

Earth Professionals Unit Presentation

Created by Gregory Smith: CTE Teacher at WBSaul High School of Agricultural Sciences

Learning Objective

Students will be able to research and present to their classmates a prominent figure/professional/advocate within the earth sciences, as well as create a career pathway for a fictional recent high school graduate, to become familiar with the variety of career paths, educational opportunities directly addressing environmental topics and issues.

Outcomes

The class will conduct online research, using credible sources, on a variety of career paths within the earth sciences. Each student will be randomly assigned an environmental professional and the name of their earth-related career pathway (i.e., biologist, climatologist, geographer). The student will then create a visual and oral presentation about their assigned professional and the academic/career path a high school graduate might take to have a career in the same field as their assigned professional.

No two students should have the same Earth professional. By the end of all student presentations, the class would have been exposed to a diverse group of earth professionals who are deemed accomplished, notable, and significant contributors to the advancement of the environmental sciences and career opportunities.

Assignment Evaluations

Professionals in Environmental Science presentation will be graded in three parts, using the rubrics below to evaluate students' ability to fulfill their Online Research, Google Slideshow, and Career Presentation requirements. Each category within the presentation criteria will be graded based on the 5-point scale shown. The score earned for each criterion, divided by the total possible points for that criterion, will determine your grade for that part of your presentation.

5 - OUTSTANDING 4 - GOOD JOB 3/2 - INSUFFICIENT 1 - UNACCEPTABLE 0 - MISSING

ASSIGNMENT 1: *Online Research* 20-point value

The student will identify and evaluate 4 credible online sources to reference throughout the presentation. Two sources represent the assigned professional, and the other two provide information about the related earth career.

ASSIGNMENT 2: *Slideshow* 28-point value

The student will create an engaging slideshow that will assist with engaging the class while presenting about their assigned professional and related Earth career.

ASSIGNMENT 3: *Presentation* 60-point value

The student will present to their classmates what they learned from their research using the slideshow as a visual support and making verbal references to all 4 sources used.

Materials Needed:

For Classroom: Projector or SMART board and computer with internet access. Each student will need a Computer, and the Google Platform (*Classroom, Slides, Form, and Docs*).

For Virtual Learning: Google Meet or Zoom. Each student will need a Computer, and the Google Platform (*Classroom, Slides, Form, and Docs*).

Earth-Career Professionals

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| <ul style="list-style-type: none">☐ Booker T. Whatley (agronomist)☐ Emmett Chappelle (biologist)☐ Rachel Carson (marine biologist)☐ Margaret Collins (zoologist)☐ Jewel Plummer Cobb (cell biologist, toxicologist)☐ Ynes Mexia (botanist)☐ Gladys West (mathematics, GPS)☐ Zelma Maine-Jackson (hydrogeologist)☐ Dian Fossey (zoologist, conservationist)☐ Sylvia Earle (marine biologist)☐ Mario Molina (chemistry, environmental scientist)☐ Paul J. Crutzen (atmospheric chemist, climatologist)☐ Lisa P. Jackson (chemical engineer)☐ Selman Abraham Waksman (biochemist, geochemist)☐ Evan Forde (oceanographer)☐ June Bacon-Bercey (meteorologist)☐ Warren Washington (climatologist)☐ Margaret Stoughton Abell (forester)☐ Ruth S. DeFries (geographer) | <ul style="list-style-type: none">☐ Ellen Swallow Richards (geotechnical safety engineer, environmental chemist)☐ Nicole Hernandez Hammer (climate scientist)☐ Thomas Lovejoy (ecologist)☐ Chico Mendes (environmentalist)☐ Neil Degrasse Tyson (astronomer planetary scientist)☐ Derrick Pitts (astronomer)☐ Wangari Maathai (forester)☐ Marguerite Thomas Williams (geologist)☐ Elise Golan (agronomist)☐ Dr. Vandana Shiva (environmental activist, ecologist)☐ Samuel Milton Nabrit (marine biologist)☐ Roger Arliner Young (zoology)☐ Nicole Hernandez Hammer (climatologist)☐ Anna Kay Behrensmeyer (paleontologists)☐ Lucy Jones (seismologist)☐ Marjory Stoneman Douglas (author, conversationalist)☐ Lisa Colosi-Peterson (environmental engineer, hydrologist) |
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Part 1: Online Research

You are required to conduct online research about your assigned professional and the career they represent in order to create a career pathway for a fictional high school student. Students will need to document and make references during their presentation to a minimum of 4 online sources that provide sufficient information about their professional and career pathways. All sources must meet Penn State Libraries' criteria for evaluating information.

Activity #1: Explore

WHAT IS A CAREER PATHWAY?

A career pathway is a series of steps someone takes to establish a career in a given occupation, field, or profession. In most instances, the series of steps includes some form of professional training, certification, degree(s), internships/apprenticeships, entry-level jobs, and years of experience in order to achieve the success of your assigned professional.

Visit, read, and watch all videos on the **Penn State Libraries' Evaluating Information** webpage:

<https://libraries.psu.edu/services/research-help/evaluating-information>

Students may refer to Penn State's *Evaluating Information Rubric* for assistance in determining if their source is credible. <https://libraries.psu.edu/research/how/evaluating-information-rubric>

For this assignment, you may use articles, websites, and videos so long as they come from credible sources.

What to look for when conducting online research for the information for your presentation.

- Currency: When was the website last updated? Must be within the past 10 years.
- Authority: Who is the author or creator?
- Validity/Accuracy: Is the information accurate or valid?
- Audience: Who was the website created for? Is the site appropriate for your needs?
- Point of view (bias): What is the website's point of view and does it present bias or an agenda?
- Purpose/context: How closely does the website relate to the purpose for which you need that information?

Optional Video: Using Wikipedia: Crash Course Navigating Digital Information #5

<https://www.youtube.com/watch?v=ih4dY9i9JKE>

Activity #2: Research

Part 1 - Earth Professional Finding at least 2 sources of information about your assigned professional. Below represents the type of information your research should reveal about your profession.

- Full name, nicknames, date of birth/death (if applicable), place of birth, as well as ethnicity, race, and/or family origin of your assigned professional.
- Background information and any significant life events that motivated their passion for the environment and the direction of their career path. Include personal obstacles and discrimination associated with their culture, race, gender, and how that might have or did contribute to or limit their success. Information about schools attended, training, degree and certifications, professional opportunities, internships/apprenticeships, and career experiences is a must.
- Identify their contribution to and success in the environmental sciences. Make connections to all institutions, agencies, organizations, events, awards and acknowledgments, and other prominent figures associated with your Earth professional. Link, when applicable, how this person contributed to civil, labor, women's, or animal rights.
- Find at least 3 facts about this person not related to their professional background, which humanize them and shows their range of interests, hobbies, and talents.

Part 2 - Career Pathway Find at least 2 sources that provide relevant information about the earth-related career pathway associated with your assigned professional. In the section to follow, you will be creating a career pathway for an avatar who is a current senior high school student who will become a professional, much like your assigned professional. There are many ways to establish a career, and no one way is better than the other. For this section of the assignment, look for sources to provide information about programs, colleges, or vocational schools, or specialized job training that prepares you for a career on your assigned pathway. Also, look for sources that provide information on types of jobs, income, expected duties, and responsibilities. Below is the information you will need to find in your online research to create the aviator you'll use in your presentation.

- Information on the type of requirements (i.e. education, training, experiences, skills, degrees, and/or certification) a high school student will need to establish a career.
- What schools and programs are available in Pennsylvania to obtain the above-mentioned requirements? Identify school and training programs and include how long it will take to complete them as well as the cost to attend. What will be expected to be learned and obtained when finished?
- What type of entry-level job can be expected? What is the estimated entry-level income, duties, and responsibilities of that job? What organizations, agencies, or businesses hire for positions at the entry level?
- How can someone on this career path advance in their career? What does growth in the career pathway look like?

- What type of job is considered at the top of this career pathway? What is the estimated income, job title, and with what organization, agency, or business hired for positions at that level?

Assignment #1: Source Material

Once you have identified the credible sources you will use to obtain information for your presentation, use the provided Form to verify the credibility of each of your sources. Review the "Online Research Rubric" for details on how you will be evaluated. Provide up to two more resources if interested in receiving 4 bonus points

(TEACHER Recommendation: Input below into Google Form to be distributed to students via Google Classroom. Make sure to set the Form so students can submit more than one form to represent each of the required and extra credit sources. Also, set the Form so that students can access their responses later if needed)

Student's Last Name:

Student's First Name:

Name of Assigned Professional:

Career Pathway:

Name of Article :

Title of Website Host/Publisher/Sponsor:

Website URL (cut and paste the link of the webpage being used)

What is the website or article currency? Provide date published, last updated, or most recent copyright.

Who is the author or creator? Explain what makes them credible.

What makes this website or article valid? How do you know the information presented is accurate?

Who is the intended audience for the website/article? Is this article appropriate for High School students? Explain.

Is the website or article's point of view written with biases? Are there opinions or an agenda that might influence the presented facts in one way or another? Explain.

How does the purpose and content of this website or article meet your needs for this assignment? Briefly highlight information from this source that is most relevant to your presentation.

Online Research Rubric

Score ____/5

5 - OUTSTANDING 4 - GOOD JOB 3/2 - INSUFFICIENT 1 - UNACCEPTABLE 0 - MISSING

_____ Student completed, submitted on time, and used the correction online applications to turn in Assignment #1.

_____ Students submitted the name of the correct professional and associated career path assigned to them.

_____ Student fulfilled the requirement of having at least 4 sources. (2 sources referencing assigned professional and 2 sources with information about related career pathway)

_____ All submissions meet the Penn State credible source requirement by successfully demonstrating the currency, authority, validity/accuracy, audience, point of view, and purpose/context of the sources being used for presentation.

_____ Sources come from a variety of different credible formats (article, news, documentary, website, university) that provide different information supporting

Extra credit: Students who document and reference in the presentation two additional sources that meet the criteria will earn 1 point for each in the final presentation grade.

PART 2: Presentation

Now that you have identified at least 4 credible sources about your assigned professional and career pathway, it is time to organize content for your presentation. Each student will produce a Google Slideshow (Assignment #2) that highlights the relevant information from their researched sources (Assignment #1) that meets the required presentation content in Activity #3. Finally, each student will have the opportunity to present to the class (Assignment #3) their research with the support of their slideshow.

Activity #3: Review Required Presentation Content

Using the information from the articles submitted in Assignment #1, find all the information you will need to make a slideshow (Assignment #2) and a class presentation (Assignment #2).

- About Professional:
 - Full name of the assigned professional, date of birth/death (if applicable), place of birth, as well as ethnicity, race, and/or family origin.
 - Using the resources from Assignment #1, provide background information about significant life events that motivated their passion for the environment. Include any personal obstacles and discrimination associated with their culture, race, and/or gender, and how that might have or did contribute to or limit their success. Link, when applicable, how this person contributed to civil, labor, women's, or animal rights.
 - Clearly define what area of the environmental/earth sciences best represents your professional. Identify and detail the career pathway that contributed to their success in the environmental sciences.
 - Provide at least 3 facts about this person not related to their professional background, which humanizes them and shows their range of interests.
 - What is your opinion about the accomplishments of your assigned professional?
- About Career Pathway
 - Imagine yourself following in the career of your Earth professional. Create a story narrative using the slides that show the journey you would take to follow the career path represented by your Earth professional.
 - Using the resources from Assignment #2. Begin your career pathway with your first step after high school. What college, trade school, or work program will you attend? What will you be majoring in/learning about/experiencing while there, and for how long? How much does it cost? What type of degree(s) or certification(s) will you receive when you have completed your education or programming?
 - After you complete your first step, what's next? Describe your entry-level or first job in that field. Who are you working for and where? How much do they make?
 - Share some of the steps you will take to advance from this entry-level job to a more established career in the field, 30 years after you have graduated from high school. What is your job title, where do you work, what are your job responsibilities, and the types of things do you do that benefit the environment?
 - What will be your greatest accomplishment as an Earth Professional?
- About You

- Conclude your presentation with a reflection on what you learned from this assignment that might have changed your perspective about the environment.

Assignment #2: Slideshow Presentation

All class presentations must be accompanied by a slideshow. The slideshow should be formatted to include an introduction slide (title of presentation, student name, class information, date), followed by multiple slides that use pictures/images/visuals with minimal text/writing throughout the presentation, and a final Source Cited slide dedicated to listing the name, title, and author/publisher of all articles, documents, videos, and websites submitted in Assignment #1. Review the "Slide Presentation Rubric" for details on how you will be evaluated. Document up to two more resources in Sources Cited to obtain 2 extra credit points.

NOTE: Cluttered or empty slides because of too few or many images, excessive written text using small font sizes, use of type or background colors (i.e., bright yellow and pink), or background images making the slide difficult to read and/or view may be considered and graded as unacceptable.

Slide Presentation Rubric

Score ____/28 + ____ extra credit (max 2)

4 - OUTSTANDING 3 - GOOD JOB 2 - INSUFFICIENT 1 - UNACCEPTABLE 0 - MISSING

____ Student completed, submitted on time, and used the correction online applications to turn in Assignment #2.

____ Introduction slide contains required information (title of the presentation, student name, class information, date) and looks visually appropriate to present in class.

____ Student used multiple slides with images and minimal text to provide visual support and reference to the researched and verbally presented information about their assigned professional, as detailed in the About Professional section of Assignment #2 directions.

____ Student used multiple slides with images and minimal text to illustrate their aviator's pathway from high school to a successful career in their assigned earth-based career path, as detailed in the About Aviator section of Assignment #2 directions.

____ Student created a reflection slide that represents their personal opinion and what they learned from their research, as detailed in Assignment #2 directions.

____ At least the four required sources submitted in Assignment #1 is presented on the Sources Cited slide at the end of your presentation. Work cited slide must include the name, title, and author/publisher/web page owner of all sources used, including extra credit sources.

____ The overall slideshow presentation was well executed and demonstrated that the student took their time to successfully organize information, use creativity, and pay attention to all of Assignment Two's requirement details.

____ **Extra Credit:** Students submitted two additional sources in Assignment #1 and documented them in Assignment #2's Source Cited slide for 1 extra credit point for each additional source.

Assignment #3: Class Presentation

All students will have the opportunity to present to their classmates their assigned professional, avatar pathway, and personal reflection. The slideshow produced for Assignment #2 must be included as part of your verbal presentation. Student must assure that every source submitted in Assignment #1 is referenced at least once during their presentation to verify to listeners that their information comes from credible sources. Students may use support material to help them remember their presentation but will be marked unacceptable if the entire presentation is read directly from a paper, cue cards, or mobile device. Review the "Class Presentation Rubric" for details on how your performance will be evaluated during your presentation. Successfully up to two more resources if interested in receiving 4 bonus points

Class Presentation Score ____/60 + ____ extra credit (max 2)

4 - OUTSTANDING 3 - GOOD JOB 2 - INSUFFICIENT 1 - UNACCEPTABLE 0 - MISSING

____ Students demonstrated they are prepared and ready to present Assignment #3 on time in an informative and effective manner.

____ Student provided background information about their assigned professional that is comprehensive and accurately reflects their origin, background, education, motivation into their earth-based career pathway, and any significant life event, personal obstacles, or discrimination that contributed to or limited their success.

____ Student showcased their assigned professional's accomplishments, contributions, and success in their career pathway by adequately representing and including relevant awards, recognitions, accolades, and associations with noteworthy institutions, agencies, organizations, events, and other prominent figures.

____ Student reflected on their project research sharing their opinion and what they learned from this experience.

____ Student delivered a few noncareer noteworthy facts about their assigned professional that humanizes them and shows their range of interests.

____ Student introduced their Aviator by name and developed a story on how they became interested in the assigned career pathway as a high school student.

____ Student delivered a well-researched and throughout career pathway for their Aviator that uses real Pennsylvania examples of universities, institutions, programs, businesses, and organizations to map their educational/training experiences, first entry-level position into a career that demonstrates a similar level of success as their assigned professional.

____ Student verbally referenced all sources submitted in Assignment #1 and listed on Assignment #2 Source Cited slide at least once during the appropriate section. Student must at minimum state the title of the article, webpage, or video as well as the website or periodical source name and/or author of or agency presenting the information they used.

____ **Extra Credit:** Students who included up to 2 additional sources in Assignment #1, as part of Assignment #2 Source Cited slide, and verbally referenced during Assignment #3 will receive 1 extra credit point for each additional source.

If In-Class Presentation

_____ The overall presentation was informative, engaging, and interactive.

_____ Student made eye contact with the audience while speaking clearly and loudly enough to be heard from the back of the classroom.

_____ Student successfully used slideshow, cue cards, and/or notes to deliver information, by not depending exclusively on them.

If Virtual-Class Presentation

_____ Student have positioned themselves in a well-lit, quiet location in front of a school-appropriate background where their video image and sound is clear.

_____ Student successfully narrated over the slideshow, delivering information without depending exclusively on reading off of the slide. thus demonstrating a formulary with the information they researched.

_____ The overall presentation was informative and engaging enough to maintain listeners' attention and interest.
