

Physical Science Collaboration Projects

The following is a summary of each of the projects available for you to complete in Physical Science. You must complete one during each segment of the course.

To find a partner, go the Discussion Group and post a note with your name, email and which project you would like to do and/or respond to someone else who has already posted a topic that you would like to do.

Please review the Rubric at the bottom of the page. This rubric applies to all collaborative assignments. Once you have completed a project, the other collaboration assessments will be removed from your list.

Segment 1:

2.03 Electromagnetic Spectrum Collaborative Assignment

Topic: Electromagnetic Spectrum

Compare and contrast the different parts of the Electromagnetic Spectrum. Evaluate the usefulness of each part and decide which part is most useful, or most important, to you and society as a whole. You must provide two reliable sources to back up your opinion. Recall that reliable sources include scientific sites or publications, education sites or publications, and government sites or publications.

The purpose of this assignment is to debate and consider different opinions on this topic. There is no right or wrong answer. However, this discussion should represent varying opinions. You will need to do some research and back up your opinions with facts. Remember to cite your sources!

2.05 Science and You Collaborative Assignment

Topic: Become an Investigator – What is the best invention of all time?

As you learned in the lesson, inventions are born out of scientific questioning and the scientific process. As a result, our world is very different than it was 100 years ago! This brings us to the question, “What is the best invention of all time?” Your task as an investigator is to research and select two inventions that you believe are the beneficial or interesting inventions. Once you have your inventions selected, you will share your inventions with the group. Your group will debate the value of each invention and come to a consensus on which of the invention the group believes should be designated as the “best”. Each group member will need to produce evidence of the collaborative discussion and decision making process. The final collaborative report, created by each group member individually, will include the two inventions that you presented and a summary of what invention the group decided should be designated the “best”.

Segment 2:

5.04 Hydrogen Hydroxide Collaborative Assignment

Topic: How water and its special properties affect life on Earth

Each member of your group should choose a specific ecosystem from the following list: desert, prairie, coastal, forest, tundra. (If you need other examples, you may use urban, rainforest, and coral reef ecosystems.) Research how the properties of water you have learned about make life possible within your chosen ecosystem. Be sure to include specific examples of organisms and how their lives are supported by the special properties of water. Once you have concluded your research, share your information with your group. Your group will then discuss and come to a consensus on which ecosystem relies most on the special properties of water to support the organisms living within it. Remember, there is no right or wrong answer. The decision your group makes should be based on each member's research and what you know about the special properties of water. Each group member must then create an individual report. Included in each report should be the following information:

- how the properties of water you have learned about make life possible within your chosen ecosystem
- which ecosystem was chosen as the one that relies most on the special properties of water to support the organisms living within it
- a brief summary of the group discussion and how a final decision was made
- at least two reasons why you feel the ecosystem chosen by your group is the best choice, or if you disagree with the group decision, reasons why you feel another ecosystem should have been chosen

6.02 Reactions Collaborative Assignment

Topic: Acid precipitation

Message: Acid precipitation is a harmful side effect of using fossil fuels to produce energy. Gases produced by burning fossil fuels form acids when they combine with oxygen and water in the air. The acids fall to Earth as acid precipitation in the form of rain, snow, and sleet.

- Refer to the collaborative assignment for some of the reactions that cause acid precipitation.

Each member of your group should choose one of these reactions. First, identify the products and reactants involved and the type of chemical reaction you have chosen. Then, research the effects of the type of acid you chose on one of the systems listed below. Also find out what can be done to lessen these effects.

- buildings and statues
- lakes and rivers
- forests
- humans

- food web

After you have completed your research, write a one–page report on your findings. Remember to include at least two reliable sources that you used. Then, get together with all the members of your group to debate whether enough is being done to combat acid precipitation in your community and state. Use what you have learned about acid precipitation when you take part in the debate. Brainstorm ideas of how you, as students, can help with this problem. As a group, turn in a written summary of the results of your debate and the ideas contributed by each group member.

Rubric:

	10	5	0	Total Points Earned
Project plan document (10 points possible)	Includes names of project team with emails	Incomplete, missing names or emails	Did not include	
Proof of collaboration 1 (10 points possible)	Item clearly demonstrates interaction between all group members	Item difficult to read, interpret, or does not show collaboration between all group members	Did not include	
Proof of collaboration 2 (10 points possible)	Item submitted clearly demonstrates interaction between all group members	Item difficult to read, interpret, or does not show collaboration between all group members	Did not include	
Discussion of opinions shared during collaborative project (10 points possible)	Demonstrates understanding of topic and substantial interaction between group members	Topic not defined or discussed or discussion not well developed	Did not include	
Resource 1 used for discussions (10 points possible)	Reliable resource from a scientific, educational, or governmental site	Unreliable resource	Did not include	
Resource 2 used for discussions (10 points possible)	Reliable resource from a scientific, educational, or governmental site	Unreliable resource	Did not include	
Your concluding remarks (10 points possible)	Conclusion presents a summary of your contributions, opinions, resources, and the final outcome of the	Conclusion does not include a summary of your contributions, opinions and resources	Did not include	

	group discussion	OR Conclusion does not include a summary of the final outcome of the group discussion		
Comments on collaboration (10 points possible)	Comments include your opinions on the collaborative experience and the advantages and disadvantages of your collaborative project	Comments include only a portion of the required information. Missing either opinions or advantages and disadvantages of the collaborative project.	Did not include	

Total Points = 80