

Physics Mini Project Outline

Project Introduction

Was there a topic this year that you wanted to delve deeper into but didn't get a chance? Was there a topic you were interested in but was never covered in grade 11 or 12? In this project, you'll get a chance to extend your learning beyond physics 11 and 12 and share this with the class.

Purpose

Investigate a topic of interest and share your understandings through a multimedia presentation.

Option A

- 1) Choose a topic/concept that we learned this year AND
- 2) Extend your understanding of this topic by:
 - a) Applying this concept to a real-life example that we did not discuss in class (ex. Applying Faraday's Law to Inductors)
 - b) Researching a related new concept that we did not cover this year (ex. Connecting electromagnetism to light)

This is a good option if you want to get started on your review while enhancing your understanding of the topic.

Option B

- 1) Choose a new topic/concept/theory that was NOT covered in grade 11 or 12 physics AND
- 2) Build your understanding of this topic by focusing your research on one key concept related to your topic.

Examples of topics that were not covered:

- Nuclear Physics
- Quantum Physics
- Fluid Dynamics
- Relativity (for some of you)
- Astrophysics
- Optics (for some of you)
- Particle Physics
- Rotational Dynamics (excluding circular motion and torque)
- Thermodynamics
- Electrostatics

This is a good option for you to explore topics of your interest that were not covered in grade 11 or 12. It may also help you with post-secondary courses depending on what you're taking.

****Note: you CANNOT duplicate your research from previous projects from this year and last year.**

Multimedia options

*Your presentation must be **no more than 5 minutes**. Make sure the physics is clearly incorporated in the presentation. The list below is not exhaustive. You may hand in a script explaining the physics behind your creation on top of your presentation if you'd like.*

- Powerpoint presentation
- Prezzie
- Video
- Skit
- Song with lyrics/Parody
- Interpretive dance (with narration)
- Poster
- Storytelling

Groups

Groups of 2 to 3. NO more than 3 people per group.

Name: _____

What to hand in

1) Topic proposal (group)

Format: E-mail (word doc or pdf attachment optional)

Include:

- a) Your topic (and extension)
- b) Name of group members
- c) Presentation format

I will reply your e-mail and tell you whether it is approved.

2) Presentation multimedia (group)

Include:

- a) Presentation (under 5 minutes)
- b) Script if appropriate
- c) References in APA format

3) Reflection (individually)

Format: 1-2 pages double spaced typed or written

Content: Break your reflection into 2 parts

Part 1 – Discuss what you learned from doing this project. You can talk about knowledge, skills, or other insights gained after completing this project that will be useful to you. Discuss how you know that you improved these skills and how these skills/knowledge will help you in the future.

Part 2 – Include a list of what each member in the group did and how they contributed to the project, including yourself.

4) Group member evaluation (individually)

Format: 1 page typed or written and an evaluation rubric provided to you

Content: You will evaluate how well your group member contributed to the project. You will complete:

- a) A rubric evaluation on how well your partner contributed to the project.
- b) Justifying your rubric evaluation of your partner by describing how your partner contributed to the project.

Deadlines

Topic Proposal due via e-mail:	Friday May 26th at 11:59pm	
Presentation due in class (script + references):	Day 1: Thurs June 1st	Day 2: Fri June 2nd
Group member evaluation due in class:	Day 1: Thurs June 1st	Day 2: Fri June 2nd
Reflection due the following class:	Day 1: Mon June 5th	Day 2: Tues June 6th

Assessment: Rubric

	Beginning 1	Developing 2	Accomplished 3	Exemplary 4
<p>Content: Physics application and discussion (20%) In presentation and/or script: 1) Depth of physics 2) Accuracy</p>	<p>1) Content of presentation has little to do with physics.</p> <p>2) Presentation shows major gaps in understanding of physics.</p>	<p>1) Content of presentation shows minimal depth in understanding.</p> <p>2) Presentation is generally accurate but contains common misconceptions and/or minor errors.</p>	<p>1) Content of presentation demonstrates some depth of understanding.</p> <p>2) Knowledge and understanding presented is generally accurate. One or two minor errors may be present but do not distract audience from the main message of the presentation.</p>	<p>1) Content of presentation demonstrates good depth of understanding.</p> <p>2) Knowledge and understanding presented is accurate. Presentation may discuss common misconceptions surrounding topic.</p>
Group grade.				
<p>Content: Extension (20%) Extension could be a new concept/theory or a new application of something we learned before.</p>	<p>The physics content relies heavily on material previous covered in Physics 11 and 12.</p>	<p>The physics content relies on material previous covered in Physics 11 and 12 with very little coverage of a new concept/theory or application.</p>		<p>The physics content fully discusses a new concept/theory or application outside of material covered in Physics 11 and 12.</p>
Group grade.				
<p>References (10%) 1) Properly cited sources using APA format. 2) Number of sources used.</p>	<p>1) References section present but sources are not properly cited (ex. A list of websites)</p> <p>2) Only 1 source consulted</p>	<p>1) References section present but sources are not properly cited (ex. A list of websites)</p> <p>2) Only a couple of sources consulted. A limited range of sources considered.</p>	<p>1) Sources cited in APA format.</p> <p>2) Multiple range of sources from a variety of locations consulted. > 2 sources used.</p>	<p>1) All sources cited in APA format including content information, graphics, videos, etc</p> <p>2) Multiple range of sources from a variety of locations consulted. > 4 sources used.</p>
Group grade.				
<p>Delivery (20%) 1) Clear and concise 2) Organization 3) At least 2 modes of delivery</p>	<p>1) Message is unclear. Mode of delivery distracts the audience from the main message.</p> <p>2) Organization is attempted but overall confusing.</p> <p>3) Only 1 mode of delivery used (ex. Presenter was only talking).</p>	<p>1) Message is understood. Some parts of the presentation are unclear.</p> <p>2) Organization is present.</p> <p>3) 2 modes of delivery used unequally (ex. Presenter was mostly talking but used 2 pictures in presentation).</p>	<p>1) Message is presented clearly. There may be some repetition and/or inefficient use of time.</p> <p>2) Organization is present and easy to follow.</p> <p>3) 2 modes of delivery used equally.</p>	<p>1) Message is clear and concise.</p> <p>2) Organization is easy to follow and enhances the message.</p> <p>3) 2 modes of delivery are integrated well. A 3rd mode of delivery might be used.</p>
Individual/group grade:				

Reflection (10%) You will be assessed on the depth of your reflection on your learning process.	Reflection demonstrates a superficial analysis own learning process.	Reflection analyzes own learning process. Reflection may have heavily focused on one avenue such as knowledge or skills.	Reflection demonstrates a complete analysis of own learning process. Multiple avenues are explored including knowledge and skills.	Reflection demonstrates honesty and a critical analysis of own learning process. Multiple avenues are explored including knowledge and skills.
Individual grade.				
Group member evaluation (10%) Your group member will evaluate how well you contributed to the project.	My group member did very little close to nothing for the project.	My group member contributed the bare minimum of his/her share. She/he may have done so inconsistently throughout the course of the project.	My group member contributed his/her equal share to the project but may have done that inconsistently throughout the course of the project.	My group member actively contributed her/his equal share to the project's progress and its final product.
Individual grade.				
Holistic (10%) This criterion describes how much care you put into your project in completing all the tasks.	1) 1 of the 4 items handed in on time 2) Little to no items are completed with care and thoughtfulness	1) 2 of the 4 items handed in on time 2) Some items are completed with care and thoughtfulness	1) 3 of the 4 items handed in on time 2) Most items are completed with care and thoughtfulness	1) All 4 items handed in on time 2) All items are completed with care and thoughtfulness
Individual grade.				

Total: 2 x _____ + 2 x _____ 1 x _____ 2 x _____ 1 x _____ 1 x _____ 1 x _____ = _____ /40 × 0.5 = _____ /20

Feedback
