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Practice for Explore Performance Task



Unit 3. Information and the Internet

Revision Date: Jun 27, 2019

Duration: 3 50-minute sessions

Lesson Summary

Summary

This lesson provides the students with an opportunity to practice the AP CSP Explore Performance Task with a given set of tasks from which they may choose. Students will use a rubric to perform self-assessment of work generated for the Explore Performance Task.

Outcomes

- Students will practice the AP CSP Explore Performance Task.
- Students will use a rubric to grade the paper created in the previous class to evaluate their own work and make modifications where necessary.

Overview

Session 1

1. Getting Started (5 min)
2. Introduction of Content (10 min) Introduce the practice Explore Task and review the rubric.
3. Independent Activity (30 min) Write responses to questions posed on "Practice Explore Task Response Document" research and summarize results with a focus on using few words to convey a significant message.
4. Wrap Up (5 min)

Session 2

1. Getting Started (5 min)
2. Independent Activity (40 min) Work on artifacts (original digital artifact screencast or a knowledge map diagram) to express the effects of your chosen innovation.
3. Wrap Up (5 min)

Session 3

1. Getting Started (5 min)

2. Independent Activity (40 min) Collect written responses, continue to work on artifacts. Share exemplary features with the class as time allows.
3. Wrap Up (5 min)

Source: The lesson models the College Board AP CSP Explore Performance Task.

Learning Objectives

Common Core ELA:

- RST 12.1 - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
- RST 12.6 - Analyze the author's purpose in providing an explanation, describing a procedure
- WHST 12.1 - Write arguments on discipline specific content
- WHST 12.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes
- WHST 12.9 - Draw evidence from informational texts to support analysis, reflection, and research

NGSS Practices:

- 7. Engaging in argument from evidence

NGSS Content:

- HS-ETS1-3. Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

Key Concepts

The students will be able to use reliable research findings to generate a computational artifact and respond to questions on that innovation.

Essential Questions

- How can a creative development process affect the creation of computational artifacts?
- How can computing and the use of computational tools foster creative expression?
- How are vastly different kinds of data, physical phenomena, and mathematical concepts represented on a computer?
- How can computation be employed to help people process data and information to gain insight and knowledge?
- What considerations and trade-offs arise in the computational manipulation of data?
- What aspects of the Internet's design and development have helped it scale and flourish?
- How does computing enhance human communication, interaction, and cognition?

- How does computing enable innovation?
- What are some potential beneficial and harmful effects of computing?
- How do economic, social, and cultural contexts influence innovation and the use of computing?

Teacher Resources

Student computer usage for this lesson is: **required**

In the Lesson Resources folder:

- "Explore_Performance_Task_Rubric_Nov2015" : AP test rubric for the overall practice performance
- "Practice Explore Task Job Completion Check List" : check list for task jobs
- "Practice Explore Task Response Document November2015" : response document
- "CSMattersWritingRubric.docx" : detailed formative assessment writing-specific rubric for the practice Explore performance task

Lesson Plan

Session 1:

Getting Started (5 min)

- Previous evening's homework was to complete the Practice Explore Performance Task worksheet.
- Group students by topic in groups of 3 – 4. Have students share findings with each other and report any missing items. Teacher will need to circulate to assist where needed.

Introduction of Content (10 min)

Instruct the students that they are to use their findings to generate a computational artifact and a one-page paper on an innovation.

Directions for artifact:

The artifact is an original digital artifact screencast or knowledge map diagram that you create to express the effects of your chosen innovation.

Directions for the Paper:

Students are to generate a written document in which they respond directly to the following prompts. Their document should be a one-page paper that may include illustrations.

- Describe the area of our lives (social, economic, or cultural) that has been most impacted by the innovation, and discuss the significance of the innovation to this area, using references to support your argument.

- Describe the population that is affected by the innovation and explain why that population is significant.
- Describe the connection between your artifact and the innovation you explored.
- Identify and describe how information sharing has affected this innovation.
- Discuss the extent to which this innovation is dependent on the Internet.
- Describe any security concerns and explain how they relate to the innovation.
- Describe the beneficial as well as any harmful effects of the innovation you explored.

Independent Activity (30 min)

Writing responses to questions posed on "Practice Explore Task Response Document" and creating artifact.

Remind students that brevity is important for the performance tasks; it is a talent to be able to get a message across with real content succinctly.

I have made this letter longer than usual, only because I have not had time to make it shorter. ~Blaise Pascal (1623-1662).

Wrap Up (5 min)

Have students complete the "Practice Explore Task Job Completion" form, indicating where they are in the process of the Practice Artifact.

Homework

Complete any additional research needed to complete the document (if needed).

Session 2:

Getting Started (5 min)

The previous evening's homework was to complete the paper that students were working on in the previous class. Pass out the rubric and have students go through their paper to verify that they have all points covered. Point out that most of the points awarded are based on the report (75% of the total score) and the artifact represents 25% of the score. Teacher will need to circulate to assist where needed.

Independent Activity (40 min)

- Students are to make any modifications necessary on their paper and work on the artifact. The entire project will be collected next class.
- The artifact is an original digital artifact screencast or a knowledge map diagram that you create to express the effects of your chosen innovation.

Wrap Up (5 min)

Have students complete a Job Progress form indicating where they are in the process of the Practice Artifact.

Homework

Complete the paper using the rubric as a guide. Complete the plan for the artifact; you will have one more class period to work on the artifact before the project is due.

Session 3:

Getting Started (5 min)

The previous evening's homework was to complete responses to "Practice Explore Task Response Document" modifications as indicated using the rubric that students received in the previous class. Using the artifact part of the rubric, have students go through their plans for the artifact to verify that they have all points covered. Point out that most of the points awarded are based on the report (75% of the total score) and the artifact represents 25% of the score. Teacher will need to circulate to assist where needed.

Independent Activity (40 min)

The responses to "Practice Explore Task Response Document" for the Practice Explore Performance Task should be complete. Students should be focused on the artifact. The entire project will be collected next class.

Wrap Up (5 min)

Have students complete a Job Progress form indicating where they are in the process of the Practice Artifact.

Homework

Complete artifact using the rubric as a guide. The Practice Explore Performance Task is due at the start of the next period.

Options for Differentiated Instruction

SPED/LLD: need to be frequently monitored and assisted as needed.

Teachers may choose to spread this activity out into multiple class sessions over a longer period of time, to give students some more time to work on the paper and artifacts at home (especially if the class meets every day, since "overnight homework" is often difficult for students to complete effectively when they are involved in other after-school activities and have assignments for other classes).

Evidence of Learning

Formative Assessment

Practice Explore Performance Task -- provide feedback, using College Board's rubric (Explore_Performance_Task_Rubric_Nov2015.pdf and the CSM detailed Explore Task writing rubric (CSMattersWritingRubric.docx and CSMattersWritingRubric.pdf) -- both can be found in the lesson folder

Summative Assessment

Explore Performance Task



(<http://www.umbc.edu/>)



(<http://www.umd.edu/>)



(<http://www.nsf.gov/>)

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