First Quarter Geometry Project
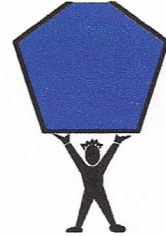
There are **3 sections** to this project:

I.   Law of Syllogism (Chain Rule) Section. (40% of grade)
II.   Logic Puzzle Section. (40% of grade)
III.   Summary Paragraph. (20% of grade)

The project should be stapled together in the section order given above. (The Law of Syllogism section should be on top as your cover page.)

I.   Law of Syllogism (Chain Rule) Section

This will be a fun way to practice the Law of Syllogism and If-Then statements. You are going to write an original story based on the children's books by Laura Numeroff.
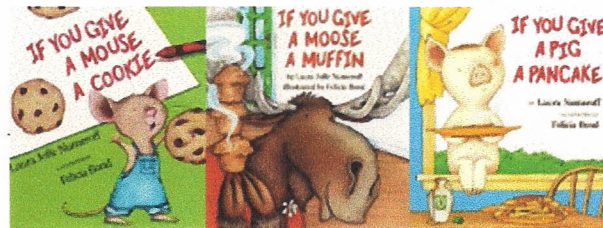

Directions for students:

1. Design a **book cover** in the space provided for your story. Make sure you include the **title of your book** and the **author**. (Yes, the author is you!) You can use colored pencils, markers, magazine clippings, computer generated artwork, etc.

The following is a sample of how to set up your story page. A template to use will be downloaded onto Sycamore.

STORY
AT LEAST
8 "IF-THEN"
SENTENCES

BOOK COVER
INCLUDE
GRAPHICS,
TITLE, AND
AUTHOR

CONCLUSION
WRITE AS AN "IF...THEN" STATEMENT
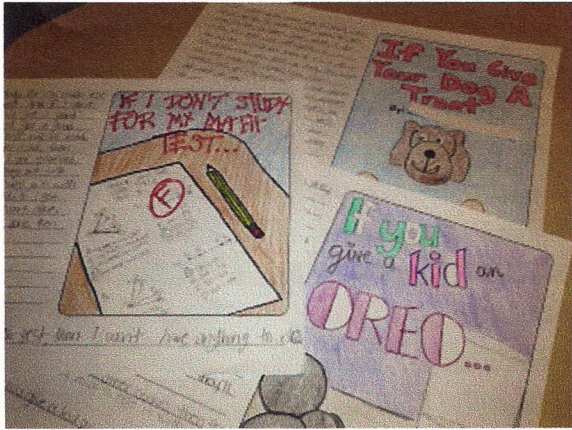
Here is an example of a finished product.

2. Write a **minimum of 8 sentences**. Each sentence needs to be written as an **"if-then"** statement.

3. Write the **conclusion** (as a conditional statement) to your story.

Grading Rubric:

Neatly colored:	2
You included a conclusion:	1
Creativity/Originality/Theme:	8
Sentences are written as Conditionals and form a Logical Chain:	<u>4</u>
Total Points Possible:	***15 points***

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II.   Logic Puzzle Section

In Chapter 2, you were introduced to deductive reasoning and will begin working with paragraph and 2-column proofs. This project is intended to help you acquire additional experience in those areas.

Directions for students:

1. Select **2** of the 4 logic puzzles listed below; one puzzle per page.

2. For each problem:
   - o Make a sketch (or model) of the problem. You will find that making a model and thinking it through, step-by-step, will help you succeed.
   - o Below the sketch write a logical solution to the puzzle.
   - o Write a paragraph proof or 2-column proof to support (explain) your solution.

3. Choose 2 Puzzles:

Logic Problem #1: Jobs

Mr. Gutierrez, Mrs. Hernandez, Mr. Marquez and Mrs. Rivera have jobs of doctor, accountant, teacher and office manager.

1. Mr. Marquez lives near the doctor and the teacher.
2. Mrs. Rivera is not the doctor or the office manager.
3. Mrs. Hernandez is not the accountant or the office manager.
4. Mr. Gutierrez went to lunch with the doctor.
5. Mrs. Rivera's son is a high school student and is only seven years younger than his algebra teacher.

Determine from the information given, which person has each occupation.

Logic Problem #2: Musical Instruments

Victor, Leon, Karen and Stephen each play one instrument. They play the viola, clarinet, trumpet and flute.

1. Stephen does not play the flute.
2. Karen lives near the student who plays the flute and the one who plays the trumpet.
3. Leon does not play a brass or wind instrument.

Which student plays each instrument?

Logic Problem #3: Apartments

Six friends live in consecutive apartments on the same side of their apartment building.

1. Anita lives in apartment C.

2. Kelli's apartment is just past Scott's.
3. Anita's closest neighbors are Eric and Ava.
4. Scott's apartment is not A through D.
5. Eric's apartment is before Ava's.

If Robert lives in one of the apartments, who lives in which apartment?

Logic Problem #4: Who's Who

Mr. Black is a butcher, and head of the shopkeepers' club, which also includes a baker, a grocer, and a candlestick maker. At their meetings, they all sit at a square table. Mr. Black sits at the head of the table, on Ms. Brown's left. Ms. White sits on the grocer's right. Mr. Pink, who faces Ms. Brown, is not the baker.

Can you figure out Who's Who and Who sits where? (Helpful hint: Draw a square or rectangle to represent the table. Keep filling in the information you learn and crossing out whatever can't be true.)

Grading Rubric:

Logic Puzzle 1

Illustrated:	1
Solved Correctly:	2
Logically Explained:	4

Logic Puzzle 2

Illustrated:	1
Solved Correctly:	2
Logically Explained:	4

Neatly Done: 1
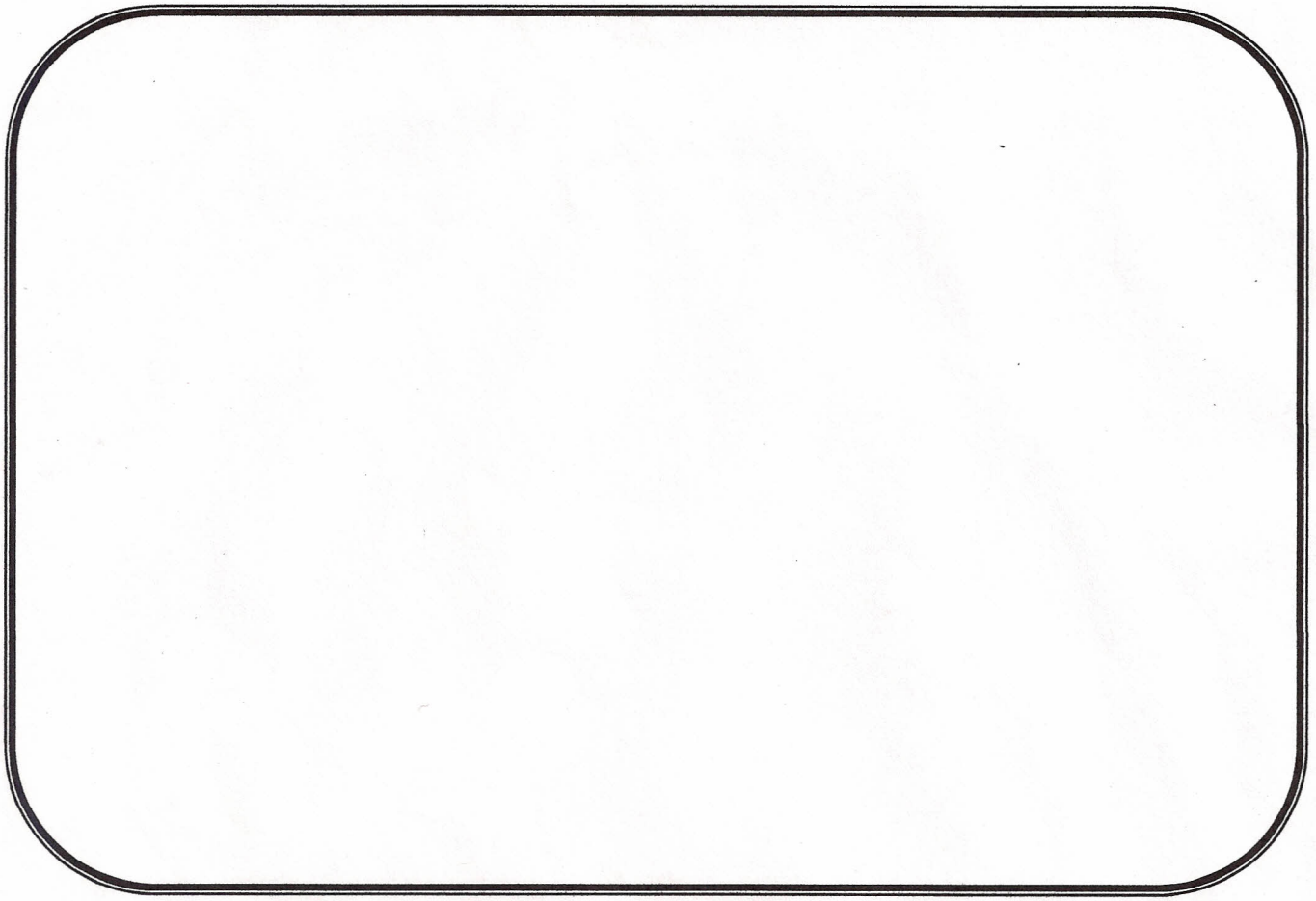
Total Points Possible: **15 points**

III.   Summary Page

Write a couple of paragraphs describing what you learned by doing this project. What were some of the difficulties you encountered?

Conclusion: