

Semester One Final Project

Polar Research Problem

Horizon Christian School

Dear Parents, our partners in education:

Horizon Christian School is increasingly committed to providing your student with opportunities to use their thinking in real-world context. We see this as valuable in order to better prepare them to be thoughtful, world citizens with a Biblical perspective. Our 1st Semester Final is designed to show a student's ability to apply what they know in a comprehensive, problem-solving group activity.

The Earth, and its climate, are constantly changing. Scientists fear the current warming trend of our planet may have long-term effects on life as we know it. Dramatic changes are most easily seen in the polar regions and carry consequences that will affect our planet. We need scientific data to determine the best course of action. Students will be tasked with determining the best use of global resources for data collection at the poles through the establishment of stable, long-term international research stations. How should this plan be implemented? What are the potential drawbacks?

Your student has been building a foundation of knowledge in each of their courses for the purpose of engaging in a meaningful way with the questions posed. They will be given support as necessary to showcase what they know throughout the week.

As this is a project that is both content and effort driven, full attendance is imperative for your student's success. Horizon staff recognizes that emergencies do occur, so the staff has developed an Emergency Plan if an event should arise for any given student. This may be a great time to help your student understand that being tired or feeling unwell is not an emergency.

Students will be placed in evenly mixed groups of both ability and grade level. They will be guided to assign jobs and choose areas of expertise within their group as well as being given direction in solving a challenge. To mitigate the obstacles so often encountered in group projects, there will be multiple checks-and-balances for each student before a final score is reached. There are both individual and group components to be evaluated, as well as written, spoken, and aesthetic components scored in light of their solution(s) to the problem.

During work groups this Friday, students will be given some concrete, preliminary information that will help them more fully understand the process of Finals' Week. Teachers will spend next week reinforcing, highlighting, and refining the key concepts for which students will be held responsible. Monday, they will be appointed to their jobs, do some preliminary research, and choose a direction the group will go. On Day 2, Tuesday, students will regroup, refine ideas, and do further research. Day 3, Wednesday, will be all about refinement of the group and individual pieces of the final presentation which will take place mid-morning around 10:00 am on Thursday and lasting until around 2:00. The week will culminate in a celebration activity of 1st semester finals. We invite you to come and be part of the audience for these presentations.

Finally, as partners in education, Horizon staff has a few things you can do to support your student's success in their course assessment. Be a good listener. Ask them questions about their area of expertise for the project. Be positive, encouraging your students to be curious and to share their ideas with their group. Teachers are listening for that, so they can know what the student knows. Finally, enjoy the process of your student showcasing, in a holistic way, the knowledge they have acquired in their educational process.

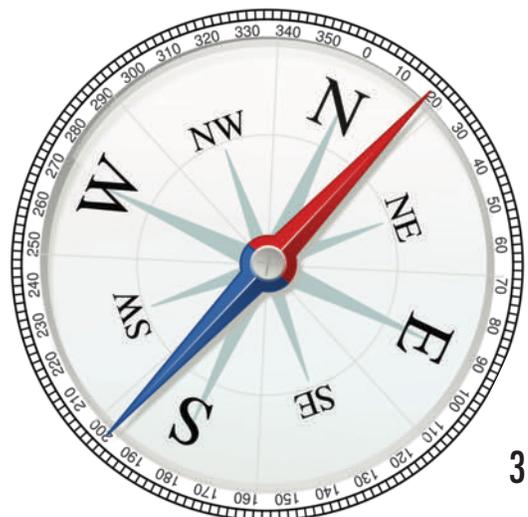
We appreciate your support as we strive to help your students be active, engaged learners.

In His service together,

Horizon Secondary Staff

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Prompt for Polar Research / Finals 2019–2020

The Earth, and its climate, are constantly changing. Scientists fear the current warming trend of our planet may have long-term effects on life as we know it. Dramatic changes are most easily seen in the polar regions and carry consequences that will affect our planet. We need scientific data to determine the best course of action.

Your team's task is to determine the best use of global resources for data collection at the poles. How should this plan be implemented? Consider the potential drawbacks in defending your position.

On the last day of this project your group will be giving a compelling 10-minute multimedia presentation to world leaders at the 2020 Horizon Polar Summit. Your research must be summarized in one to two pages using APA format, to be submitted at the time of your presentation.

Below are key questions to consider as your group explores this topic:

Scientists wish to determine what the direct consequences of melting ice caps at the polar regions might be. For example:

- What are the effects of melting ice caps on the inhabited parts of the planet?
- How do warming poles and warmer oceans affect the weather on Earth?
- What is the effect on sea life, both at the poles and worldwide?
- Is warming permafrost a concern?

To better understand our future, it is often helpful to look at our past. You might consider:

- What has happened to the poles and global weather in the past?
- How have these changes impacted the environment in the past?
- How has the changing environment impacted plant and animal species around the world?
- How have people of the past successfully or unsuccessfully adapted to dramatic climate changes?

To better understand the current state of our climate, some scientists have proposed the creation of permanent data collection sites at our Earth's poles. This would require a global effort, but not all countries are in agreement.

- What are the possible benefits of these research stations?
- What are some of the concerns about these research stations?
- What would be the potential cost of this project and how would it be funded?
- What is the United States' responsibility?
- Who should interpret the data once collected?
- Should the believer's response to scientific data about climate change be any different than the nonbeliever's?

5 Ws and an H

The Why:

With the advent of technology, the work place is changing. Schools must offer students opportunities to apply knowledge in real-world settings to better prepare them for the market place they will soon be entering. This year's Finals are designed to do just that.

Students have been given the knowledge in each of their courses necessary to engage the questions posed in a meaningful way. They will be given support as is necessary to showcase what they know throughout the week.

The How:

1. With the help of your Teacher Guide, organize the provided folder. Carefully read through the information provided to you in this packet. This will let you know how to get the grade you want on the Final for history, science, English, Bible, and some of your electives.

2. As a group choose a Challenge.

3. With the help of your Teacher-leader, appoint positions to each member of the group. Student use of time is one aspect of the overall score, so be fully present for full points. Place your name and appointed position on your individual work sheet.

4. Do your job and contribute to the overall moving forward of your group to a solution to present on Thursday.

5. Turn in your work to the group leader at the end of every day. All research will be locked up each evening and distributed the next morning.

6. Make an informative, aesthetically pleasing Powerpoint, prezi, or infographic that highlights the necessary subject material and the group solution to your chosen challenge. This is your visual aid.

7. The group gives a 15 minute presentation in the sanctuary to a panel of

teachers and the student body to receive that part of your project grade. It is up to the group how the presentation is divided among the members. Most members should be doing something to help the presentation on stage. Not all members need to be on stage, but must be obviously supporting those who are.

8. Prepare and turn in a one to two page summary document highlighting the necessary subject material and the solution at which your group arrived. Include a reference sheet with all sources your group looked at for information. (One per group, APA style)

9. Prepare and turn in your personal folder with all of the sheets appropriately filled out.

10. Advocate for yourself! The staff is here to help you work through obstacles you encounter both individual and corporate. We can't read your minds

More How and some When:

Each student will receive both an individual (75%) and a group grade (25%) for this project. The individual score will be comprised of time use, content area engagement as measured by language usage, and the content knowledge demonstrated through application to the project. The group score will rest on the quality of the final presentation: content, aesthetics, solutions posed. In addition, each student will score themselves in these same areas. All scores will be averaged to give a final score in each of the represented subject areas for the final test grade in that class.

Expect to be present each day of Finals' Week as that will affect your score.

Staff does have a contingency plan in the event of an



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emergency absence during Finals' Week. Those students who need this will be contacted by the staff and directed as to what to do.

The What:

Thinking: Each student should show as much thinking as they can in their individual folders, even if that thinking doesn't make it into the final presentation! This is from where we teachers pull much of your individual grades. It can even influence the overall group grade at some level. Show your thinking anywhere you can in your folder.

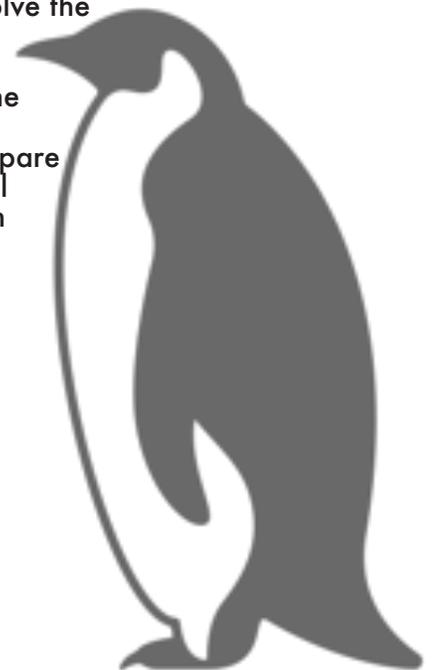
Listening, Reading & Viewing: Look at the problem from many different perspectives. You can't know what you don't know, so listen to others in your group. They will know things you may not about the problem. Read articles and view videos to see what others have thought about the challenge before you. *Scientifically*, what thinking can be used to solve the problem? What relationship does the problem have to the environment, habitats, climates, food and water sources, etc.? How can technology help or further exacerbate the problem? *Historically*, how has this problem affected today's economy, trade, or governments around the world? How does what happened in the past affect today? Did those who came before us really intend for us to use what they handed us the way we do? *Culturally*, does this problem affect how we work, play, and share with our neighbors both locally and globally? Does it affect how we order things or see beauty? *Biblically*, does the Bible have anything to say about the challenge you are faced with? Might God have a solution written in the pages of his scripture? What moral and ethical responsibilities should Christians have when thinking about the problem and the possible solutions to it? Write down the resources you look at to shape your thinking.

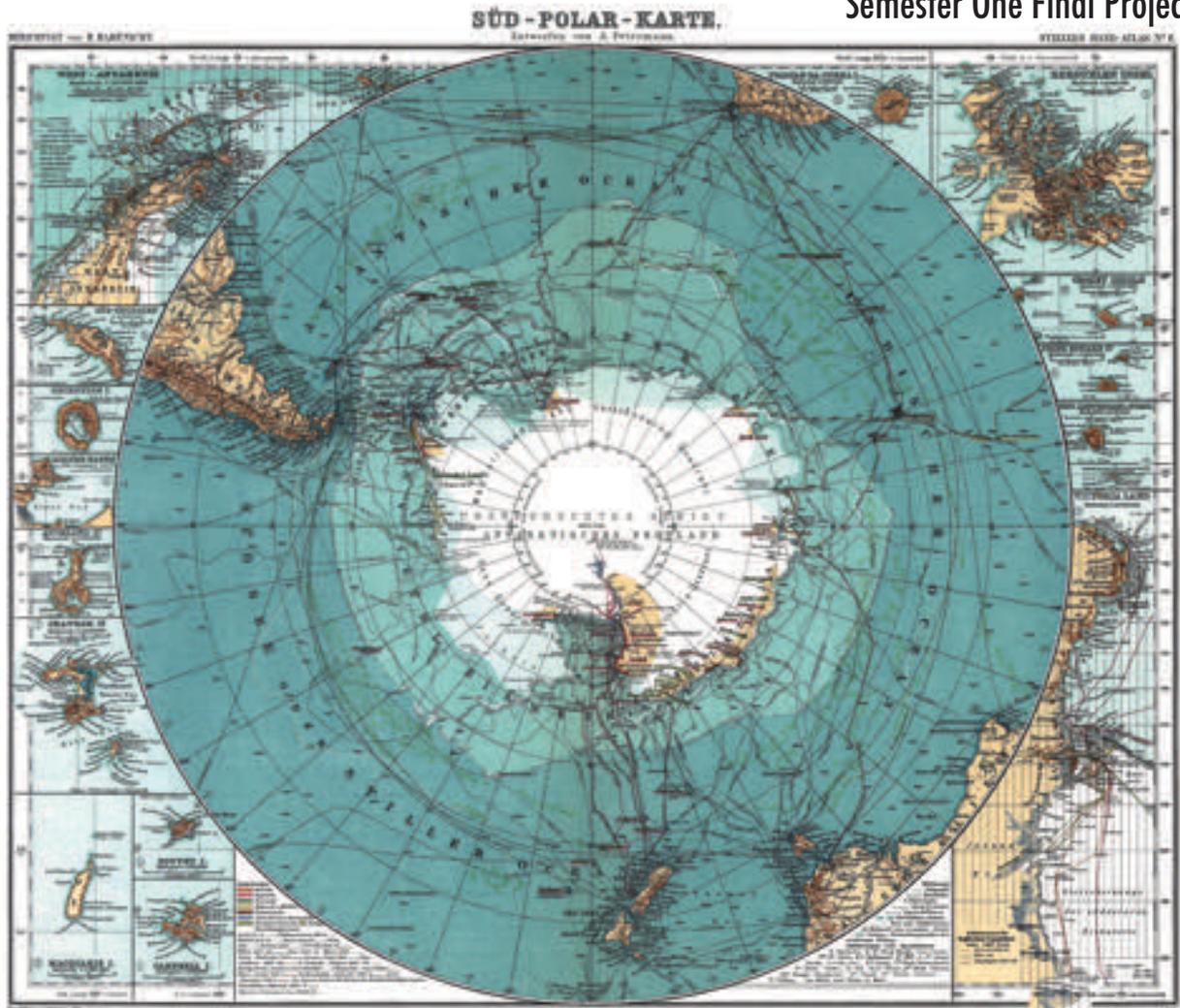
Speaking: Everyone in your group holds a piece of the puzzle that is the solution to the problem set before you. People cannot read your mind! Throughout the week many opportunities will be given for

students to share what they know or are wondering about in order to come up with a workable solution. Information you hold will be important in shaping the outcome of your group. Speak what you know and what you learn when you are listening, reading, and viewing. Your group will prepare a public presentation for the end of the week.

Calculating: Solutions to problems will always cost something, time, money, space, other resources. Carefully count the cost of what you propose to fix the problem set before you. Is the outcome worth the potential costs? Show how you calculate the potential cost in light of the potential outcome?

Drawing & Writing: Throughout this project you will benefit from something someone else has written down. Others will benefit from the thinking you draw and write down in your folder. They will be able to look up and think about the resources you recorded in writing. The process of moving your pencil on the paper will benefit you as you refine your thinking about the challenge. Lastly, it is how the teachers know what you know; it will help you get the grade you want to have on this final project of the semester. Draw and write in your folder what you know and learn to help you solve the problem. As a group, write a 1-2 page summary of the solution your group decides is best. Prepare an orderly, beautiful visual aid to go with your group presentation.





Jobs

Each team member will adopt a job and will become either a content expert and an expert at some skill necessary for your team's success this week:

<i>Project Manager</i>	
<i>Content Experts</i>	<i>Skills Experts</i>
Cultural/Ethical (spiritual/social impacts of solution)	Aesthetics (continuity of project)
Science/Technology (what is needed)	References (about 2 pages; APA style)
Cost Analysis (implications of solutions)	Public Speaking (main spokesperson)
Historical (impact; policy needed)	Written Publication (1-2 page summary)
Challenge Topic (provide questions)	Charts/graphs/maps (clarify solution)

Teams

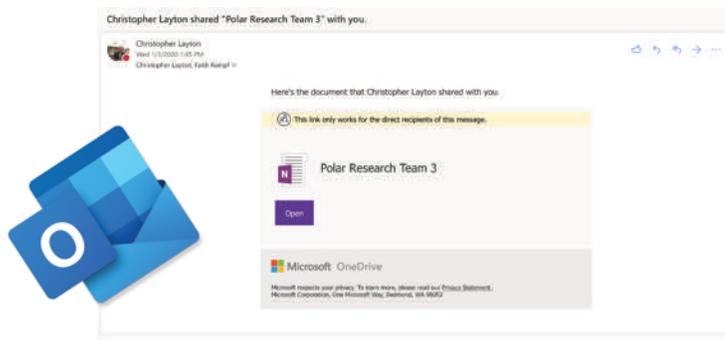
Student names obscured.

Accessing and Using Team OneNote Notebooks



Accessing your Team's OneNote Notebook

1. Download and install Microsoft OneNote for your device—PC, Mac, Android, iPhone/iPad, all are supported! Download at the iTunes or Mac App Store, Google Play Store, or go to: <https://www.onenote.com/download>
2. Log Into OneNote using your Horizon email address and password. Forgot your Horizon email or password? See Mr. Layton.
3. In a Web Browser, Go to Office.com and log in using your Horizon email and password. Choose "outlook" to view your school email.
4. Find the email from Mr. Layton sharing a Polar Research Team with you, and select the link to open the OneNote Notebook. **IMPORTANT:** you must follow this link before the notebook will be visible to you.

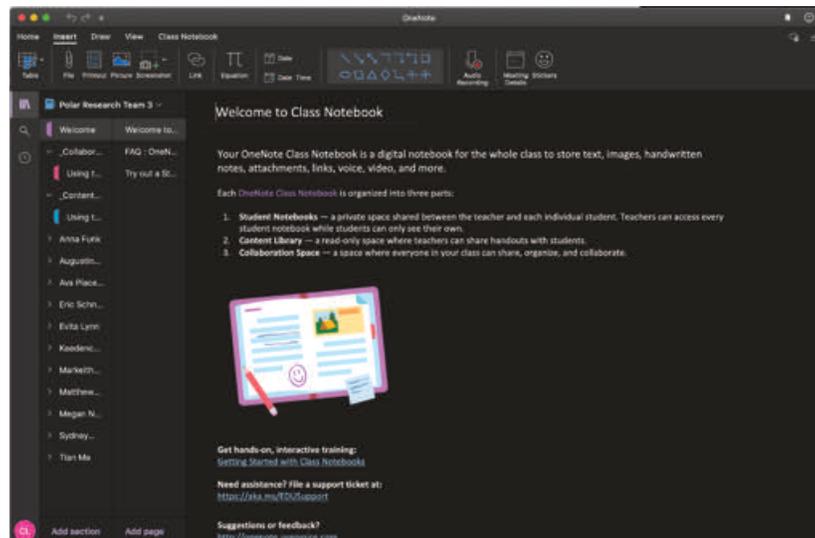


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5. You may either use OneNote in the Web Browser interface, or navigate back to the app you downloaded in step 1 and open the notebook by selecting "Notebooks" at the top of the left column of the app, then "Add Notebook" at the bottom of the same left column.

Using Shared OneNote Notebooks:

1. Shared Notebooks are divided into three sections:
 1. **Collaboration Space:** This space is for many-person work. All team members can see and edit documents in this space.
 2. **Content Library:** This space is for document and resources storage and retrieval. All team members can see these documents, but only teachers can add or edit documents in the content library. For this Final Project, the faculty have loaded this section with an initial collection of helpful resources.
 3. **Student sections:** Each team member has their own space, for keeping resources and taking notes. Other team members cannot see or edit a student's work in this space, but the teacher / team faculty member can.
2. For each Notebook section, as many pages can be created as the team needs. Pages can be modified with different colored paper, and can contain any number of elements: Web links, attached documents, text, images, movies (although the size is limited), tables and charts, and handwritten elements (for devices with pencil support, as iPads.)



Schedule

Monday, Tuesday:

When	What	Where
1 (8:00-8:20)	Large Group Facilitator	Gym with Mrs. K & Mr. Petshow
2 (8:25-9:45)	Foster Group 1: Mr. K Foster Group 2: Mrs. Wade Foster Group 3: Mr. Layton Foster Group 4: Mrs. Hardin / Mr. Brown Foster Group 5: Dr. Tip Foster Group 6: Ms. Anderson	
3 (9:55-10:45)	Breakout 1 Challenge Question: Mr. K History: Mrs. Wade Cost Analysis: Dr. Tip Culture/Ethics: Mr. Brown Science/Tech: Ms. Anderson	
4 (10:50-11:50)	Foster Group 1: Mr. K Foster Group 2: Mrs. Wade Foster Group 3: Mr. Layton Foster Group 4: Mrs. Hardin / Mr. Brown Foster Group 5: Dr. Tip Foster Group 6: Ms. Anderson	
5 (11:55-12:35)	Reading Group Jr. High grp 1: Mr. K Jr. High grp 2: Mr. Brown High Sch grp 1: Mr. Layton High Sch grp 2: Ms. Anderson High Sch grp 3: Dr. Tip	
Lunch (12:35-1:20)		
6 (1:25-1:55)	Breakout 2 Public Speaking: Mrs. Wade APA References: Mr. Layton Maps/Charts/Graphs: Mrs. Hardin Project Manager/Written Paper: Mrs. K Aesthetics: Ms. Rouse	
7 (2:00-3:00)	Foster Group 1: Mr. K Foster Group 2: Mrs. Wade Foster Group 3: Mr. Layton Foster Group 4: Mrs. Hardin / Mr. Brown Foster Group 5: Dr. Tip Foster Group 6: Ms. Anderson	

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Wednesday:

When	What
1 (8:00-8:50)	Foster Group 1: Mr. K Foster Group 2: Mrs. Wade Foster Group 3: Mr. Layton Foster Group 4: Mrs. Hardin / Mr. Brown Foster Group 5: Dr. Tip Foster Group 6: Ms. Anderson
2 (8:55-9:45)	Dress Rehearsal Group 1: Ms Anderson Group 2: Mr. K Group 3: Mrs. Wade Group 4: Mr. Layton Group 5: Mr. Brown Group 6: Mr. Petshow
3 (9:55-10:35)	Breakout 1 Challenge Question: Mr. K History: Mrs. Wade Cost Analysis: Dr. Tip Culture/Ethics: Mr. Brown Science/Tech: Ms. Anderson
4 (10:40-11:30)	Dress Rehearsal Group 1: Mr. Brown Group 2: Dr. Tip Group 3: Ms Anderson Group 4: Mr. K Group 5: Mrs. Wade Group 6: Mr. Layton
5 (11:45-12:35)	Breakout 2 Public Speaking: go to reassignment APA References: Mr. Layton Maps/Charts/Graphs: Mrs. Hardin Aesthetics: Ms. Rouse Project Manager/Written Paper: Mrs. K
Lunch (12:35-1:15)	
6 (1:15-1:45)	Foster Group 1: Mr. K Foster Group 2: Mrs. Wade Foster Group 3: Mr. Layton Foster Group 4: Mrs. Hardin / Mr. Brown Foster Group 5: Dr. Tip Foster Group 6: Ms. Anderson
7 (1:50-3:00)	Final Rehearsal with Foster Group Group 1: Mr. K Group 2: Mrs. Wade Group 3: Mr. Layton Group 4: Mrs. Hardin Group 5: Mrs. K Group 6: Ms. Anderson

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Thursday:

When	What
1 (8:00-8:50)	Foster Group 1: Mr. K Foster Group 2: Mrs. Wade Foster Group 3: Mr. Layton Foster Group 4: Mrs. Hardin / Mr. Brown Foster Group 5: Dr. Tip Foster Group 6: Ms. Anderson
2 (8:55-10:00)	Foster Group Final Finishing Touches
3 (10:05-12:35)	Presentations
Lunch (12:35-1:15)	
6 (1:15-1:45)	Finish Presentations
7 (1:50-3:00)	Finalize Assessments / Party Time



Thinking Sheet

Who? _____ Op # _____

The problem with _____

My solution is _____

Scientific thoughts (environment/habitat/technology)...

Cultural thoughts (politics/economy)...

Biblical thoughts (ethics/society/scripture)...

Other thoughts...

Historical thoughts (economy/trade/government)...

ConceptDictionaryfor

Name

Picture Dictionary

**What Does the Bible Have to say about God's
faithfulness to creation and our responsibility to
care for it?**

"You are the LORD, you alone. You have made heaven, the heaven of heavens, with all their host, the earth and all that is on it, the seas and all that is in them; hand you preserve all of them; and the host of heaven worships you."

Nehemiah 9:6