



Dear \_\_\_\_\_,

Your Project topic this year is \_\_\_\_\_.

Your Project advisor is \_\_\_\_\_.

Attached is all the information you need to have a successful Project Week.

1. Specific guidelines for your Project (report & diorama guidelines)
2. Recommendations for time management (all students must show they have worked at least 30 hours on a Project; how that time is used depends upon the Grade/Project)
3. Guidelines about proper citations
4. Your timesheet that you must fill out each day and return with your Project

If you want to complete your Project over Winter Break, that is fine. You must work at least 30 hours on the Project.

We hope you learn a great deal and enjoy yourself, too!



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**Project Week Requirements**  
10<sup>th</sup> Grade Mathematics Project

You will be responsible for completing a discovery project exploring what happens to Euclidean geometry when you change just one definition. You will complete a number of explorations given to you to help you determine what happens to the rest of geometry. The explorations will start out with specific instructions and become more and more directed by you. Your experience doing the guided explorations will help you decide how to proceed in the independent ones.

There are two main questions to be answered in the process of this project;

- What does this new geometry look like?
- Beyond the mathematical exercise and the enjoyment of the exploration, what might we do with this new geometry?

You can use your textbook as well as the sheets included in your packet as references for any definitions of Euclidean geometry that you might need. If you run across questions about Euclidean geometry that you cannot answer, you are free to ask your advisor. You should not use or look for any resources to help you answer the questions about this new kind of geometry. The discovery work should be entirely your own.

You will turn in your work, observations, and conclusions in a packet together. The organization and process of this will be described in the following pages.

You will meet with your advisor to review the necessary information from Euclidean geometry.

Your advisor will also be available by email before and during project week to answer any other questions you might have.



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**MATH PROJECT INSTRUCTIONS**

1. Materials needed:

- graphing paper (one pack of loose paper or one unused notebook)
- compass and ruler
- pencils and eraser

2. Schedule: Figure out how much time to spend on particular tasks. In general, plan to spend about 10 hours each on sections I-III

3. Preliminary work:

- Understand the basic Euclidean geometry concepts reviewed with advisor and in packet.
- Read carefully the intro in the packet which describes which Euclidean definition is changed and how it has been adjusted. This new definition is crucial to understanding the rest of the project

4. Organization:

- You should do all your work on grid paper. You may work either in a new notebook or on loose paper.

Parts of the project will be problem-based and will have instructions that you should follow exactly. For these parts:

- Write all problems in order. Label each new section on your paper as it appears in the packet and then clearly label the number of each problem you are working on. You do not need to rewrite the question for each problem, though you may if that is your preference.
- Show all of your work. The reader should be able to follow the process of what you are doing, even without the packet in front of them.
- For the most part, for each problem you do should include a picture or graph. Do not try to do the problems in your head. Create a new graph/picture for each problem unless the instructions advise you to put multiple problems on the same graph/picture. You will want to be able to look back and visualize what you have done for each problem.
- If asked to make a conclusion or describe a result, do so in a complete manner. Do not ramble, but also, do not give answers that are brief at the expense of clarity. Feel free to use both pictorial and written responses in any such conclusion, though for the most part, a solely pictorial response would not suffice.

In other sections, you will have the freedom to decide how to pursue a question. For these parts:

- If you are asked to make a plan for something, be sure to write out clearly what you intend to do. This is important for you, so you can look back and remember what you intended at the beginning, but also for the reader, so they can see your full thought process. Once you make a plan, it is quite acceptable to change your mind and then do something different. Write that down as well.
- If you are asked to make any conclusions, be sure to include explanations as to why you are saying what you are. Even if you are not sure if you are correct in your conclusions, you can explain how you arrived at the idea.
- If you are asked to give a written response at any point, you may handwrite that responses on the grid paper you are working on, but respond in complete sentences and follow all requirements of manuscript form.
- You will not do everything right the first time. You may work for a long time on one particular problem only to realize that you were doing it wrong or that there is a better way. This is ok. That time is not wasted. Trial and error is part of discovery. You will not get far if you are not willing to try and then discard something.
- If you do work that ends up being wrong or you end up not using, leave it on the page. Do not erase it or throw it away. It is part of the process. Make a note next to it briefly saying that you are trying again, you messed something up, etc.

## 5. Troubleshooting:

You will not always know exactly how to proceed in a problem. At some point in the week, you WILL get stuck. When you are stuck, the most important thing to do is SOMETHING, rather than nothing.

- Write down what you know.
- Draw a picture that you think describes the situation.
- Rewrite the question in your own words.
- Pretend you understand the problem and start solving. Often times if you start solving even when you know it is not right, you will end up seeing why it is wrong, which can lead you to what is in fact right.
- Write down why you do not understand the question – i.e. try to articulate what the confusion is. This can help direct your next thoughts.
- If you truly cannot find a way forward, your advisor is always available by email.

Mathematicians learn by making and then evaluating their mistakes. You do not get to be the exception to this rule.

6. Final product: You should organize your work in order and staple or clip your paper together if you worked on loose leaf. Please include

- A cover page at the beginning. It may be typed or written by hand.
- Your time sheet at the end.

Remember: both creativity and messiness are at the heart of mathematical exploration and discovery. Do not be afraid of either!



**Project Week Time Management Guidelines  
High School Math**

Overall Time to be Logged for Project during Project Week: 30 hours

**Project Deadlines**

\_\_\_\_\_ Week of November 27, 2017 – Your teacher will notify you of your final topic

\_\_\_\_\_ Tuesday, January 9, 2018 – Final Project Due

**Suggested Use of Time during Project Week**

Plan to divide your time into 2 major blocks of time:

65% for the guided explorations

35% for the independent exploration

In other words, about 10 hours each on Sections I-III



## HOW TO WRITE A RESEARCH PAPER

1. Make a schedule. Figure out how much time to spend on particular tasks. In general, plan to spend about 20 hours researching (reading, taking notes, etc.), and about 10 hours in the writing process (including revisions and citations). Give yourself a deadline for the research to be completed, the first draft, etc.
2. Do some initial reading. You should read some general articles on the subject – secondary sources are OK – to grasp the basic issues and topics involved. These should be descriptive, in the way an encyclopedia article is descriptive, rather than argumentative. From what you learn, you should be able to sketch an outline of the subject that will structure your paper.
3. Prepare a preliminary (working) outline. This is important for labeling and organizing your note cards later. You should already have ideas of how to break your topic down into parts. Take the time to write this out on a piece of paper. You may run across other possible parts that you will add, but you need to have some way of classifying your note cards before you begin.
4. Prepare a working bibliography for each source. An easy way to do this is to write down the bibliographic information for each source on its own 3 x 5 card. It would include the full information for each source in the format that you will use for the final paper (see: Project Week Formatting and Citation Guidelines). If you do this in the beginning, you should not have to return to the book for this information. This method also enables you to re-alphabetize your cards quickly as you add or take away sources.
5. Read and take notes on cards. You should use 4 x 6 cards for this so they will hold a reasonable amount of information.
  - a. Label the card with the source (e.g., author's last name, pointing you to the correct bibliographic card) and the topic name or number that corresponds to your working outline.
  - b. Write a new card for each topic and each source. If one page of the source deals with three different topics in your outline, write three separate note cards. You are going to shuffle these cards around, arranging them by topic to fit your outline when you are finished. This will not work if you have put more than one topic on a single card.
  - c. Mark the precise page number. This will help you cite precisely and accurately later without having to return to the book to find out where you got that idea or fact. If the idea carries over from one page to another in the source, mark each part of the card with the correct page number.
  - d. In general, write the notes in your own words. This has two advantages: 1. You will be more likely to understand the notes when you come back to write the paper from them. 2. You are automatically one step removed from the original source's wording so that you are not likely to fall into plagiarism. If the author's words are important enough to quote in your paper, go ahead and copy them onto the note card, making sure to indicate a direct quote.
6. Review and arrange the cards within each topic. This step depends partly on the detail of your outline. You likely will find yourself subdividing some outline topics, even in the process of writing the cards. If so, mark the changes on the affected cards. The arrangement may reveal that your notes are thin on a particular topic. If so, go back and take some more notes.
7. Write the first draft from the cards. Depending on the quality of your work so far, you should be able to get a decent first draft just by typing in sentences from your note cards. You certainly should have enough information to make the writing go easily. Put the citations in the paper while you are writing, since the information is on the card in front of you.
8. Revise your paper. Reread the draft and make corrections on it. Write a second draft based on those revisions and continue to improve your paper. Work hard at making your writing clear and concise. Make sure all paraphrases and quotations are worked smoothly into the paper. Read the work aloud. Your ear will catch mistakes and awkward phrasing that your eye may not catch.
9. Produce the final copy.
10. Assemble your Endnotes and Works Cited pages. You may include a Works Consulted page if you have interesting sources but did not cite them.



## Project Week Formatting and Citation Guidelines

### Guidelines for Research Paper Bibliography

A large part of your Project Week work will be the researching and writing of a paper. A research paper requires you to gather, read, and evaluate multiple sources on your topic, and with these write a clear and informative paper.

Source requirements (*at minimum*): **3 print; 2 electronic**

For the written component of your project, all material must be properly formatted and cited. The MacLaren manuscript form applies, specifically, *12 pt. Times New Roman font, double spacing, and 1-inch margins.*

**Plagiarizing, Quoting, and Paraphrasing:** Please be careful when quoting and paraphrasing that you DO NOT plagiarize an author's work. Here is a quick outline of the differences between quotation, paraphrasing, and plagiarism:

*Plagiarism:* Plagiarism is using someone else's ideas in your work without properly citing that information. Plagiarism can be using the exact words of an author without quoting and citing, or paraphrasing too closely to the original text. Simply moving words around or making slight changes DOES NOT mean you have created an original thought!

*Quotation:* If you are using the author's *exact* words, you must quote WORD FOR WORD, and include quotation marks around all quoted material.

*Paraphrasing:* If you paraphrase, that means you are taking material from the source and putting it into your own words. When you paraphrase you demonstrate your understanding of an author's argument or assertion, but you are still using his or her ideas, so this material MUST STILL BE CITED (as explained below). Be careful when you paraphrase that you really understand what the author is trying to say.

**Paraphrasing Exercise (from <http://owl.english.purdue.edu/owl/resource/563/02/>):**

We will continue to use MLA guidelines when paraphrasing material. Remember that you must still include a citation for a paraphrase.

*The following passage is taken from an original source:*

The twenties were the years when drinking was against the law, and the law was a bad joke because everyone knew of a local bar where liquor could be had. They were the years when organized crime ruled the cities, and the police seemed powerless to do anything against it. Classical music was forgotten while jazz spread throughout the land, and men like Bix Beiderbecke, Louis Armstrong, and Count Basie became the heroes of the young. The flapper was born in the twenties, and with her bobbed hair and short skirts, she symbolized, perhaps more than anyone or anything else, America's break with the past.

—from Kathleen Yancey, *English 102 Supplemental Guide* (1989): 25.

*This is a legitimate paraphrase of the same passage (including the proper in-text citation):*

During the twenties lawlessness and social nonconformity prevailed. In cities organized crime flourished without police interference, and in spite of nationwide prohibition of liquor sales, anyone who wished to buy a drink knew where to get one. Musicians like Louis Armstrong become favorites, particularly among young people, as many turned away from highly respectable classical music to jazz. One of the best examples of the anti-traditional trend was the proliferation of young "flappers," women who rebelled against custom by cutting off their hair and shortening their skirts (Yancey 25).

### **In-text Citations:**

To cite material within the text, we will be using MLA guidelines. When you **paraphrase** or **quote** an author's work in your paper, you must include a citation. We do this by including the last name of the author and the page number on which the material was found. The citation goes inside of the end punctuation mark. For example,

*Edmund is described by C.S. Lewis as "becoming a nastier person every minute" (48).*

or

*Edmund is described as "becoming a nastier person every minute" (Lewis 48).*

For electronic sources, you do not need a page number, but try to include the author of the webpage and article title.

### **Bibliography**

For every source you cite, you will have a corresponding entry in your Works Cited page, or bibliography. Your Works Cited page must be on a separate sheet of paper (see sample page).

For books, your citation should follow this format:

Last name, First name. *Title of book*. Place of Publication: Publisher, Year of Publication. Medium of Publication (i.e. Print).

For books with more than one author, the format should be:

Last name, First name and First name, Last name.

For chapters or essays in an anthology, the format is:

Last name, First name. "Title of Essay." *Title of Collection*. Ed. Editor's Name(s). Place of Publication: Publisher, Year. Page range of entry. Medium of Publication.

For an electronic source, try to find the following information:

- Author and/or editor names (if available)
- Article name in quotation marks (if applicable)
- Title of the Website, project, or book in italics. (Remember that some Print publications have Web publications with slightly different names. They may, for example, include the additional information or otherwise modified information, like domain names [e.g. .com or .net].)
- Any version numbers available, including revisions, posting dates, volumes, or issue numbers.
- Publisher information, including the publisher name and publishing date.
- Take note of any page numbers (if available).
- Date you accessed the material.
- URL (if required, or for your own personal reference).

For example:

Stolley, Karl. "MLA Formatting and Style Guide." The OWL at Purdue. 10 May 2006. Purdue University Writing Lab. 12 May 2006  
<<http://owl.english.purdue.edu/owl/resource/557/01/>>.

For additional information on MLA Guidelines and the writing process, please see the very useful OWL at Purdue website: <http://owl.english.purdue.edu/owl/>

### Works Cited

*The Purdue OWL*. Purdue U Writing Lab, 2008. Web. 27 Dec. 2008.

Lewis, C.S. *The Lion, the Witch, and the Wardrobe*. New York: Harper Collins Children's Books, 1950. Print.



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MANUSCRIPT FORM  
Standards for Written Work

1. Use white, college-rule, loose-leaf paper, standard letter size.
2. Write only on one side of the sheet.
3. Write in blue or black ink or typewrite. Double space the lines. Word processors may be used.  
No erasable ink or felt tip pens may be used.
4. Leave a margin of about two inches at the top of the page and margins of about one inch at the sides and bottom. The left-hand margin must be straight; the right-hand margin should be as straight as you can make it.
5. Font: 12-point font/Times New Roman or Calibri.
6. Indent the first line of each paragraph about one-half inch from the left.

7. Identify your work with the following heading:

Full name  
Course/Teacher's Name  
Assignment  
Date Due

Put this heading in the upper right hand corner above the lines.

8. If your paper has a title, write it in the center of the first line. Do not enclose the title in quotation marks or underline it. Skip a line between the title and the first line of your composition.
9. If your paper is more than one page in length, number the pages after the first, placing the number in the bottom right corner, about a half inch up from the bottom.
10. Write legibly and neatly.
11. Do not fold paper. Keep them flat in your folders.
12. Staple or paper clip pages together. Do not fold or tear the corners.
13. Cross out errors with one line, or use white-out sparingly.

