

GEOMETRY & ARCHITECTURAL DESIGN

GRADE: 3-5

TIME: 60 MINUTES

This activity will increase awareness of the geometric shapes that make up the built environment. Participants will identify and discuss the shapes they observe in the design of Frank Lloyd Wright's Home and Studio. They will then design the front of a home using simple geometric shapes and draft their design in 2-D with SketchUp or Tinkercad.

INTEGRATED SUBJECTS: Visual Art, Math, & Science

OBJECTIVES

MATERIALS | RESOURCES

Images of the Oak Park Home & Studio

SketchUp (available free online at:

<https://www.sketchup.com/>)

Tinkercad (available free online at:

<https://www.tinkercad.com>)

Computers

Sketchbooks

Pencils

1. Introduce Frank Lloyd Wright as an American architect and designer.
2. Explore geometry in architecture and be able to identify geometric shapes.
3. Learn basic skills in SketchUp or Tinkercad.
4. Explore ideas of personal interpretation and decision making.

ESSENTIAL QUESTIONS

1. Why did Frank Lloyd Wright use geometric shapes in his designs?
2. What skills and strategies are used when drafting a design digitally?
3. How can simple shapes be used to create complex patterns?

LESSON PROCEDURE

EXPLORE

15 Minutes

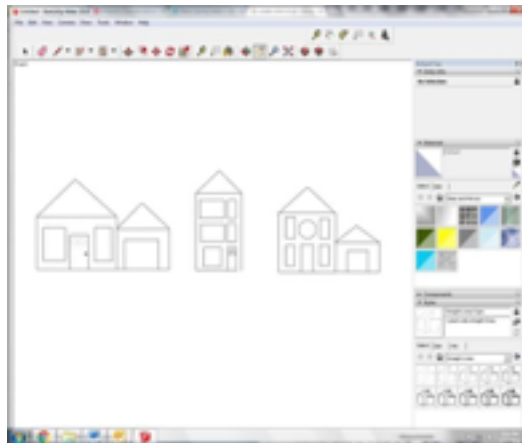
- Show participants an image of Frank Lloyd Wright's Home and Studio in Oak Park. Images are available at: <https://www.teachingbydesign.org/multimedia/>
- Have participants identify the shapes that they see, and discuss how the shapes are being used. Ask: What shapes do you recognize? How are they being used? Is that the best shape for a roof? What other shapes could be used? Why would Wright choose that shape? How would the Home and Studio look different if he used a different shape?

DESIGN

30 Minutes

- Have participants draft their own geometric design using SketchUp or Tinkercad.
- Each house should be made up of:
 - 6 Rectangles
 - 1 Circle
 - 2 Trapezoids
 - 8 rhombuses
 - 4 squares
 - 1 semi-circle

NOTE: If using SketchUp change the "style" to "straight lines" in the lower right hand corner and the view to "front".



CRITIQUE & INTERPRET

15 Minutes

- Have students share their designs, discussing the similarities and differences between them, touching on ideas of personal interpretation and decision making.