

## FOR EDUCATORS: TEACHING WITH ARCHAEOLOGY

### ARCHAEOLOGY AND THE IOWA CORE CURRICULUM

Archaeology is an appealing and authentic way to address portions of many of the content areas of the Iowa CORE Curriculum: Science, Social Studies, History, Geography, Math, Language Arts, 21<sup>st</sup> Century Skills, and Citizenship and Character Education. By its very nature archaeology **grabs and holds children’s attention by offering opportunities to examine and handle interesting and unusual materials**. It is multi-disciplinary and multicultural. It appeals to children with a variety of learning styles and it is goal oriented, students ask questions and solve mysteries through scientific investigation. Finally, because the descendants of prehistoric Native Americans still live in our communities today, the study of ancient cultures encourages children to view history not as a series of isolated events in the past but, rather, as a dynamic, living continuum that plays out every day, with real-life consequences. The following is a brief summary of topics from the Iowa CORE that can be addressed using activities built around archaeology.

#### SCIENCE AS A HUMAN ACTIVITY

- Students see that science is used by archaeologists to answer questions about the past.

#### SCIENCE AS INQUIRY Concepts and Skills

- Students identify and generate questions that can be answered through scientific investigations.
- Students see how math, scientific methods, and scientific tools are used in practical research.
- Students use evidence to develop reasonable explanations.
- Students communicate scientific procedures and explanations.
- Students select and use appropriate tools and techniques to gather, analyze, and interpret data.
- Students incorporate mathematics in scientific inquiry.
- Students use evidence to develop descriptions, explanations, predictions, and models.
- Students think critically and logically to make relationships between evidence and explanations.
- Students recognize and analyze alternative explanations and predictions.
- Archaeology uses scientific instruments such as microscopes and remote sensing equipment as well as mathematics to gather and analyze data. Students see these analytical methods applied to practical research.
- Archaeologists share data with other hard sciences such as geology, soil science, geomorphology, climate, and human, animal and plant biology.

#### BEHAVIORAL SCIENCE Concepts and Skills

- Students understand the process of how humans develop, learn, adapt to the environment, and internalize their culture.
- Students understand the influence on individual and group behavior and group decision making.

#### SOCIAL STUDIES CONTENT AREAS

- Behavioral Sciences – Human studies through observational methods  
Concepts/Skills
  - Students understand that each culture has distinctive patterns of behavior.
  - Students understand that human behavior is studied using scientific methods.
  - Students understand that features of cultures change over time.
  - Students understand past, present, future.

- Students understand that people in different times and places view the world differently.
- Students understand that people are alike and different in many ways.
- Students see their relationship to their own and other cultures and their role as a citizen of various communities.
- Students gain an appreciation of other cultures and learn to relate to people who do things differently.
- Students understand multiple perspectives that derive from different cultural vantage points.
- Students are introduced to the fact that cultures are dynamic and ever changing.
- Students see the common characteristics of cultures and how cultures influence and change one another.

➤ Geography – Interaction between people and their environments

Concepts/Skills

- Students understand geography tools: maps, charts, graphs, aerial photographs, grid systems.
- Students understand spatial distribution patterns.
- Students understand the concept of region.
- Students understand cardinal directions, charts, graphs, grids.
- Students understand the concept of area.
- Students understand how environment shapes humans and humans shape their environment.
- Students understand why people choose to settle in different places.
- Students understand the relationships between soil, climate, plant and animal life and how they affect the distributions of ecosystems.
- Students understand technology and human mobility have changed various landscapes.
- Students understand people create places that reflect culture, human needs, and ideals as they design and build places.
- Students understand geographic relationships such as population density and distribution patterns.

➤ History – study and analysis of the past to provide context for the present and implications for the future

Concepts/Skills

- Students understand the concept of chronology.
- Students understand the development and change of ancient cultures.
- Students understand the ways groups and cultures addressed human needs in the past.
- Students understand cultural diversity.
- Students understand that arts, architecture, and other artifacts and traditions have contributed to the development and transmission of culture.
- Students understand the role of innovation on the development and interaction of societies.
- Students understand differences in life today compared to life in the past.

- Students understand in interpret data in timelines.
- When we seek to understand the cultural differences of people of the past, we learn to appreciate what people went through to shape our present.

#### Historical Themes

- American Indian History
- Historic Preservation
- Pioneer America
- Westward Expansion
- Ancient Cultures Worldwide

**LANGUAGE ARTS** - Students learn to read and interpret material presented in diverse formats and media, including visually and quantitatively, as well as in words and communicate information in a variety of formats.

#### Concepts/Skills

- Archaeology lessons and activities use nonfiction material and primary sources.
- Students are called on to interpret information from maps, diagrams and illustrations.
- Reading historical documents requires students to analyze texts to distinguish fact from fiction and evaluate ideas and attitudes current at the time of writing.
- Students use a variety of spoken, written, and visual language to communicate their understanding.
- Literacy - Key Ideas and Details
  - Students determine a central idea of a text and how it is conveyed through particular details; provide a summary of text distinct from personal opinions and judgments.
  - Students employ the full range of research-based comprehension strategies, including making connections, determining importance, questioning, visualizing, making inferences, summarizing, and monitoring for comprehension.
- Literacy - Production and Distribution of Writing
  - Students produce clear and coherent writing in which the development, organization, and the style are appropriate for the purpose, and audience.
- Literacy – Research to Build and Present Knowledge
  - Students conduct short research projects to answer questions, drawing on several resources and refocusing the inquiry when appropriate.
- Literacy - Comprehension and Collaboration
  - Students engage effectively in a range of collaborative discussions with diverse partners on topics, texts, and issues, building on others’ ideas and expressing their own clearly.
  - Students interpret information presented in diverse media and formats and explain how it contributes to a topic, text, or issue under study.

#### **MATH Concepts and Skills**

- Measurement and data
  - Students describe measurable attributes of objects.
  - Students directly compare objects.
  - Students estimate and measure lengths.
  - Students represent and interpret data with tables and graphs.

## **21<sup>st</sup> CENTURY SKILLS – Technology Applications**

- Archaeology lessons introduce students to a wide variety of technologies such as:
  - Computerized data bases
  - Computerized mapping technologies
  - Remote sensing technologies
  - Scanning electronic microscopes
  - Radiocarbon and other chemical dating technologies
- Project based activities such as those proposed in the guide book help students develop important 21<sup>st</sup> century skills such as
  - critical thinking
  - creativity and innovation
  - problem solving
  - self-direction
  - teamwork

because they must use these skills as they investigate new topics related to prehistoric technology, archaeological science, and unfamiliar cultures.

**CITIZENSHIP AND CHARACTER EDUCATION** - Archaeology introduces students to the need to preserve and protect our shared cultural heritage thus emphasizing respect, responsibility, caring and citizenship.