



PATTERNED CLAY TILES

GRADE: 8-12

TIME: Six 45-minute sessions

In the first part of the 20th Century, Frank Lloyd Wright challenged himself to transform concrete, a material often considered mundane or ugly, into a thing of beauty. Whether through the design of a spiritual space like Unity Temple or the design of a residential home, Wright used affordable concrete in unconventional and innovative ways. In this lesson, students will explore the concrete “textile block” homes designed by Frank Lloyd Wright and discover the science behind cement. Participants will then create a clay tile incorporating patterns and textures inspired by Wright’s designs.

INTEGRATED SUBJECTS: Visual Arts, Science, Math

OBJECTIVES

MATERIALS | RESOURCES

Clay (Tip: This lesson is written using stoneware clay and a kiln. If not available, air-dry clay can be used. Roll out air-dry clay on a silicone pastry mat and omit the drying steps. Air-dry clay will harden but not to the degree of kiln-fired clay.)

6" x 6" paper (Tip: origami paper works well)

Scissors (Tip: Small, sharp scissors)

Canvas-covered boards to roll clay

Guide sticks for rolling an even slab (½" thickness approximately)

Rolling pin or dowel

Plastic grocery bags to cover clay tiles

Carving tools (small)

Paper towels and newspaper

Internet access for independent student research (optional)

1. Research Frank Lloyd Wright’s textile block homes.
2. Discover the materials used in the creation of the cement blocks.
3. Understand how the cement we see every day is made.
4. Create a patterned tile using clay.
5. Define symmetry and create a symmetrical design.

ESSENTIAL QUESTIONS

1. How can ordinary materials be used in extraordinary ways?
2. How do building materials affect how homes are constructed?
3. What methods can be used to create a patterned design?

LESSON PROCEDURE

EXPLORE

Session One

- **Introduce Frank Lloyd Wright's textile block homes.** Look closely at the John Storer House, The Samuel Freeman House, the Ennis House, and the Millard House. Zoom in and focus discussions on the patterns in the cement blocks. (Tip: Resources include <https://crosbydoe.com/press/the-john-storer-residence-1923/>, <https://franklloydwright.org/site/samuel-freeman-house/>, <https://franklloydwright.org/site/ennis-house/>, and <https://www.moma.org/collection/works/282>.)
- **Ask students to reflect on where they see cement in their surroundings.** Ask students: How do local examples of cement compare to the way Frank Lloyd Wright used this material?
- **Describe and ask students to research how cement is made.** Share segments of the following videos that pertain to your discussions. <https://www.cement.org/cement-concrete/how-concrete-is-made> and <https://www.youtube.com/watch?v=NgCl1yf5oN8>

Session Two

- **Review Frank Lloyd Wright's use of cement as a design element.**
- **Demonstrate cutting a symmetrical pattern from the 6" x 6" square paper.** Remind students that several patterns can be made and that they may simplify or alter their design if needed.
 - Optional: Have students watch a video demonstration at <https://www.youtube.com/watch?v=RjsAjb7B-MQ>
- **Demonstrate how to set-up and clean-up when working with clay.** Begin by demonstrating how to roll a slab and then cut a 6" x 6" square clay tile. Show students how they can trace their paper pattern onto the clay and carve into the tile to create a low relief. If using stoneware clay, demonstrate how to properly wrap and store the tile so it will not dry out too quickly. This will prevent cracking.

ENGAGE

Session Three

- **Have students research and discuss the practicality of cement and the benefits or disadvantages of using this building material.** Ask students why they think Frank Lloyd Wright would have chosen to build with concrete.
- **Students can draw or cut a symmetrical design from the 6" x 6" square paper.** Encourage experimentation by asking students to cut several different types of patterns. Students may also choose a freeform design or an asymmetrical pattern for their tile.
- **To prepare for Session 4, show students the following short video on how to roll out a clay slab:** <https://www.youtube.com/watch?v=armZl5A65m8>

DESIGN

Session Four

- **Distribute materials and clay.** Wedge clay and roll slabs approximately 3/8" thick and ask students to cut a 6" x 6" square by tracing the paper pattern. (Students may cut more than one tile if materials permit.)
 - Differentiation: Students may work independently or in small groups depending upon supplies and student ability.
- **Lay the symmetrical paper pattern on top of the clay and trace the design onto the tiles using a needle tool.** Encourage students to experiment and simplify their design if necessary. The clay can be carefully carved away to create a low relief. Remind students to consider the thickness of their tiles, and to remove only the surface of the clay. Advise them not to carve too deeply!
- **Students should wrap and cover all work in progress so the clay does not dry out.**

LESSON PROCEDURE (continued)

DESIGN

Session Five

- **Encourage students to continue carving their clay tiles.**
- **Instruct students to loosely wrap their clay tiles when they are complete. Allow several days for the clay to dry by gradually removing the plastic bag. Slow drying will prevent cracking. The clay will be very fragile until it is fired. When the clay is bone-dry it is ready to be fired in a kiln.**
 - Recommendation: Make a teacher sample prior to this lesson. This process is a necessary step so instructors will be prepared for how best to work with the materials. It is preferable to not only show one sample at the outset in order for students to develop their own style. Multiple samples may encourage variety and experimentation for students.

CRITIQUE & INTERPRET

Session Six

- **Ask students to arrange small groupings of the completed tiles and discuss why they think certain tiles work well together or why not.**
- **Ask students to reflect on what their preferred building material might be and why. What materials are used in their neighborhood?**

APPENDIX A

