

## **How I Use the Website: Archaeology Science Project**

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Help your students understand the Scientific Method by conducting a mock science fair experiment using videos about archaeology. Science Fair projects typically follow a specific format, based on the Scientific Method. Students must move through the eight steps of the method, which are listed below.

Decide in advance how you want students to present their projects; a written, oral or multimedia report, a poster for school or a display board. This is a mock experiment so adjustments have been made but this project still follows the Scientific Method steps.

- ✓ Question - A science fair project starts with a question that the student would like answered. This might be based on an observation made or a topic of interest. The question needs to be about something measurable and often start with words such as what, when, where, how or why.
- ✓ Background Research - Use resources such as books and the Internet to perform background research on the question to help prepare for the next step in the Scientific Method.
- ✓ Hypothesis - Using the background research and current knowledge, make an educated guess that answers the question. The hypothesis should be a simple statement that expresses what you think will happen.
- ✓ Experiment - Create a step-by-step procedure and conduct an experiment that tests the hypothesis. The experiment should be a fair test that changes only one variable at a time while keeping everything else the same. Repeat the experiment a number of times to give a good sample of results.
- ✓ Data - Collect data and record the progress of the experiment. Document results with detailed measurements, descriptions and observations in the form of notes, journal entries, photos, charts and graphs.
- ✓ Observations - Describe observations made during your experiment. Include information that could have affected results such as errors, environmental factors and unexpected surprises.
- ✓ Conclusions - Analyze the data collected and summarize the results in written form. Use this analysis to answer the original question, do the results of the experiment support or oppose the hypothesis?
- ✓ Communication - Present all findings in an appropriate form, whether it's a written, oral or multimedia report, a poster for school or a display board for a science fair competition.

Question - We will provide the question for them, this time. "How does an archaeologist conduct a dig?"

Background Research - Have students search Archaeology on Educate.Today and note the titles, short description and links for 22 videos that are found. They should view the videos that they feel will help answer the question.

Hypothesis - Students should develop a hypothesis based on their research. An example is “If an archaeologist uses professionals in the field rather than students, more artifacts will be discovered.”

Experiment - Since they are not actually conducting an experiment, they should list methods and steps archaeologists use to do a dig, noting why the archaeologist chose that procedure.

Data – Since this is a mock experiment, data will be the information they gleaned while viewing the videos.

Observation - They should note what was done on the dig site, any unusual occurrences, how many people access the site, tools used, etc.

Conclusion - The conclusion should address the question and hypothesis and be fact based. It should note any problems that were encountered, off an outline for future study and suggest real world applications. Using the above hypothesis, part of the conclusion could be, “Professionals did not find more artifacts than students did based on what was presented in the videos.”

Communication - Have them conclude the project by completing the assigned type of report. All above steps and information should be included in the report.

#### Assessment

Assess the work with 1 being the lowest score possible and 5 being the highest.

Background Research is comprehensive.

1	2	3	4	5
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Hypothesis is clearly stated, with reasoning included.

1	2	3	4	5
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Experiment is outlined well. Remember this is mock experiment so judge accordingly.

1	2	3	4	5
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Data was recorded as it happened and is shown in graph or chart form.

1	2	3	4	5
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Observation are recorded and analyzed.

1	2	3	4	5
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Conclusion addresses the question and hypothesis and ideas for future study is suggested.

1	2	3	4	5
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Communication is easily followed; all steps are addressed and are attractively provided.

1	2	3	4	5
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