

# SPROUTING DESIGN

**GRADE:** 1-5

**TIME:** 45 MINUTE LESSON, 1-2 WEEKS GROWING TIME

In this lesson participants explore the different perspectives of footprints and elevations. First, participants examine the different shapes that can make up the footprint of a building by identifying the shapes in Frank Lloyd Wright's Prairie style masterpiece, the Robie House. Afterward, they create their own unique footprint using geometric shapes and model the design in three-dimensions with sponges and grass seed. Each day, participants care for their designs and record observations as the grass seeds germinate.

*\*This lesson was inspired by the Wright 150 Summer Parks District Program.*

**INTEGRATED SUBJECTS:** Visual Art & Science

## MATERIALS | RESOURCES

Images of Robie House's footprint and elevation  
Sponges  
Grass seed  
Water  
Scissors  
Toothpicks  
Paper plates or trays  
Window access

## OBJECTIVES

1. Introduce the Prairie style and its characteristics.
2. Understand the concept and definition of footprint and elevation.
3. Explore geometry in design and architecture.
4. Connect a natural process (seed germination) to design.

## ESSENTIAL QUESTIONS

1. How can geometric shapes be used to create two and three-dimensional designs?
2. What is the relationship between a birds-eye perspective and an elevation drawing?
3. What is the relationship between the design process and the natural process of seed germination?

# LESSON PROCEDURE

## EXPLORE

- Introduce Frank Lloyd Wright as an American architect and designer that liked to use geometric shapes in his designs.
- Briefly discuss the roles of an architect and designer.
- Discuss geometric shapes and have participants brainstorm shapes they know.

## ENGAGE

- Share images of Frank Lloyd Wright's Robie House, footprint and elevation, and have participants identify the shapes that they see. Images are available at: <https://www.teachingbydesign.org/multimedia/>.
- Help participants define "footprint" and "elevation", and compare the two perspectives. Discuss why both are useful. (<https://www.teachingbydesign.org/design-elements/architectural-terms/>)

## DESIGN

- Have participants experiment with geometric shapes and the combinations they can create to make the foot print of a building. Participants can make sketches or manipulate shape cut-outs.
- Have participants sketch a final footprint design on a piece of paper. Afterward, participants can fill in the interior spaces with rooms and other details to create a full floor plan.
- Have participants carefully cut out their design and trace the outside of the shape onto a paper plate.
- Help participants cut out sponge shapes to fill in their foot print and begin building their design in three-dimensions. Remind participants to pay attention to the elevation design they are creating as they add each piece.
- Once participants are finished with the first level, have them cover their sponge design evenly with grass seed.
- Have participants continue to build the second level and sprinkle evenly with grass seed. Toothpicks can be used to help hold sponges in place when needed.
- Place near sunlight and moisten sponges as needed. Growth begins in a couple of days.

## CRITIQUE & INTERPRET

- Once all the footprints have been transformed into three-dimensional designs, have participants do a gallery walk to observe other's work.
- Discuss their observations.
- Each day, have participants check-in with their design and make observations of what they see. Have participants keep a log or diary of what is happening with the grass seeds and how this impacts their design. Participants can take pictures or make sketches of the progress.





