End of the Year Geometry Projects 2013

As your final grade/assignment for my class, you will select one of the four projects below. You may work individually or in groups of up to three people. All projects will be given a TEST grade and will be presented in class June 4 – June 7.

The ABCs of Geometry (POSTER)

For each letter of the alphabet, find a geometric word or phrase that starts with that letter. Create a poster that has for each letter, the word or phrase you have chosen, a definition or description of that word, and either a sample problem similar or a picture that matches that topic. There must be at least 15 sample problems included and this must be done in color, on poster paper (you can use 2 if you need more space) and must follow guidelines on the grading sheet.

Interview with a Geometer (VIDEO)

Pythagoras, Euclid, and Euler are only a few of the many mathematicians whose work we have studied this year. Select a famous mathematician living or dead (the more original the better!) and create a short 3-5 minute video telling us about his or her life, personal history, mathematical accomplishments as well as including 3 math problems similar that relate to the mathematician’s work. This could be done documentary, interview, talk show or any other format as long as it follows the grading guidelines for this project.

Building Heights (Engineering/lab Report)

This year you have learned at least two mathematical methods that you could use to successfully and accurately calculate the height of the school building without climbing to the top! Using a few simple objects you can build equipment that can help you with your task. After creating and performing your experiment you will write up a lab report (in proper format) and present your findings to the class, using a power point or poster. The closer to the actual height, the better your score will be. Remember to follow all guidelines on the grading sheet.
Hint: Look up: “How To build and use CLINOMETER” and check out p. 584 in textbook.

Origami – art of paper folding

The art of paper folding has been around for a long time. In this project you will prepare a power point presentation explaining what origami is, a brief history of origami and show some examples. You will have created an origami using origami paper for demonstration. When unfolded on the white side of the paper you will trace the lines, identify or the name the lines, angles or geometric shapes that can found. In your presentation you will identify these shapes. Last but certainly not least – you will guide the class through folding an origami!
Origami – art of paper folding

Checklist/Grading Scale:

- PowerPoint is at least 15 slides in length and is fully functioning
- PowerPoint Includes a TITLE PAGE SLIDE and BIBLIOGRAPHY SLIDE(S) with all works sources used in research are cited and credit is given
- Information given the videos is FACTUAL and RESEARCHED
- Origami presented is well done, and white side has geometric shapes drawn
- Shapes found are listed on the power point, some to choose from, but not limited to, are: • angle bisectors, vertical angles, linear pairs, supplementary angles, parallel lines, perpendicular lines, right angles, congruent triangles, congruent angles, congruent segments or sides, triangles.
- Directions are clear and concise to guide class through folding their own origami – supplies needed are ready.

Is the PowerPoint created well? Is there obvious time and effort invested into this project?

1  2  3  4  5  6  7  8  9  10

History of origami presented with at least a paragraph, factual and researched with sites referenced.

1  2  3  4  5  6  7  8  9  10

Description of what origami is, clear and concise – how to make it.

1  2  3  4  5  6  7  8  9  10

The origami shown, is unfolded and has geometric shapes traced and labeled on the fold lines.

1  2  3  4  5  6  7  8  9  10

Power point identifies the labeled geometric shapes from the traced lines, at least ten.

1  2  3  4  5  6  7  8  9  10

Supplies organized and available for class demonstration, instruction clear.

1  2  3  4  5  6  7  8  9  10

Is this PowerPoint/demonstration something I would like to keep for future years?

1  2  3  4  5  6  7  8  9  10

Does the project show evidence of the group working together or was it done by only part of the group?

1  2  3  4  5  6  7  8  9  10

*No Late Projects will be accepted, how could they? We won’t be here. 😊*

Total Points:  /80  Percentage ________ %
Building Heights (Engineering/lab Report)

Checklist/Grading Scale:

➢ Is a complete presentation
  • Legible Font, at least 15 slides and fully functioning
  • Explanation of experiment is clear, and what tools used.
  • Order of slides is in a sensible order to present findings, well organized.
  • Includes 2-3 photographs of experiment, and at least five other graphics
  • Slide(s) showing math involved and is accurate.

Presentation – Is the PowerPoint created well? Is there obvious time and effort invested into this project?

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Description – Of tool(s) used and how they were used is clear and concise. Defining how the tool(s) were used to meet your objective.

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Procedure – The procedure is a detailed statement (step by step) of how the experiment was performed such that the experiment could be repeated using your report.

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Calculations – were shown in detail and accurate, height of building (from outside our window, ground to roof) is accurate.

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Photographs and Graphics – included within the presentation ( 2-3 photos, and at least 5 other graphics)

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Group Participation – all members of the group were involved in the project and presentation

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Memorable – is this presentation something I would like to keep for future years as an example?

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*No Late Projects will be accepted, how could they? We won’t be here. 😊*

Total Points:  /70  Percentage  %
Interview with a Geometer (VIDEO)

Checklist/Grading Scale:

- Video is working and runs between 3-5 minutes in length
- Video included a TITLE and CREDITS Sequence and all students participate in some way in the project
- Within Closing credits, all works sources used in research are cited and credit is given
- Video contains PERSONAL INFORMATION, MATHEMATICAL CONTRIBUTIONS, and 3 SOLVED EXAMPLES (minimum) of questions that relate to the Mathematicians Work
- Information given the videos is FACTUAL and RESEARCHED

How correct is the information given in the video?
1 2 3 4 5 6 7 8 9 10

Are the 3 sample problems solved correctly?
1 2 3 4 5 6 7 8 9 10

Is the video created well? Is there obvious time and effort invested into this project? No spelling errors?
1 2 3 4 5 6 7 8 9 10

Does the video meet all requirements for time and format?
1 2 3 4 5 6 7 8 9 10

Did the students give as much information as possible about their specific mathematician?
1 2 3 4 5 6 7 8 9 10

How original is the work? Is there evidence of the students creating their own work or is everything just copied or read off of an internet website?
1 2 3 4 5 6 7 8 9 10

Is this video something I would like to keep for future years as an example?
1 2 3 4 5 6 7 8 9 10

Does the project show evidence of the group working together or was it done by only part of the group?
1 2 3 4 5 6 7 8 9 10

*No Late Projects will be accepted, how could they? We won’t be here.* ☺

**Total Points: /80 Percentage %**
The ABCs of Geometry (POSTER)

Checklist/Grading Scale:

- All Letters of the Alphabet are included
- All words are relevant, geometric words and phrases (some consideration will be given for difficult letters like X)
- Definitions/Description are included for every letter
- Each letter has either a picture or sample problem
- There are at least 15 sample problems in the poster
- For the 15 sample problems a correct solution is shown

How "Geometric" are the words and phrases selected?

1 2 3 4 5 6 7 8 9 10

How correct are the definitions/descriptions?

1 2 3 4 5 6 7 8 9 10

Are the sample problems solved correctly?

1 2 3 4 5 6 7 8 9 10

How neat and appealing is the student work?

1 2 3 4 5 6 7 8 9 10

How original is the work? Is there evidence of the students creating their own work or is everything just cut and paste from the internet?

1 2 3 4 5 6 7 8 9 10

Does the project include a variety of topics discussed this year?

1 2 3 4 5 6 7 8 9 10

Is this poster something I would like to laminate and keep for future years?

1 2 3 4 5 6 7 8 9 10

Does the project show evidence of the group working together or was it done by only part of the group?

1 2 3 4 5 6 7 8 9 10

*No Late Projects will be accepted, how could they? We won’t be here.* 😊

Total Points: /80 Percentage %