Grade 11 Core Math Project

INTRODUCTION

In most cases, courses tend to focus on single forms of delivery, lecture type for instance. Courses that utilize **Multiple Intelligence Model** will allow educators to gain a more accurate picture of student ability**.**

The objectives of carrying out this project work are to enable students to:

a) Apply mathematics to everyday situations and appreciate the importance and the beauty of mathematics in everyday lives;

b) Improve problem-solving skills, thinking skills, reasoning and mathematical communication;

c) Develop positive attitude and personalities and mathematical values such as accuracy, confidence and systematic reasoning;

d) Stimulate learning environment that enhances effective learning inquiry-base and teamwork;

e) Develop mathematical knowledge in a way which increases students' interest and confidence.

The following tasks are designed to motivate and encourage students to apply their creativity and skills:

- Drawing a Cartoon
- Creating a Puzzle
- Demonstration Video of a Mathematical Concept

Each task will follow a detailed procedure. Refer to the phases of the task and how the marks will be determined.

Guidelines:

1. This project will be done in groups of two (2) or three (3) students maximum.

2. Each member of the group should participate in completing each task included in this project.

3. Each group should submit one (1) official hard copy and a soft copy of this project to their respective teacher.

Task 1: DRAWING A CARTOON
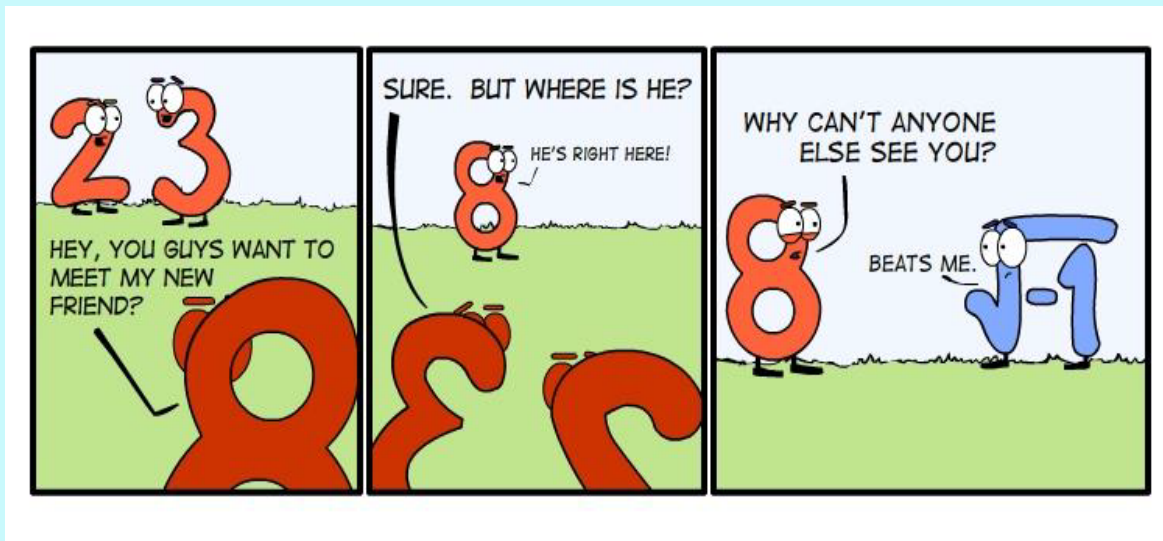
Summary: This project must contain a comic strip that demonstrates or explains a mathematical technique or concept.

Requirements: The comic strip must contain...

- eight panels minimum [the cartoon above contains only three panels]
- clearly drawn characters, (use of a computer software or application is encouraged)
- an explanation of a mathematical technique, concept, or rule.
- elements of humor, irony or drama

Examples: Students can include the following: Triangle Angle Sum, Quadratic Equation, Radical Equations, Combining Polynomials, Arithmetic Series, Dividing Polynomials, Drawing a Graph, Pythagorean Theorem etc....

Task 2: CREATING A PUZZLE
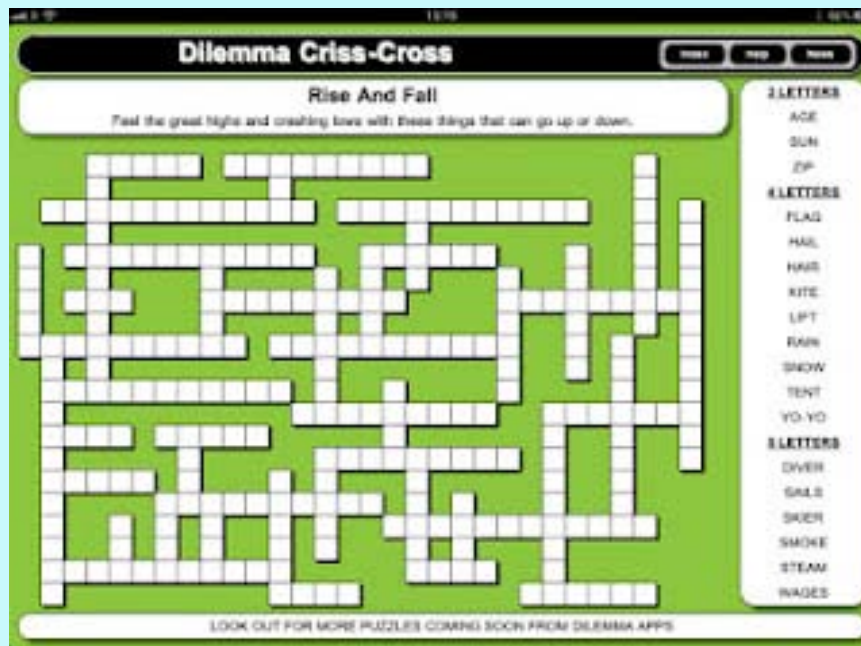
Summary: This project is appropriate for those who enjoy creating criss-cross puzzles.

Requirements: The puzzle must contain...

- Mathematical Concepts and Vocabulary only, (i.e. circumference, surface area, Pythagorean formula, vertex, parabola, ...)
- a final copy that fits on a typical sheet of paper,
- a list of at least twenty-five (25) clue and word pairs,
- clues that are understandable,
- proper grammar
- An answer key to be given to the teacher only.

Special Note: Puzzle-creation assistance can be found at Puzzle maker ["Criss-Cross"] About: Puzzle Software, and Google Directory: Puzzle Creation.

Task 3: DEMONSTRATION VIDEO OF A MATHEMATICAL CONCEPT

Summary: This project is appropriate for students who enjoy showing people how to do new things and/or creating models. This may involve describing the relationship in a right triangle and the Pythagorean Theorem using Pick's Theorem, describing how certain tiles completely cover the plane, how paper can be folded to make interesting shapes, or some other physical demonstration on how to make a model that involves a **mathematical principle done by all the students in the group.**

Requirements: The demonstration must contain the following;

- at least one (1) of the following topics:

    I.   Translations of Trigonometric Functions
    II.   Verifying Trigonometric Identities
    III.   Proving Sine or Cosine Law
    IV.   Solving Trigonometric Equations

- A physical model, prop, object, or product, (student can use software application, ipad application, white board, etc.)
- A detailed demonstrate on that explains a process involving some mathematical principle, property or concept,
- Demonstration time is 5 to 10 minutes maximum.

Note: The group may choose to supplement their presentation with video effects and music to receive additional points toward creativity. Students are required to upload the of demonstration video on YouTube upon the approval of the subject teacher.

Rubrics

	4	3	2	1	
Completeness of Tasks **20%**	**Tasks are totally completed and correct. (100%)**	**Tasks are partially completed, OR Partially wrong.(75%)**	**Tasks are partially completed, AND Partially wrong (50%).**	**Tasks are Attempted (25% or less)**	__
Presentation and Integration of Technology **70%**	**Students used one mean of technology. The tool used helped the student and was useful to support his project. Moreover, the student was able to explain the work he/she submitted confidently and fluently; he/she was <u>able to answer all</u> of colleagues and instructor's questions**	**Student used a mean of technology but it was not that supportive to the topic. In addition, student was able to explain the work he/she submitted confidently and fluently and he/she reflected an understanding of his/her works. The student was <u>able to answer most</u> of colleagues and instructor's questions.**	**Student was able to explain the work he/she submitted. Student reflected a shallow understanding of his/her work; she was <u>able to answer some</u> of colleagues and instructor's questions,**	**Student use of technology was primitive and way below the level of other IAT students. Student was unable to explain the work he/she submitted. Student reflected no understanding of his/her work; he/she was <u>unable to answer any</u> of colleagues and instructor's questions.**	__
Creativity& enrichment **10%**	**Student had an outstanding addition in <u>all aspects</u> of his/her project.**	**Student had an outstanding addition in <u>some aspects</u> of his/her project.**	**Student had an outstanding addition in <u>very few aspects</u> of his/her project.**	**Student had an outstanding addition in <u>no aspects</u> of his/her project.**	__
This rubric is out of 100, percentage orientation. To make the mark out of 30 (Student's Mark/10*3)				**Total---->**	__