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The following lessons were created by **Teresa Gable**, a teacher participating in the National Endowment for the Humanities Summer Institute for Teachers entitled Touch the Past: Archaeology of the Upper Mississippi River Region.

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Scientific Method Exploration through Archaeology

Grade Level: 7th

Subjects: Life Science

Objectives:

To teach the students how to systematically solve a problem

To encourage students to integrate new vocabulary in a creative way

To help students recognize the difference between an observation (fact) and an inference (educated guess based on observations)

To use artifacts to make inferences

To show the students what you can infer about a person while studying their garbage

Standards:

NYS standards #1: Analysis, Inquiry and Design – Scientific Inquiry

Key Idea #1 The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process.

S1.2c To differentiate among observations, inferences, predictions and explanations.

S1.3 Represent, present and defend their proposed explanations of everyday observations so that they can be understood and assessed by others.

Duration: one week – five 40 minute lessons

Materials/Supplies:

various foreign coins
worksheets
story boards
various artifacts borrowed from the Historical Society
garbage bins with a different story to tell

Vocabulary:

Archaeology
Hypothesize
Systematic
Analysis
Artifacts
Observation
Inference
Context

Background: Archaeologists ask questions rooted in the social sciences and research those questions using the scientific method. This fusion of the social and the physical sciences means that archaeology is an excellent way to teach students to think holistically, to integrate information from different topics.

Setting the Stage: This lesson will help students use scientific inquiry and problem solving skills.

Procedure:

Lesson #1 Day #1

- Use the Intrigue of the Past book lessons
- Begin with the Observation and Inference lesson on pages 14-17
- Copy worksheets on pages 16-17
- Explain the difference between an observation (fact) and an inference (best guess based on fact)
- Review the questions on page 17 while looking at the scenario on page 17
- Distribute different story boards to groups of students
- Have the students come up with three good observations and three inferences from the story boards
- Present the comments to the whole class
- Discuss and correct as needed

Lesson #2 Day #2

- Copy page 18
- Go over the questions as a whole group
- Distribute several foreign coins to the students and have them come up with an observation and an inference for each coin
- Present ideas to the whole group

Lesson #3 Day #3

- Use Context lesson on pages 19-21
- Copy page 21
- Distribute several artifacts from a local Historical Society. Items that served a purpose but are not commonly used today. Ask the students to infer why this artifact was important and what was its job. Share the students' guesses as a whole class activity. For homework, have the students survey their bedroom and complete page 21.

Lesson #4 Day #4

- Use pages 34-38, It's in the Garbage lesson
- Copy pages 37 & 38
- Garbage can tell a story about a person's life
- Collect several teachers' garbage and anonymously place each basket in a different bin
- Ask each student to infer what each person was like, hobbies, lifestyle, food choices, etc.
- Have students complete pages 37 & 38 with their garbage bin
- Present findings to the class

Closure: Have the students share the guesses about the use of each artifact. Vote on the best guess. Show a picture of the proper use of each.

Evaluation: Day #5 Quiz on the scientific method including vocabulary

Links/Extensions:

The day I was born activity- have the students research the highlights and events that occurred during the year of their birth. List the news that made headlines, movies, sporting events, fashion, famous people. This gives them a chance to study their brief history. Also they could make a timeline of important events in their life since they have been alive.

References:

Malone, Bobbie, Digging and Discovery: Wisconsin Archaeology, State Historical Society of Wisconsin, Office of School Services, Madison, WI 2000

Smith, Shelley, et. al, Intrigue of the Past: A Teacher's Activity Guide for Fourth through Seventh Grades, United States Department of Interior, Bureau of Land Management, 1996