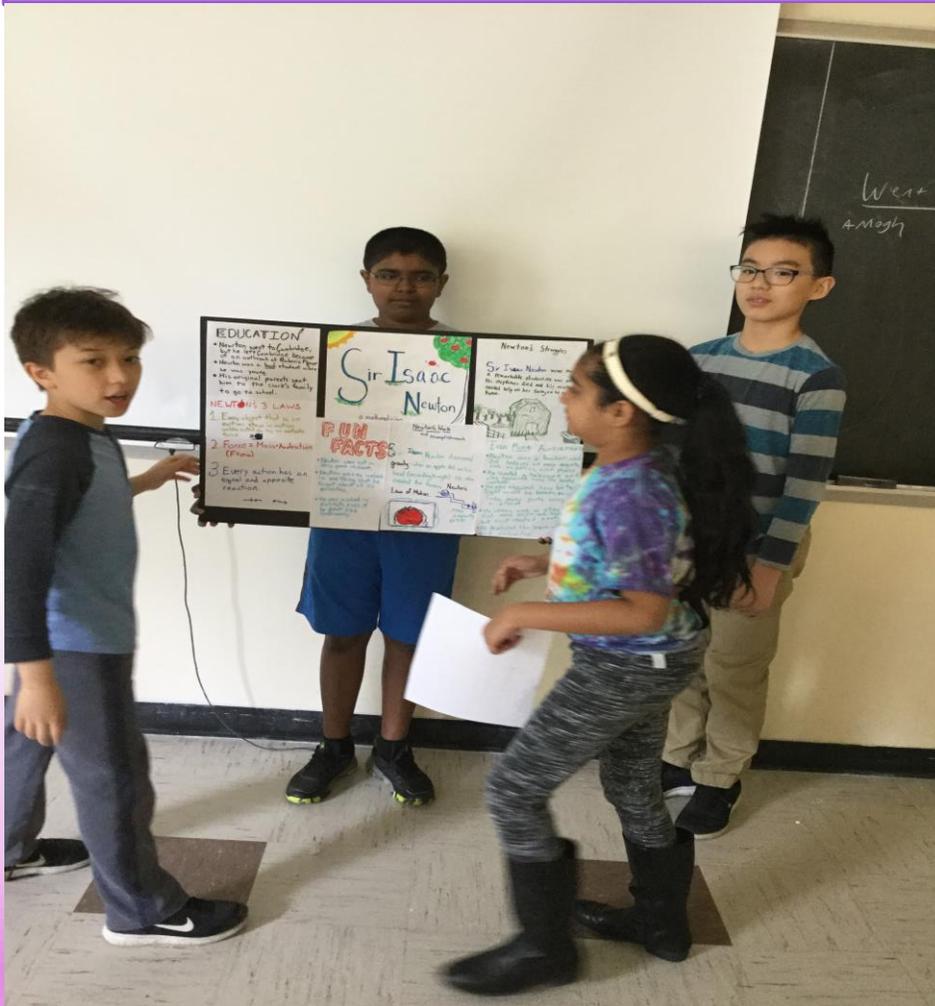
Investigative Projects - III



Investigative Projects - IV



Investigative Projects - V



Investigative Projects - VI

12:04 PM Sun May 9

End Zoom

Mute Stop Video Share Content Participants More

Switch Camera

Switch to Active Speaker

Vibha Mane

Ben

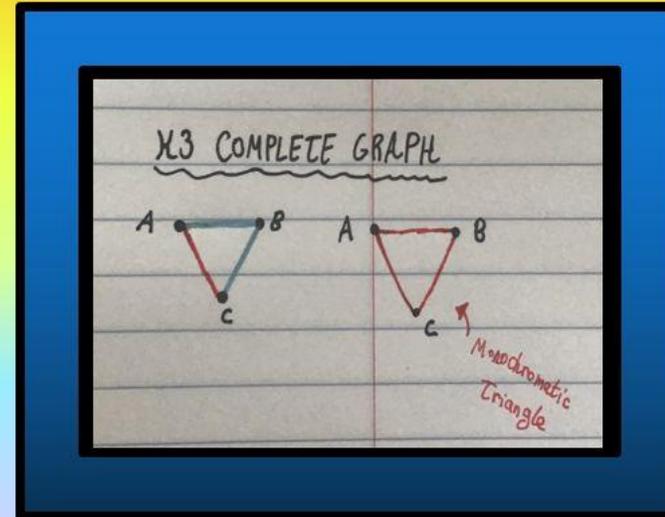
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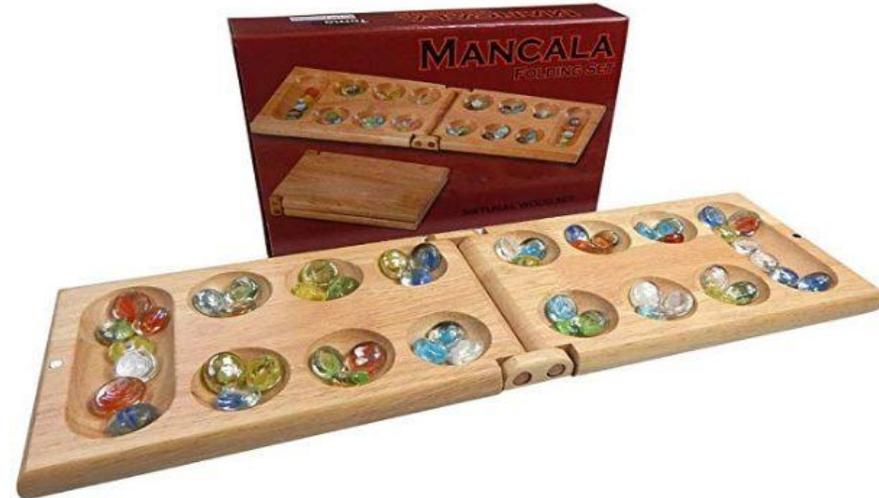
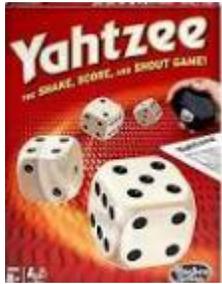
Investigative Projects - VII

Complete Graphs - K_3

In a K_3 complete graph, there are three vertices. Each point is connected by an edge to every other vertex. The graph to the right has a complete graph and a monochromatic triangle. A monochromatic triangle is a triangle that is created in the same color. The rightmost triangle is a monochromatic triangle and was created using red, only one color. The left triangle is not a monochromatic triangle and is created in both red and blue. In K_3 graphs, it is possible to avoid a triangle in one color - monochromatic triangle.



Fun Stuff - Games



Fun Stuff - Movies

