Glen Ridge Middle School

G & T Newsletter

Winter 2022

Fermi Questions

Our G/T classes are genuinely attracted to almost any math problem. The Fermi Question Lab was their own choice. This project involved many steps which required logic reasoning & writing, educated estimating, information collecting, Algebraic expression, generating math formulas, and problem solving. These skills progressed or sharpened along with steps of their Fermi Question Lab projects.

Fermi Question Lab Steps:

1. Question: State the questions and clarify the interpretation
2. Wild Guess: Make a wild guess involving no calculations.
3. Educated Estimate: Make an educated guess involving a chain of reasoning and calculations based on everyday experiences and estimates.
4. Variables and Formulas: Define variables in the questions and create a formula to solve the Fermi Question.
5. Gathering Information: Perform experiments, conduct surveys, make measurements, and search for information to improve estimates and to find a smallest reasonable value, a largest, reasonable value, and a most likely value for the answers to the Fermi Questions.
6. Conclusions: Summarize the overall conclusions, possible sources of error, interesting facts learned, possible directions for future investigation.
7. In-Class Presentation: Each team makes a presentation and presents their lab step by step, and the presentation is followed by Q&A from their peers and teacher.

Step 4: Variables and Formulas

Variables:

X is the amount of time spent on one game

Y is the probability in decimal format that you will play as imposter

Z is the total amount of time spent in the bathroom

G is the number of games played

D is amount of time playing

I is the interval of time in between bathroom breaks

T is the amount of time allowed in one bathroom break

B is the amount of bathroom breaks

A is the length of the livestream

P is the number of people in each game

N is the numbers of imposters in each game

A/I gives us B. TB gives us Z. A-Z gives us D. D/X gives us G. N/P gives us Y. GY is the amount of times you get to play as imposter in a 24 hours live stream.

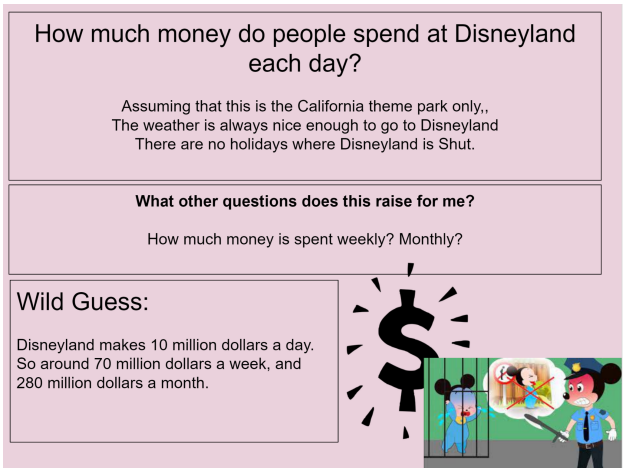
The final formula is:

{[A-T(A/I)]/X}(N/P)

If we plug in all the numbers, we get:

{[1440-5(1440/120)]/15}(2/10)

Which equals 18.4, or about 18 times that you will be imposter during the livestream



Design Your Business Logo & Slogan

While the 8th grade G/T class was working in their Fermi Question Lab, the 7th grade class expressed themself with their business logos and slogans. This topic was aiming to develop greater self awareness as an individual or as an entity. The designing of their own business logos and slogans incorporated research, analysis, critical thinking, creativity, and collaborations with peers. The three companies were DaNa-perfume production, Glizzy Gobbla's--a Hotdog company, and Chry--a cherry supplier.

"Create Your Signature Scent"

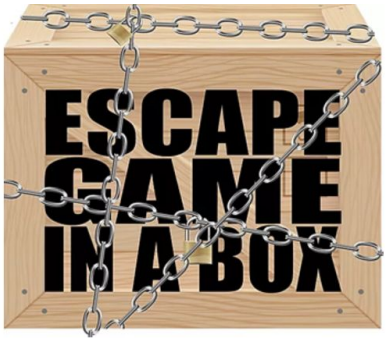
The project process includes:

1. Analysis of some famous brands' logos, and learned the fundamentals of logo design.
2. Create their own business ideas and the purposes of their business.
3. Design their logos and slogans based on their business purposes.
4. In-class presentations

Escape Room In A Box

Escape Room has been one of the most popular projects in our MS G/T classes. Unfortunately due to the pandemic, we were not able to visit any enclosed facilities. But we found a way to solve the problem, eventually the classes learned and worked out their own Escape Room In A Box. These boxes were designed in the same principle as a real escape room, the “rooms” were shrunk into much smaller scales. The groups generated their own stories and puzzles stored in individual boxes, and then the counter groups had to solve the mysteries by solving the puzzles to unlock the locks outside of the boxes. Both 7th and 8th grade classes selected this project.

For weeks students worked in teams each week to design and build everything from scratch. This required a great deal of planning and coordination, and lots of trial and error to perfect the flow of individual challenges, and creative thinking and writing. Their design process involved opening stories, riddles, clock puzzles, morse code, complex math calculations, Chinese character puzzles, and various number/letter locks, and different boxes.



Create Comics with the Hero’s Journey Structure

One project related to English Language Art was decided by both the 7th & 8th grade classes, “Create Comics with the Hero’s Journey Structure”. This is a current on-going project. The classes are learning the archetypes of the Hero’s Journey Structure, and will then use this structure to create their own comics. The writing and design will be done on an online app, StoryJumper.com. Stay tuned for their stories……