Discovering the Story: A City and Its Culture

WHAT IS CLAY?

A Science Lesson
for Grades 4-8

Mary Louise McLaughlin (1847-1939), The Cincinnati Pottery Club
(1879-1890), Frederick Dallas Hamilton Road Pottery (1865-1882),
United States (Cincinnati)
Ali Baba Vase, 1880
Gift of the Women's Art Museum Association, 1881.239

Maria Longworth Nichols Storer (The Rookwood Pottery Company)
Aladdin Vase, 1882
Gift of Mr. and Mrs. James J. Gardner, 2002.94

The lesson *What is Clay?* is based on

Aladdin Vase
by Maria Longworth Nichols Storer

and

Ali Baba Vase
by Mary Louise McLaughlin

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WHAT IS CLAY?

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Based on *Aladdin Vase* by Maria Longworth Nichols Storer
and *Ali Baba Vase* by Mary Louise McLaughlin

Concept

The teacher will guide students in an investigation on the origin of clay. Students will understand that clay is a natural product of the weathering and decomposition of rocks comprising the minerals aluminum oxide, silica (sand), water and various impurities. Students will also understand the different types of clay and how each was created, as well as the features of each. Students will then research various cultures throughout the world, both historical and contemporary, that have created objects from clay for both artistic and utilitarian means.

The teacher will facilitate students in hands-on applications and study through pre-videoconferencing classroom activities, a videoconference visit with Cincinnati Art Museum Staff and post-videoconferencing lesson activities.

Objectives

- Students will learn and understand that clay was created through the slow change and erosion of the earth.
- Students will understand different types of clay–sedimentary and residual--and how each was created.
- Students will research various cultures throughout the world, both historical and contemporary, that have created objects from clay for both artistic and utilitarian means.

"Every child is an artist. The problem is how to remain an artist once he grows up."

Pablo Picasso

Teacher Preparation

Class Periods Required

1 – 3 (30-50 min.) class periods for Pre-Lesson Activities
1 50-min. class period for Videoconference
1 to 3 (30-50 min.) periods for Post-Lesson Activities
1 to 2 (30-50 min.) periods for Art Enrichment Activity (optional)

Background Information

Refer to Background Information for more on the *Ali Baba Vase* and the *Aladdin Vase* and the artists who created them. Background Information has been written for teachers to review before the lesson and then share with students.

Video

Share the ceramics video with your students prior to the videoconference. The video depicts archival film from Rookwood Pottery and an interview with a Museum curator on the two vases. This video is an excellent resource that will help to prepare students for the videoconference.

Video Duration – approx. six and a half minutes.

"He who works with his hands is a laborer. He who works with his hands and his head is a craftsman. He who works with his hands and his head and his heart is an artist."

St. Francis of Assisi

Pre- Videoconference

Vocabulary

Definitions can be found in the Glossary on the *Discovering the Story* Website.

Ceramic
Clay
Decomposition
Erosion
Residual
Sedimentary

Guiding Questions

- What is clay?
- How was clay formed?
- Where is clay found?
- Throughout history, how has clay been used?

Materials

- Print Reproductions of the Museum's *Ali Baba Vase* and *Aladdin Vase* (downloaded from www.discoveringthestory.com)
- Clay (preferably from the ground)
- Print reproductions of the following Museum objects

  Egypt

  Beaker

  Egypt--Predynastic period, Naqada I, 4500-3650 BC
  Earthenware with smoke-blackened decoration
  Museum purchase with funds provided by the Oliver Charitable Lead Trust Fund, 1999.61

  Lotus Cup

  Egypt--New Kingdom, Dynasty 18, 1550-1300 BC
  Mold-made faience
  Museum purchased with funds given in honor of Mr. and Mrs. Charles F. Williams by their children, 1948.87

Greece

Amphora: Herakles and Busiris
Greece (Attica)
Ca. 540 BC
Earthenware with slip-painted decoration in the black-figure technique
Museum purchase, 1959.1

Volute Krater
by the Niobid Painter--Greece (Attica)
Ca. 460-450 BC
Earthenware with slip-painted decoration in the red-figure technique
John J. Emery Endowment, 1987.4

China

Pair of Goblets
China (Shandong province)
Neolithic Longshan culture, ca. 2700-2100 BC
Burnished earthenware
Museum purchase with funds provided by the Oliver Charitable Lead Trust, 1996.449a,b

Guan Jar
China (Jiangxi province, Jingdezhen)
Ming dynasty, early 15th century
Porcelain painted in underglaze blue
John J. Emery Endowment and George M. ToeWater Endowment, 1987.147

Europe

William de Morgan (1839-1917)
England (Orange House, Chelsea or Merton Abbey, Surrey)
Dish, 1880-88
Gift of Alfred Traber Goshorn, 1888.759

Rörstrand Porslins Fabriker (Rörstrand Porcelain Manufactory) (1726-)
Sweden
Vase, 1904
Porcelain
Museum purchase with funds provided by Mr. and Mrs. William O. DeWitt Jr. 1997.33

PROCEDURE

Teacher will:

- Share with students the print reproductions of the Museum's *Ali Baba Vase* and *Aladdin Vase*. Ask students to describe what they see in the pictures. Students should be encouraged to use descriptive language in describing the vases. Record responses on the board.
- Ask students what material they think the vases were made of. Record responses on the board.
- Share with students that these vases were made of clay. Ask students if they know where clay comes from. Many students may or may not know that clay comes from the ground. Teachers may wish to show students rough clay (straight from the ground) to demonstrate this fact.
- Discuss with students the following facts about clay:
  Clay is:
  - Often confused with soil – this is understandable as garden soil is actually a combination of clay, sand and partially decayed vegetable matter.
  - Found between this soil (which is only a thin layer on top) and the rocky mantle. This area of subsoil can vary from inches to hundreds of feet in thickness. This subsoil can be composed of clay, sand or mineral deposits (either in pure or mixed form).
  - A natural product of the weathering and decomposition of rocks comprising the minerals aluminum oxide, silica (sand), water and various impurities.
  - Can be grouped into either the **Sedimentary** or the **Residual** category.
    - **Sedimentary Clays** are those that, by action of wind or running water, have been transported far from the site of the original rock/mineral.
    - **Residual Clays** are those that remained more or less at the site of the original rock formation.
  - Is appealing as an artistic and utilitarian material because of its plasticity and ease of molding. When placed in extreme heat, clay hardens and becomes usable for many purposes.
- Discuss with students that because clay is a durable and easily molded material, it has been used throughout history for both artistic and utilitarian use.
- Brainstorm with students the different cultures they think used or still use clay for artistic and utilitarian means. Record responses on the board. Share with students examples from the Museum collection of clay items from various cultures.
- Ask students to share thoughts on each piece and the similarities and differences between them. Ask students why they think these cultures made things from clay and other cultures didn't. Students should come to the conclusion that these cultures lived in an area that had large clay deposits. You may want to look at cultures that do not have large clay deposits and compare the artistic and utilitarian objects with those cultures that do have clay readily available.
- Tell students that they are going to participate in a videoconference with the Cincinnati Art Museum. They will learn more about these vases and their construction.

VIDEOCONFERENCE

OBJECTIVES

- Students will interact with the Cincinnati Art Museum staff through a sixty-minute videoconference.
- Students will learn about Cincinnati history from 1850 to 1900.
- Students will use Museum objects to reinforce activities completed in preparation for this videoconference.

CONCEPT

A videoconference conducted by the Cincinnati Art Museum staff extends student learning through emphasis on the viewing and discussion of art objects. During this videoconference with the Museum, students will explore Cincinnati art history and the methods and practices of many of the artists working in the city.

SCHEDULE

- **5 minutes** Introduction to CAM staff *(This is also buffer time in case of connection complications)*
- **10 minutes** Brief discussion of student pre-videoconferencing activities.
- **10 minutes** Museum staff will lead an interactive discussion with students on the history of Cincinnati from 1850-1900
- **20 minutes** Museum staff will lead students in an in-depth investigation of selected Museum objects.

  Objects Include
  - *Bedstead* by Benn Pitman, Adelaide Nourse Pitman, and Elizabeth Nourse
  - *Reception Dress* by Selina Cadwallader
  - *Aladdin Vase* by Maria Longworth Nichols Storer
  - *Ali Baba Vase* by M. Louise McLaughlin
  - *Vase and Dedication Medallion* by Tiffany & Co.
- **10 minutes** Questions and student sharing of art projects.
- **5 minutes** Closing *(This is also buffer time in case of connection complications)*

POST- VIDEOCONFERENCE

MATERIALS

- Print Reproductions of the Museum's *Ali Baba Vase* and *Aladdin Vase*

PROCEDURE

Teacher will:

- Review with students information obtained during the videoconference with the Museum. Students should now be more aware of the construction of these vases as well as the history of Cincinnati, an area rich in clay deposits.
- Share with students the print reproductions of the Museum's *Ali Baba Vase* and *Aladdin Vase*, again and reiterate that clay has been used throughout history to create utilitarian objects.
- Ensure that, before moving onto their research projects, students have a firm understanding of how clay is formed and why it is an appealing material for artistic and utilitarian use.
- Introduce students to their clay research project. Students will be assigned a culture/region of the world recognized for its clay creations. Students will research the culture, the geological make-up of its region (specifically for the clay types available) and its traditional clay creations. The teacher may choose the format for presentation:
  - Traditional written report
  - Informational poster report
  - Brochure report
  - Oral report with visuals

  The report could include the following:
  - Identification of culture or region
  - A world map highlighting your researched region
  - A description of the geological make-up of your region
  - A list of the clay types found in your region
  - A description of the characteristics/qualities of each clay type found
  - Information about what the artists had to do with the clay to create their clay works
  - A list of methods the artists used to build their clay works
  - Reproductions of traditional examples of their clay work
  - Age of the clay works
  - Information about what these clay works were used for
  - Any other interesting information about the clay works of this region

  Suggested Cultures/Regions:
  - Egypt
  - Greece
  - China
  - Mexico
  - France
  - England
  - Japan
  - Australia
  - Germany
  - Canada
  - Sweden
  - Denmark
  - Netherlands
  - Italy
  - Islamic
  - United States: various Native American cultures
  - Africa (other than Egypt)
  - Russia

Assessment Objectives

- Students understand that clay was created through the slow change and erosion of the earth.
- Students understand the different types of clay – Sedimentary and Residual -- and how each was created.
- Students researched and reported on a culture that has created objects from clay for both artistic and utilitarian means

Academic Content Standards

National Standards: Earth & Space Science

Standard 2: Understands Earth's composition and structure.

Grades 3-5

Benchmark 1: Knows how features on the Earth's surface are constantly changed by a combination of slow and rapid processes (e.g., slow processes such as weathering, erosion, transport and deposition of sediment caused by waves, wind, water and ice; rapid processes such as landslides, volcanic eruptions and earthquakes).

Benchmark 4: Knows the composition and properties of soils (e.g., components of soil such as weathered rock, living organisms, products of plants and animals; properties of soil such as color, texture, capacity to retain water, ability to support plant growth).

National Standards: Visual Arts

Standard 4: Understands the visual arts in relation to history and cultures.

Grades 5-8

Benchmark 1: Understands similarities and differences among the characteristics of artworks from various eras and cultures (e.g., materials; visual, spatial and temporal structures).

Benchmark 2: Understands the historical and cultural contexts of a variety of art objects.

Benchmark 3: Understands how factors of time and place (e.g., climate, resources, ideas, technology) influence visual, spatial or temporal characteristics that give meaning or function to a work of art.

Ohio Standards: Science

Earth and Space Science: Students demonstrate an understanding about how Earth systems and processes interact in the geosphere resulting in the habitability of Earth. This includes demonstrating an understanding of the composition of the universe, the solar system and Earth. In addition, it includes understanding the properties and the interconnected nature of Earth's systems, processes that shape Earth and Earth's history. Students also demonstrate an understanding of how the concepts and principles of energy, matter, motion and forces explain Earth systems, the solar system and the universe. Finally, they grasp an understanding of the historical perspectives, scientific approaches and emerging scientific issues associated with Earth and space sciences.

Grades 3-5

Benchmark B: Summarizes the processes that shape Earth's surface and describes evidence of those processes.

Grades 6-8

Benchmark E: Describes the processes that contribute to the continuous changing of the Earth's surface.

Ohio Standards: Visual Arts

Historical, Cultural and Social Contexts: Students understand the impact of visual art on the history, culture and society from which it emanates. They understand the cultural, social and political forces that, in turn, shape visual art communication and expression. Students identify the significant contributions of visual artists to cultural heritage. They analyze the historical, cultural, social and political contexts that influence the function and role of visual art in the lives of people.

Grades 5-8

Benchmark C: Demonstrates knowledge of historical influences on contemporary works of art and makes predictions about influences on the future of visual art.

Benchmark D: Researches culturally or historically significant works of art and discusses their roles in society, history, culture or politics.

"No amount of skillful invention can replace the essential element of imagination"

Edward Hopper