

WRIGHT ANGLES: GEOMETRY IN THE BUILT ENVIRONMENT

GRADE: K-12

TIME: 45 minutes

In this lesson participants think critically about the built environment as they learn to identify two- and three-dimensional geometric shapes. Working with five basic shapes, participants investigate buildings Frank Lloyd Wright designed to uncover the unique geometry that was at the heart of his design legacy. In doing so, participants learn to identify the shapes regardless of location, orientation, size, color, and dimension; and articulate their observations with the use of descriptive and positional words.

**This lesson was inspired by the Robie House Teacher Education Project supported by the Terra Foundation for American Art.*

INTEGRATED SUBJECTS: Visual Art & Math

OBJECTIVES

MATERIALS | RESOURCES

Examples of Wright's designs
Frederick C. Robie House
Unity Temple
Art Glass
Copies of 5 geometric shapes (1 set per person)
Scissors
Drawing Paper
Pencils
Crayons
Color Pencils

1. Introduce Frank Lloyd Wright's design legacy and learn to recognize distinguishing characteristics (geometric shapes) of his work.
2. Explore and identify geometric shapes.
3. Increase awareness of the built environment.
4. Understand how design can transform the world around us and change what we see.

ESSENTIAL QUESTIONS

1. How does Frank Lloyd Wright use geometry in his designs?
2. What steps do you take when you design and create? Is this different for a 2-D or 3-D design?
3. Do you use 2-D and 3-D shapes differently in design?

LESSON PROCEDURE

EXPLORE

5 minutes

- Introduce geometric shapes by having participants brainstorm a list of shapes together. Draw the shapes as participants name them, or have examples ready.
- Discuss each shape identifying unique attributes and characteristics for each.
- Ask participants to name different things you can do with shapes.
- Introduce Frank Lloyd Wright as an American architect and designer that liked to use geometric shapes in his designs. Background information is available at: <https://www.teachingbydesign.org/about/frank-lloyd-wright/>
- Share images and examples of Wrights work and ask participants questions about what they see. Images are available at: <https://www.teachingbydesign.org/multimedia/>

ENGAGE

25 minutes

- Distribute a set of shapes for each participant to color and cut out.
- Once everyone is finished, have participants use their shapes to further investigate Frank Lloyd Wright's designs. **Ask:** Are some shapes easier to find? Are there two- and three- dimensional versions of each shape? If so, how are they each used? (One may be a roof and the other a shape in an art glass design.) Do the colors and sizes affect how easy they are to find? Do they change the way the shapes look and how they are used in the design?
- During discussion, ask participants to reflect on the words they are using when they describe their observations using descriptive and positional words. Example: The equilateral triangle is above the small square.

**Consider having participants bring their shapes on a field trip to a Wright site, or plan a walk around your school to discover the shapes that make up your built environment.*

DESIGN

7 minutes

- Taking inspiration from Wright's designs, have participants arrange their shapes on top of a piece of drawing paper into a unique design. Participants can trace the shapes and color the design.

CRITIQUE & INTERPRET

8 minutes

- Have participants share their designs and reflect on the process of designing with geometric shapes.
- **Ask:** What was it like to design with geometric shapes? How did the type of shapes influence your design? How is your design like Frank Lloyd Wright's designs? How is it different? If your design was a part of our school, where would you find it?