

Rosetta Stone Project: Teachers

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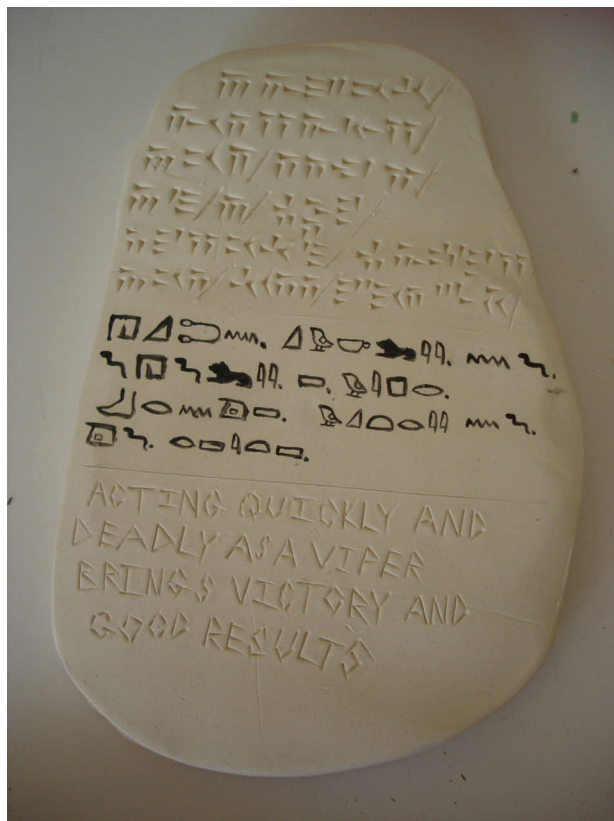


Figure 1. Completed Rosetta Stone

OVERVIEW

The Rosetta Stone Project is a cross-curricular, hands-on activity in which students create their own modified “Rosetta Stone” clay tablets. Students first learn how available materials influenced the development of scripts in Mesopotamia and Egypt, how the knowledge of cuneiform and hieroglyphs was lost for more than 1,000 years, and how these scripts were finally deciphered in the 19th century. Then they create a message that reflects a Mesopotamian or Egyptian cultural perspective, transliterate their message into cuneiform and hieroglyphs, and inscribe individual tablets with their message in cuneiform, hieroglyphs, and English. Finally, they reflect on their learning process.

This project involves a certain degree of conscious poetic license. Having researched the original Rosetta Stone, students understand the significance of the three original scripts. However, in place of the hieroglyph-demotic-Greek sequence inscribed on the original stone, they write in a cuneiform-hieroglyph-English sequence in order to reinforce what they have learned about Mesopotamian and Egyptian writing without having to learn two additional scripts (demotic and Greek). As it is impractical for students to incise into hard stone, instead they press a wedge-shaped tool into the leather-hard clay to create cuneiform, paint hieroglyphs onto the clay surface to imitate writing on stone or papyrus, and lastly press block English letters into the clay. As in ancient times, the requirements and limitations of available materials influence the technique and final product.

BACKGROUND

Students should have completed units on Mesopotamia and Egypt before embarking on the project. If this is not part of their curriculum, the teacher can prepare them by introducing the rise of civilization in the four river valleys of the Tigris-Euphrates, Nile, Indus, and Huang He rivers. This should include a discussion about the characteristics shared by all early civilizations and focus particularly on the cultures and geography of Mesopotamia and Egypt. Teachers should also introduce the development of Bronze Age writing systems beginning with Neolithic proto-writing. If time permits, a brief overview of writing in all four sites of early civilization (Mesopotamia, Nile, Indus, Huang He) is useful.

GRADE LEVELS

This project was designed for ninth grade but can easily be adapted for other grade levels. To narrow the project’s scope and time frame, younger students might simply make a smaller tablet and write their name in hieroglyphs and/or cuneiform. To expand the project, students might research other historical and/or contemporary scripts and learn to write in other scripts. The teacher could also assign a research paper on the Rosetta Stone, the decipherment of cuneiform, or famous archaeologists or epigraphers. For all students, the purpose of the project is not just to carry out a classroom art activity, but rather to understand and experience first-hand the nature of written expression as informed by material and cultural factors.

GOALS

The primary goals for this project are for students to:

- learn how writing evolved
- identify the ways ideas and sounds can be represented visually in pictograms, ideograms, phonograms, and alphabets
- understand the history and significance of the Rosetta Stone and the Behistun Inscription
- explore how the stories and aphorisms of Mesopotamia and Egypt reflect cultural values
- analyze the distinction between language and script, translation and transliteration
- demonstrate competence in transliterating English into cuneiform and hieroglyphs
- examine how available materials influenced the development of writing
- experience writing as a kinesthetic, aesthetic, and intellectual endeavor
- reflect meaningfully on their learning experience



Figure 2. (Left) Modeling Tools used to inscribe in damp clay (Right) Paintbrushes and underglaze used to paint hieroglyphs

MATERIALS

Clay

- * White earthenware, available at ceramic or art supply stores, is easy to work with and does not stain; red or brown clays (such as terracotta) are more authentic, but messier. Most types of clay come in 25-pound bags; calculate amounts at slightly less than one pound per student.
- * If a kiln is not available, oven-baked clay (such as Fimo or Sculpey) or self-hardening clay also works well and achieves close to the same results. Cuneiform and English scripts must be completed in one session if self-hardening clay is used; hieroglyphs can be painted later on the hardened clay.

Tools

- * Wood modeling tools (such as Kemper), used to impress wedge shapes, straight lines, or small triangles (Figure 2)
- * Alternatively: Sticks, lengths of dowel, chopsticks, twigs, bamboo, or reeds (the most authentic!) if you



Figure 3. Clay blocks before being sliced into thin slabs

can find them. These will need the ends filed or whittled to produce the correct shape (small straight lines, small triangles, or wedges) when pressed into the clay. **Note:** Holding the tools at different angles when pressing them into the clay can modify the inscribed shape.

- * Paintbrushes with very fine tips, in sizes 000 to 2 (Figure 2).

Other Supplies

- * heavy card stock for making two-dimensional tablets (gray or buff colored, 8½ x 11 inches)
- * pencils and art gum erasers
- * rulers
- * black, ultra-fine permanent writers
- * two-gallon plastic baggies or trash can liners
- * scratch paper
- * small plastic containers with lids (approximately two ounces) for distributing individual pots of underglaze
- * newspaper (for placing under clay)
- * plastic dining trays (useful for storing and stacking the tablets between classes)
- * cutting wire (to slice individual clay slabs from the larger block)
- * rolling pins (heavy, for rolling out clay and smoothing surfaces)
- * fettling knives or paring knives (plastic knives for younger students) for trimming the edges of clay slabs
- * underglaze for painting hieroglyphs (if using oven-baked or self-hardening clay, use black acrylic paint rather than underglaze)
- * buckets for water and sponges for cleaning up: sponges can also be cut into small pieces and dampened to smooth the surface and edges of the tablets
- * wet wipes and/or paper towels for cleaning work surfaces

CLASS TIME

Following is a breakdown of the project into five approximately 45-minute class periods and the homework to be assigned for each:

- Day 1: Introduce project; present (using relevant images) evidence for the development and decipherment of hieroglyphs.
Homework: Students write definitions of key terms relevant to decipherment of hieroglyphs.
- Day 2: Present (using relevant images) evidence for the development and decipherment of cuneiform; read samples of Egyptian and Mesopotamian proverbs; discuss guidelines for student messages.
Homework: Students write definitions of key terms relevant to decipherment of cuneiform; choose messages.
- Day 3: Introduce principles of transliteration; students practice transliterating messages into cuneiform and hieroglyphs; distribute card stock for two-dimensional tablet; show samples to demonstrate format.
Homework: Students make two-dimensional tablet.
- Day 4: Students practice cuneiform, roll out individual tablet shapes, and inscribe cuneiform; hand out reflection prompt.
Homework: Students begin pre-writing for reflection.
- Day 5: Students practice hieroglyphs and English, then paint and inscribe to complete their tablets.
Homework: Students complete pre-writing and write reflection.

PROCEDURES

Teaching the Development and Decipherment of Ancient Scripts

Before embarking on the hands-on elements of this project, students should first learn how writing developed in Mesopotamia and Egypt, how knowledge of these scripts was lost, and how they were finally deciphered in the 19th century. As students prepare to design and craft their own Rosetta Stones, the teacher should emphasize the influence of raw materials on the development of each script, the uses of writing, the role of the scribe in ancient society, and the significance of the remarkable scholars whose success in deciphering ancient scripts effectively created the disciplines of Near Eastern studies and Egyptology. Two class periods should provide sufficient time for students to absorb the information and for the teacher to check their understanding.

Students receive the “Key Terms and People” handout, and in addition to taking lecture notes, they should write definitions either in class or as homework.

Teachers may consult the following books and online sources: *The Story of Writing* (Andrew Robinson), *The Story of Decipherment* (Maurice Pope), “About Cuneiform” (University of Pennsylvania Museum of Archaeology and Anthropology, online source), and “Historic Writing” (British Museum, online source). Visual images strongly enrich lectures and enhance learning; the books and websites listed in *Resources* contain ample images to project or provide in handouts.

Choosing a Message

Now comes the creative part of this project. Instruct students to imagine that they are scribes living in either ancient Mesopotamia or Egypt. They have been commissioned by the royal family to inscribe a special message commemorating the birth of a royal heir. The message should contain words of wisdom for this child to live by as he or she grows up. The scribes are eager to gain royal favor by displaying their expertise and their wisdom in choosing a wise and appropriate message. To show off their talents in mastering two complex writing systems, cuneiform and hieroglyphics, they will inscribe their message in both these scripts as well as in English.

Teachers should remind students to think deeply about the message they want to impart to this child, who will grow up to be a leader of the people. Books should be available in the classroom for inspiration, and the teacher should guide students to primary source material such as the Instructions of Ptah-Hotep, the Babylonian proverbs from the library of the Assyrian king Assurbanipal, or the *Epic of Gilgamesh* for ideas (see *Resources*). To supplement library resources, the Internet Ancient History Sourcebook contains a wealth of full-text primary source documents. Students may use an expression from an ancient text, or they may come up with their own message that reflects the values and perspective of their ancient time. If they choose a message from a text, they should note the source and cite it in their reflection papers.

Students should have their messages approved by the teacher before beginning to transliterate into cuneiform and hieroglyphs. Some students might choose phrases from popular songs or sayings that reflect a contemporary rather than an ancient outlook on life. This is an opportunity to discuss changes in values over time and to redirect students to choose or create a more authentic message. For examples of messages students have chosen, see Figures 1, 4, and 9.

Transliterating

To introduce the process of transliteration, the teacher should review the distinction between language and script, translation and transliteration:

A language is a system of oral (and written) communication; a script is a system of written symbols that convey the words and ideas of a spoken language.

To translate is to express the meaning of words in one language using the words of another language. To transliterate is to write the sounds of one script using the closest-sounding corresponding symbols of a different script.

For this project, students will be transliterating the sounds of the English language into two scripts: ancient cuneiform and ancient hieroglyphs. Stress to students that they will not be translating their messages into ancient languages; rather they will be transliterating the sounds of the English language into the symbols of the ancient languages that were written in cuneiform and hieroglyphs.

The teacher should provide handouts for cuneiform and hieroglyph symbols and their corresponding English sounds and meanings (see *Resources*). As students begin to work on transliterating their messages, they will learn by induction. At first they will try to find letter-by-letter symbols in cuneiform and hieroglyphs corresponding to the English spelling of their message. They will discover that some letters correspond rather directly with symbols, while others will not have a corresponding symbol in cuneiform or hieroglyphs. Students will learn that written symbols can only approximate the sounds of spoken language.

Transliteration does not need to conform to the proper spelling of a word (in fact, it rarely can) but should follow as closely as possible its sounds. The way we spell words in English is often not phonetic, but rather has to do with the origins of the words (Latin versus Anglo-Saxon, primarily) and how the modern word evolved over time. The teacher should point out that just as English has evolved and incorporated words from other languages, the languages of ancient Mesopotamia and Egypt absorbed words and sounds from other languages through cultural contact. As an example, a symbol for “L” did not appear in hieroglyphs prior to the Hellenistic period. When the names of Hellenistic rulers such as Ptolemy and Cleopatra needed to be written, hieroglyphic symbols were developed to represent the “L” sound.

To help students learn to liberate sound from spelling in order to transliterate effectively, the teacher can instruct them to close their eyes, pronounce the word they are trying to transliterate, and then think of alternative ways to spell the word. For example, the word “wisdom” might be spelled “wizdum” or “wyzdim.” In fact, “wisdom” would be recognizable if written without the vowels at all (note that some languages, such as Arabic and Hebrew, do not write out vowels) and still be recog-

nizable: “wzdm.” In the absence of a “w” or even a “d” sound, the meaning would still be recognizable if it were transliterated as “vztm.” After a bit of experimentation, students will have fun thinking outside the constraints of proper spelling as they transliterate their messages.

Students should write out their English message with the corresponding cuneiform and hieroglyphic symbols. This will help streamline the process, as they won’t have to look up symbols anew each time the same sounds are repeated.

Making a Two-dimensional Tablet

Once students have successfully transliterated a message, they will make a two-dimensional version of their tablet. This is essentially a model of the clay tablet that allows the student to experiment with new scripts on a familiar medium (paper) before working with an unfamiliar medium (clay). The two-dimensional models are also easier to store and display in the classroom than clay tablets.

The teacher should cut half-sheets of 8½ x 11 inch gray or buff-colored card stock in advance to create shapes of approximately the same dimensions as the clay tablets. Students should lightly pencil in lines, dividing the space into three equal segments. Then they can practice laying out the messages pleasingly, taking into consideration the

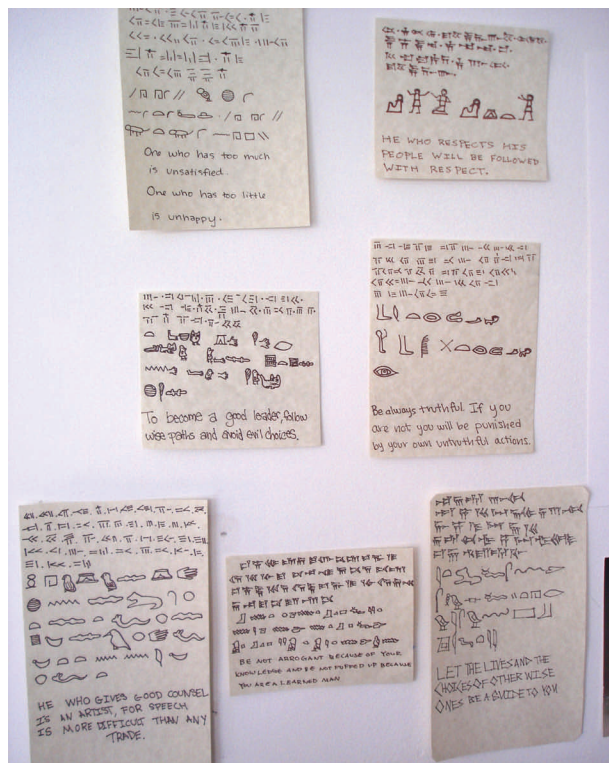


Figure 4. Two-dimensional Rosetta Stones on card stock for easy classroom display (completed in planning clay Rosetta Stones, or made instead of clay models to save time or money)

length of their message and the size of the symbols needed to fill the space appropriately. Remind students to pencil in very lightly at first so that they can erase easily without leaving a mark. Once they have completed all three scripts in pencil and are satisfied with the layout, they should carefully trace over their symbols with black ultra-fine permanent marker. Finally, using a soft art gum eraser, they should erase the pencil lines completely. The students' names should be written on the back of each two-dimensional tablet in pencil, as a marker may bleed through and become visible from the front side (Figure 4).

Making the Clay Tablet

Organizing the Classroom

If multiple class sections use one classroom, it will be necessary to develop a system to keep track of each class section's tablets at various stages of completion. First, an area will be needed to store supplies for the project—a rolling cart works well for this purpose, or else a designated space in the classroom.

Second, considerable horizontal space is needed to store each class section's tablets as they are being worked on. Placing the tablets on plastic dining trays will permit students to move them without excessive handling, and they can stack the trays vertically as long as the tablets are not taller than the depth of the trays.

Managing the project in multiple class periods can be challenging. If a helper is available to assist in handing out materials and cleaning up between periods, answering questions, and providing guidance, the whole project will go more smoothly. In order to clean up their areas and store their tablets properly, students must stop working five minutes before the end of a class period.



Figure 4. (Left) Rolling out a clay slab to approximately 5 x 8 inches (Right) Smoothing the edges of the clay with fingers to avoid cracking during firing

Carrying Out the Project

- Distribute one plastic dining tray, a few sheets of newspaper, wood modeling tools, and a small lump of practice clay (the size of a small baseball).
- Students should flatten out their practice clay to 1/2-inch thickness and then experiment pressing the tools into the damp clay. Figure 5 illustrates how pressing the wedge-shaped tip of the tool makes the cuneiform symbols easily and quickly.

- Circulate around the classroom as students practice, to guide them until they become comfortable making the cuneiform (see "Pitfalls").
- After a few minutes, cut slabs of clay (from the 25-pound bag) approximately 1 1/4 inches thick (Figure 4) and distribute one to each student along with a rolling pin.



Figure 5. Inscribing cuneiform using the wedge-shaped tip of a tool

- Ask students to roll the clay slab until it is approximately 3/4 inch thick. If the slab is too thin, it will warp, crack, and break too easily and students may accidentally press holes in it. If it is too thick, it will blow up in the kiln. The rolled-out slab should measure about 6 x 8 inches (Figure 4).
- Students can leave the slab in a natural shape with slightly uneven edges, or cut it to a more precise square or rectangle; the student's individuality as a scribe emerges here. Smoothing the edges will reduce the likelihood of cracking during the firing process (Figure 4).
- Students should very lightly score the surface of the tablet to divide it into three fairly equal segments, as they did for their two-dimensional tablets: the top third will be for cuneiform, the middle for hieroglyphs, and the bottom for English.
- At this point, the students should plan their layout on the clay slab as they did on their models. They must measure and plan, or they may run out of room on a line or on the tablet before they finish.
- Now students are ready to inscribe cuneiform into their full-sized clay tablets, copying the layout and symbols from their two-dimensional tablets. When students experience the difference between writing on smooth paper and pressing into damp clay, they can understand how materials influence the development of writing and gain an appreciation for a scribe's painstaking work.
- When it is time to clean up for the day, students

should be sure to scratch their names into the back of their tablets. They should also write their names on the newspaper that is under their tablets; then they can leave their tablets on the newspaper and tray. If they are finished with the cuneiform, they can leave their tablets unwrapped. If they have not finished the cuneiform, they should wrap the entire tray in plastic (inexpensive trash can liners work well) to keep the clay from hardening before the cuneiform has been completed.

- Once the cuneiform is finished, pass out paintbrushes and small containers of underglaze as well as another lump of practice clay. Students should flatten out the practice clay and experiment with painting the hieroglyphs, using just the tip of the brush to make as thin and delicate a line as possible.



Figure 6. Painting hieroglyphs on the surface of the clay, using just the tip of the paintbrush to achieve a thin line (notice that some lines are translucent where the student has not painted over a hieroglyph twice; two coats help ensure that it will be solid black when fired)

- When students are comfortable painting their hieroglyphs on the practice clay, they should paint them onto their clay tablets in the middle third of the slab. Caution students to paint carefully, as mistakes are difficult to erase (see Figure 6).
- Once the hieroglyphs have been painted, the tablets should NOT be covered with plastic as this will cause the paint to smear.
- When students are finished painting their hieroglyphs, they should once again use their tools and practice clay to practice the English letters (see Figure 7). Students may wish to pull or drag the points of their tools through the clay, but this will likely result in many small crumbs of clay forming on the edges of their marks. To avoid this problem, they should press the wedge-shaped tip of the tool into the clay to make block letters.
- When all three scripts are finished, the tablets will



Figure 7. Inscribing an English saying in block letters

need to dry out completely before firing. This may take up to two weeks depending on temperature and humidity. Remove the newspaper from under the tablets and allow them to dry on the plastic trays. Two tablets should fit nicely on each tray, and the trays may be stacked vertically, as long as the tops of the trays are not higher than the depth of the trays and air can circulate easily between the layers of trays.

- Earthenware clay should be fired to bisque temperature, anywhere from cone 010 to cone 4, after they are completely dry. For other kinds of clay, follow the manufacturer's directions.

PITFALLS

- The key to successful cuneiform is to PRESS the tools into the clay, NOT try to pull or drag the tools across the surface. Dragging tools through damp clay will make many small clay crumbs on the edges of the symbols. If the surface of the cuneiform in-



Figure 8. Students working on their Rosetta Stones

scription is very uneven or pitted, students may roll a rolling pin very lightly over it to smooth it out.

- Painting complex hieroglyphs is challenging, and students should practice using just the very tip of the brush to make a fine line. Those with less hand control may need to simplify some hieroglyphic symbols.
- Mistakes on the clay can cause the final product to look messy and disappoint students who have worked hard on their stones. While cuneiform mistakes can usually be smoothed over with fingers or rolling pin, hieroglyph mistakes are difficult to remove without leaving a black smudge that may not be apparent until the tablet is fired. Practicing thoroughly before starting work on the tablet itself is essential. If a student makes a small mistake in the hieroglyphs, it is better to leave it than to risk smudging.
- Covering tablets in plastic can raise (or maintain) the humidity around the clay; this softens the surface and may damage incisions and paint.

SUMMING UP

The *Reflection Assignment* is designed to reinforce students' understanding of early writing systems and their decipherment and to allow them to reflect on their own process. For further reinforcement, the teacher should en-

courage class discussion and sharing of opinions and reactions after students have handed in their reflection papers.

If classroom space is limited, displaying more than a small number of the completed stones can be difficult. Therefore, after students have finished discussing the project and their individual results, they should take their stones home (they make great holiday gifts!) and leave their two-dimensional versions at school, where they can easily be displayed on bulletin boards or walls.

ASSESSMENT

Each component of the project is assessed individually and the points added to produce an overall grade for the project. See *Grading Rubric*. **Note:** Because students must use unfamiliar tools and techniques, the rubric reflects careful (rather than perfect) execution of the artistic components.



Figure 9. Completed Rosetta Stones