

Lesson Plan

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Lesson Topic: Cylinder Seals — "What Symbolizes You?" (*Looking at an ancient innovation through the STEAM model lens*)

Grade Level:
6th and higher

Subject:

S (Science) Study how resources used were affected by climate and contributed to the functionality [functionality of what?]

T (Technology) Compare and contrast this ancient innovation and how it has evolved or been replaced over time

E (Engineering) Investigate how seals were created and used in ancient times

A (Art) Discuss Functional vs. Aesthetic Design, create a cylinder seal, slab and coil clay methods

M (Math) Applying measurement and calculation (Language Arts) Reflect and record on findings, Close Read of artifacts

Common Core Standards

CCSS.ELA-LITERACY.RL.6.1

Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

CCSS.ELA-LITERACY.RL.6.2

Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.

CCSS.MATH.CONTENT.6.RP.A.3.D

Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying

CCSS.ELA-LITERACY.RH.6-8.5

Describe how a text presents information (e.g., sequentially, comparatively, causally).

MS-ETS1-1.

Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

MS-ETS1-2.

Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

National Core Art Standards

Anchor Standard #1. Generate and conceptualize artistic ideas and work.

Anchor Standard #2. Organize and develop artistic ideas and work

Anchor Standard #6. Convey meaning through the presentation of artistic work.

Anchor Standard #11. Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.

Enduring Understanding

Student will understand:

- How the innovations and technology of ancient times were the stepping stones for modern-day advances.
- How the resources of ancient Mesopotamia contributed to the functionality of ancient innovations.
- How important cylinder seals were in ancient times.
- How an artifact can be an example of functional and aesthetic design.
- How to utilize clay as an affective medium to produce a cylinder seal that represents a form of personal signature.

Essential Question

- What was a means for ancient Mesopotamians to provide a signature or validate a business transaction? What is a modern-day equivalent to this innovation?
- What mediums were used in ancient times to create a cylinder seal and impression? How was this problematic?
- What purpose did cylinder seals have?
- Is a cylinder seal an example of functional or aesthetic design?
- How can we create our own cylinder seal that represents who we are?

Student Outcomes

Students will gain a better understanding of:

- The culture of ancient Mesopotamia
- The importance of the innovation of cylinder seals
- The importance of the development of cuneiform
- Functional design vs. Aesthetic design
- Beginning clay building techniques: slab and coil

Procedure

**note: This lesson is designed as an introduction to an ancient Mesopotamian unit. Please look at mentioned websites for more information and background knowledge to support the lesson.*

Day 1:

Close Read Activity

Place students in pairs. Present each pair with the "Claim, Site, Wonder" worksheet. Project slide #1 (see image resources). Follow the prompts for image #1

Project slide #2. Follow the prompts for image #2

Project slide #3. Follow the prompts for image #3

Students will complete the worksheet by comparing each of the images and documenting findings according to prompts.

Class Discussion-

"Are there any findings that you and your partner seem to disagree on?"

Close Read Activity-

Present each student with "Ancient Artifacts: Functional vs. Aesthetic design" worksheet and display images #1 and #2. Students will work independently. As a class they will discuss their findings and come to conclusions. Provide students with background information and history of ancient Mesopotamian culture and the importance of cylinder seals.

Day 2:

Planning (Cylinder Seals Think Sheet)

Pass out the planning think sheets. Students will use this worksheet to envision and create a final design that will be a representation of themselves. Students will draw images that fall under the following 3 categories: images that represent your interests, hobbies or passions; several versions of your name using the cuneiform alphabet; and images that symbolize protection or power. (*Note: make sure to have a discussion regarding when cuneiform was introduced and that early seals did not include this script. Using symbols to represent oneself was a necessity. Our examples are illustrating both ways of creating a signature.*)

Students will choose one image from each category to create a simple composition/design to be drawn into their cylinder seal. Students should consider images that are not too detailed. Once approved, students will trace over the image to make it darker and flip the worksheet over to trace the image on the back to create a "reverse image"

Day 3:

Creation of the Cylinder Seals

(Use an Elmo or similar projection camera if available)

1. Instruct students to draw a 2 1/2 X 1 3/4 inch rectangle on a half sheet of copy paper.
2. Place a half block of clay inside the rectangle and press the clay into a "slab" until it fits the size. Students may also use a dowel rod or rolling pin to flatten the clay.
3. Trim any clay that has pressed outside of the rectangle and reserve for embellishment.
4. Place a pencil vertically on top of the clay. The clay should be laid out horizontally. Carefully bring the clay around the pencil so the ends meet. Do not let the clay overlap. Smooth out the seam and any imperfections in the clay. Make sure the cylinder remains 1 3/4 inches. The thickness will be important when carving into the clay to create the design.
5. Carefully take the clay off the pencil and lightly roll it on the table and tap the two ends on the table to create a smoother surface. With the pointed end of the skewer, draw a line down the back where the seam is. On the direct opposite side of seam, make a small mark at the top of the clay. This will determine where the design will begin.
6. Begin pressing the design into the clay with the skewer. The skewer can also be "dragged" into the clay to create the design. Make sure that image is deep and clean, so that it can easily press into a piece of clay.
7. With the remaining scraps of clay, create small coils to be placed at the top and/or bottom of cylinder

Materials

Supporting Worksheets (*see supporting materials attachment*)
"Claim, Cite, Wonder", "Ancient Artifacts: Functional vs. Aesthetic design", "Cylinder Seals-think sheet", "Final SRA: Student Reflection and Assessment",
Cuneiform Alphabet Worksheets

Supporting References:

History of Ancient Mesopotamia

<http://www.timemaps.com/civilization-ancient-mesopotamia>

Preliminary Report of the Oriental Institute's Iraq Expedition

<http://oi.uchicago.edu/sites/oi.uchicago.edu/files/uploads/shared/docs/oic16.pdf>

History of Cylinder Seals

<http://www.ancient.eu/article/846/>

Paper (Ancient Mesopotamia Culture Through Cylinder Seals)

http://www.academia.edu/3622850/Ancient_Mesopotamian_Culture_Through_Cylinder_Seals_3300_-_2300_BCE

Supporting Images: (*see supporting materials attachment*)

Sculpey Clay (typically clay comes in 2 1/4 X 1 3/4 inch blocks. These will be cut in half. One half for each student)

Plastic Disposable Knives

Kabob Skewers

Rulers

Pencils

Sheets of copy paper, cut in half

Use of Oven or Toaster Oven

Enrichment Activity (Optional)

Calculating a Tile- Students can calculate how many rolls of seal it would take to make a 12 inch clay tile (can use an additional piece of Sculpey or oven bake clay if you want to make an additional tile). Students then can take this answer to calculate how many rolls it would take to cover the surface of various things throughout the school such as a wall or floor.

Word Bank

Mesopotamia	an ancient region in the eastern Mediterranean, corresponding mostly to today's Iraq.
Cylinder Seal	an ancient innovation in a cylinder shape that when rolled onto clay, leaves an impression. This impression was early form of a signature.
Cuneiform	Early form of the Mesopotamian alphabet

Coil	to roll clay into a "snake-like" form
Slab	to roll clay into a flat form that has equal thickness throughout
Functional Design	design of a form that can serve a specific purpose
Aesthetic Design	design of a form that is for admiration and to illustrate beauty or expression
Assessment	
Formative- Worksheets: <i>Claim, Site, Wonder, Ancient Artifacts: Functional vs. Aesthetic Design, Cylinder Seals- think sheet</i>	
Summative- Worksheets: <i>Final SRA: Student Reflection and Assessment</i>	