

Archaeology Lesson: Artifact for 21st Century Education

Summary of the Project:

Students working collaboratively on a mini-archaeology dig to locate and identify artifacts, create hypotheses about the objects and what information they tell us about a society, and research past artifacts to determine if their hypotheses were correct. Students had to use collaboration when working on the dig, when creating their hypotheses, when measuring the artifacts, and when forming conclusions. Additionally, students had to use critical thinking when formulating theories, researching and reviewing data online, assessing their ideas, analyzing and comparing their hypotheses with archaeology studies online, and when justifying their hypotheses (and proving them) with the artifact data they discovered online, and forming conclusions.

Outcomes and Indicators:

Social Studies 9:

DR 9.1 (a) Examine the challenges involved in obtaining information about societies of the past. **DR 9.1 (b)** Describe the role of archaeology in obtaining information about societies of the past, (c) explain various technologies used in archaeology (d) present results obtained and techniques used in archaeology, (e) investigate the role of literature, visual arts, music, photographs, and other artifacts in obtaining information about past societies.

ELA 9:

CC 9.2 (a) Create and present an individual researched inquiry project related to a topic, theme, or issue studied in English language arts and **CC 9.3 (a)** Select and use appropriate strategies to communicate meaning before (e.g., considering and valuing own observations, experiences, ideas, and opinions as sources for ideas), during (e.g., shaping and reshaping drafts with audience and purpose in mind), and after (e.g., ensuring that all parts support the main idea or thesis) speaking, writing, and other representing activities.

ELA 8:

CC 8.2 Create and present a group inquiry project related to a topic, theme, or issue studied in English language arts. and **CC 8.3** select and use the appropriate strategies to communicate meaning before (e.g., plan, organize, and sequence ideas to fit purpose, point of view, and format), during (e.g., use and maintain appropriate point of view for audience and purpose), and after (e.g., revise final drafts and presentations to ensure that the format and patterns within that format contribute to the effectiveness of the composition) speaking, writing, and other representing activities.

Critical Thinking Outcomes:

Use critical thinking to compare and contrast, review others' ideas, assess, raise vital questions, formulate theories, communicate ideas to others, analyze their ideas, explain their thinking to others, and justify their ideas using facts.

Use critical thinking to weigh evidence, use problem solving, and form individual conclusions.
Apply archaeology concepts to real-world problems (i.e. problems encountered on the dig).

Collaboration Outcomes:

Groups are able to come to mutual agreement on the participation and sharing of work.
Groups assign a group leader to oversee goals, expectations, effort, and meetings.
Groups set goals, assign tasks, and set meetings to ensure goals have been met.
Students connect through iPads (facetime, private messaging, or email) to share progress and work samples.

Materials:

- artifacts for an archaeology dig (I recommend at least four different types of samples, i.e. potsherds, coins, jewellery, bones, tool fragments)
- (create) an archaeology dig (horizontal layers, make sure to take photos to document where samples are located before adding soil layers)
- archaeology tools for digging
- archaeology tools for cleaning and analysis (i.e. measurement)
- safety equipment (googles and gloves)
- cameras and tools for documenting (my students used iPads but paper and pencils would work)
- tables (for setting up artifacts for analysis)

Procedure:

1. Class discussion and researching of archaeology process (review the importance of proper procedure and order of steps taken) (KWL chart or QAR).
2. Divide students into groups and have them assign a leader (establish group guidelines and expectations for the project). Set a goal for the class, assign group members a role, and establish the procedure for the dig.
3. Venture outside and assign each group a “dig”
4. Circulate the dig, asking questions about their findings and their process.
5. At the end of the class, have students write down the answers to the four questions (What did you enjoy about the dig? What challenges did your group encounter? What would you do differently next time? What did your group do well?)
6. Next class (beginning): have student pairs answer the following questions. Why was a Roman coin lost in the process? What important steps were skipped in this dig that real archaeologists must do? Why were we

able to skip this critical step? How would you maximize efficiency next time? Can you justify why we should learn about Ancient civilizations? What skills did you use during this dig?

7. Go over the expectations for the worksheet (rubric) and then allow students to work on it while analyzing the artifacts (see attached Worksheet for Thursday, October 10). Students need to create valid predictions for their artifacts, then research similar artifacts on the internet to substantiate their hypotheses regarding the artifact origins, uses, and setting.
8. After completing the worksheet, students who finish early can work on cleaning the artifacts and make predictions about what future archaeologists would say about our society based upon the artifacts we leave behind in landfills.
9. Have a class discussion on their predictions and subsequent conclusions.
10. After concluding the work on the artifacts, students can answer these questions: what did you learn, what did you enjoy, what would you do differently?

Assessment:

Pre-Assessment:

- Class discussion and QAR or KWL chart

Formative Assessment:

- Circulate asking questions
- Observe student reporter drawings/observations
- Answers to step 5 questions
- Answers to step 6 questions
- Answers to step 7 worksheet
- Listen to student responses during discussions

Summative Assessment:

- Step 7 worksheet (completed on iPad) with drawings and photos
- Step 10 discussion

Differentiated Strategies:

- Hands-on activities
- Different roles in each group (leader, scribe, digger, sweeper, etc.)
- Different ways of demonstrating outcomes (photos, drawings, charts, writing)
- Class discussions

- Teamwork (students with different skills can provide unique resources and perspectives for each group)

Resources:

When creating my rubric, I consulted a few rubrics online in order to find the best criteria for critical thinking and collaboration.

Websites that I used for key language when framing criteria for 21st century competencies:

<https://www.temple.edu/tlc/resources/handouts/grading/Holistic%20Critical%20Thinking%20Scoring%20Rubric.v2.pdf>

<http://course1.winona.edu/shatfield/air/grouprubric.pdf>

<http://academic.pgcc.edu/~wpeirce/MCCCTR/Designingrubricsassessingthinking.html>

Social Studies: Archaeology Questions

Wednesday, October 9

Please answer these questions before moving on to your PBLs. Some of these questions are providing you with an opportunity to earn a 5 on your rubric, so the more detail and explanation you provide the better 😊

1. While on the dig, explain what may have caused the last Roman coin to be lost in the digging process.
2. What important step did we skip in the beginning of our dig that archaeologists must do in order to keep records of where artifacts are found? Why did we skip this step? What allowed us to skip this step when archaeologists on a real dig cannot?
3. How would you recommend maximizing efficiency next time (what could you do to make the dig go faster and better)?
4. How was this lesson (the outside dig) valuable? Can you justify why we should learn about Ancient Cultures and archaeology in school? What skills do you learn or practice when you work on a dig with a team? (list all the skills you can think of that you demonstrated)

Social Studies: Archaeology Questions

Thursday, Oct. 10

1. Take a photo of each artifact that was located in the small artifacts dig (the site with the Ancient Roman coins). Then, in Pages, insert the photo and answer the following questions about each artifact:
 - What materials do you think it is made out of? Why?
 - What do you think it is?
 - Give its size and weight (measure with a scale and a ruler for length and width)
 - What do you think it was used for? Consult the internet for images of the object you think it is, and confirm if it is or isn't what you thought
 - What does this artifact tell you about the people from that time period? (make predictions about the people, their daily life, and their culture)
 - Why do you think it was included in the dig?
2. Compare the potsherds and Roman coins, WHY can you conclude they came from different time periods?
3. Why might an archaeology dig have artifacts from different time periods?
4. Do a sketch of one of the two sites, with your estimate for the position and size of each artifact you found (use shading), include a compass (showing north, south, east, and west) and a scale (so we can tell how large/small the artifacts are).

