

Translating Architecture: STEAMy Inspiration from Fallingwater

A Lesson Plan for Teachers

Objectives:

Students will design a dream vacation home that is inspired by Fallingwater as well as by famous homes from target-language cultures, and then use architectural vocabulary in the target-language to describe, discuss and/or present their designs. They will be able to create a set of architectural drawings (floor plans, elevations, and/or sections) and use vocabulary words to label, discuss, and present their drawings.

Summary:

Students will participate in a Virtual Tour of Fallingwater as well as virtual visits to target-language architectural landmarks (virtual visits include images of Fallingwater, and can be modified to include target-language cultural landmarks using the provided PowerPoint presentation).

Optional: Students participate in a real-life guided architectural tour of Fallingwater, during which they are invited to play “eye spy” with Fallingwater’s international art collection (or with a famous landmark home in the target culture).

Following the tour & discussion, students participate in a hands-on workshop wherein they are prompted to design their dream vacation house. Students will learn the basics of architectural drawing in order to create floor plans, elevations, and (if time allows) section drawings of their dream vacation home. They will learn vocabulary words related to architecture and interior design (for example: door, window, wall, room names, names of furniture, colors, textures, patterns, etc). Vocabulary will vary by level.

This lesson presents opportunities for collaboration with teachers in science, technology, engineering, the arts, and math – STEAMy!

Grade Level: Grades 8 - 12

Time Frame: 3-5 Class Sessions but adaptable to more or less

Background:

Fallingwater was the vacation home of the Kaufmann family of Pittsburgh, a wealthy family who owned Kaufmann’s Department Store in Pittsburgh. The Kaufmann family

were world travelers and buyers for their department store. They cultivated a collection of fine and decorative art from around the world.

Fallingwater was designed by the famous American architect Frank Lloyd Wright (1867-1959) and is considered to be the very best example of his work and philosophy. Fallingwater was designed in 1935 and constructed between 1936 and 1939. Wright's philosophy was called Organic Architecture. He felt that architects should take inspiration from nature and design in response to the landscape, rather than destroying the landscape in order to construct houses. Wright also felt that houses should be customized based on his client's needs and preferences. Fallingwater serves as a successful example of Wright's ideas because its site-specific design is in harmony with the landscape (its site) and is highly customized for his clients, the Kaufmanns.

During this lesson, students will be challenged to imagine their dream vacation house while taking inspiration from Fallingwater as well as famous vacation homes in their target-language cultures. Just like real architects, they will choose a location, determine the kinds of rooms needed/desired, and then they will put pencil to paper to communicate their ideas. Teachers will introduce architectural and interior design vocabulary throughout the process.

Optional: Students will also have the opportunity to extend their learning by searching for a dream vacation rental in the target-language culture, describing their choice, and explaining or justifying their selection / arguing for why this would be the best possible dream home (depending on ACTFL proficiency level).

Materials:

8.5 x 11" Drawing paper or larger (5+ sheets per student) – *Each type of architectural drawing should go on a separate piece of paper.*

Pencil, eraser, sharpener (1 per student)

Ruler (1 per student)

PowerPoint(s)

Computer/Projector

Vocabulary Lists (in the target language(s))

Vocabulary List:

Rooms/House:

Kitchen
Bedroom
Dining Room
Bathroom
Toilet
Living Room
Family Room
Office
Attic
Basement
Closet
Patio
Wall
Door
Window
Garden
stairs
pool

Prepositions:

on
under
in
behind
in front
right
left
next to
far
close
across/facing
upstairs
downstairs

Shapes/Patterns:

Square
Rectangle
Triangle

Colors/Texture/Materials:

Blue
White
Red
Purple
Yellow
Orange
Green
Pink
Gray
Brown
Black
Smooth
Hard
Rough
Brick
Stone
Wood

Verbs:

to live in
to decorate
to clean
to climb
to build
to descend (stairs)

Architectural terms

elevation
one, two, and three dimensional
flat
floor plan
aerial view / bird's eye view
section drawing
landscape
Interior Design
features

Oval
Round
Diamond
Checked
Plaid
Polkadot

Location preferences:

urban
rural
city
country
mountains
beach
north, south, east, west

lake
ocean
forest
night-life
relaxed
quiet
vibrant

Questions about Dream Homes:

Pre-Drawing:

Where would you want your dream vacation house to be located and why?
What kind of rooms will your dream vacation house need?
What kinds of colors, textures, and patterns will you use in the design of your dream vacation house, and why?
Are there any special features that your dream vacation house will need to have?

Post-Drawing:

Where is your dream vacation house located, and why?
In what way(s) is your dream vacation home designed for its unique landscape?
What materials would you use to create your dream vacation house and why?
Which features of your dream vacation home are customized for your preferences and tastes?

Teacher Prep:

If using the provided PowerPoints to introduce Fallingwater and architectural drawing, be sure to review the included notes in advance. Note that workshop materials include resources from an upcoming PSMLA presentation with sample famous vacation homes from the Spanish and French speaking world, as well as detailed lesson plans and resources for target-language integration.

Procedure:

Day 1 (40-50 minutes): Introduction to Fallingwater & vocabulary for dream homes

Options:

- A field trip to Fallingwater that includes a guided architectural tour and hands-on workshop that introduces architectural drawing and vocabulary.
- A virtual field trip to Fallingwater that includes an introduction to Fallingwater and introduction to architectural drawing and vocabulary.
- Teachers may use the provided PowerPoint presentations to introduce Fallingwater to their students.

Day 2: (40-50 minutes) Famous architectural landmarks / vacations homes in the target language cultures

- Recall prior learning (architectural vocabulary and Fallingwater details)
- Teachers choose a famous architectural landmark / vacation home from their target language cultures (5 C's: Comparisons). For example, French teachers might choose to highlight Château de Versailles or Claude Monet's home at Giverny; Spanish & Arabic teachers - El Alhambra; Spanish teachers - Gaudi's El Capricho in Spain or La casa azul de Frida Kahlo in Mexico; Chinese teachers - The Forbidden City; German teachers Neuschwanstein Castle, etc.
- Teachers create a presentation modeled on the Fallingwater example to share visuals and vocabulary with their students. (See Saturday's presentations for samples in French and Spanish)
- Option: Offer a virtual field trip that includes an introduction to the target culture home and reinforcement of architectural and home vocabulary.

***Workshop Activity for teachers:

- Develop target language key vocabulary list (Take a moment to build out the key vocab in your own target language - then we'll share!)
- Brainstorm and share possible famous vacation homes or architectural landmarks from your target cultures to use with this lesson
- Explore which famous homes or architectural landmarks offer virtual tours
- Come back for more!: (Conference presentation later this weekend using 2 concrete examples from Spanish and French and including resources for implementation in your classroom)

Day 3: (40-50 minutes) Introduction to Dream House Design Challenge

- Provide students with a handout / powerpoint including the questions below (in your target language); Walk students through the questions, asking them to use key vocabulary to respond in writing to the prompts.

Student prompt: You are being challenged to design your dream vacation home. I'm going to ask the following questions and give you time to write or sketch your answers on the blank paper that I provided. Please keep these notes - they will be turned in with your assignment when we are finished (these questions can be completed in the target language):

1. Where would you want your dream vacation house to be located and why? (provide key vocabulary in the target language here; Also, provide a visual of a country or globe so students can select regions; (Key vocabulary: see above).
2. What kind of rooms will your dream vacation house need? List all of the rooms that you'd like for your vacation house to have?

Remember: Frank Lloyd Wright combined several rooms together to create Fallingwater's living room. At Fallingwater, the living room is a dining room, a sitting room, a study, and a music listening/entertainment room. (key vocabulary: see above)

3. What kinds of colors, textures, and patterns will you use in the design of your dream vacation house, and why?

Remember: Wright took colors, textures, and patterns from the surrounding landscape when he designed Fallingwater. (Key vocabulary: see above lists)

4. Are there any special features that your dream vacation house will need to have?

Remember: Wright learned that the Kaufmann family liked to spend time outdoors, entertain friends, and have quiet time for reading and relaxing when he created the design for Fallingwater. The hatch/steps to the stream were a custom feature for the Kaufmann family. For example, would you want a tennis court or a swimming pool? A game room or a movie theater? A garden or a tree house? A pond with fish or a lake? (Key vocabulary: see above lists)

- Time to Sketch

1. Please take a moment to sketch your ideas for your Dream Vacation House. Remember: Sketches do not need to be perfect. As long as you can understand what your sketch represents, then it's a successful sketch. Sketching is a form of taking notes and these sketches are for you only - no need to share them with others unless you want to.

Day 4: Introduction to Architectural Drawings

In order to design a work of architecture, architects like Wright create architectural drawings to convey their ideas. Today, we will view examples of architectural drawings and you will try your hand at three types of architectural drawings.

During this exercise, you will use a ruler to draw straight lines and to measure. Architects establish a **scale** when creating architectural drawings, so that they can convey the size of large structures on their small paper. We will use the scale $\frac{1}{4}$ inch = 1 foot, therefore 1 inch = 4 feet. If you were to draw a room that is 8 feet square, how long will the lines of your drawing need to be? (2 inches).

At a top or bottom of your paper for each drawing, please write the following:

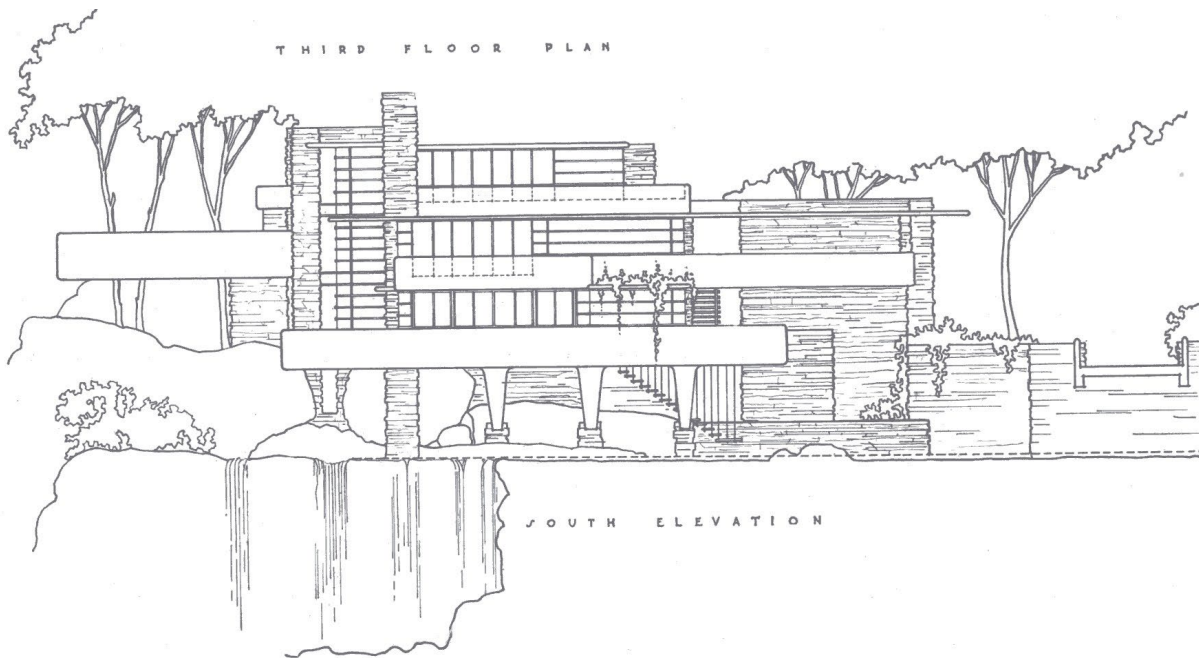
Dream Vacation House Design

Architect: (Student Name)

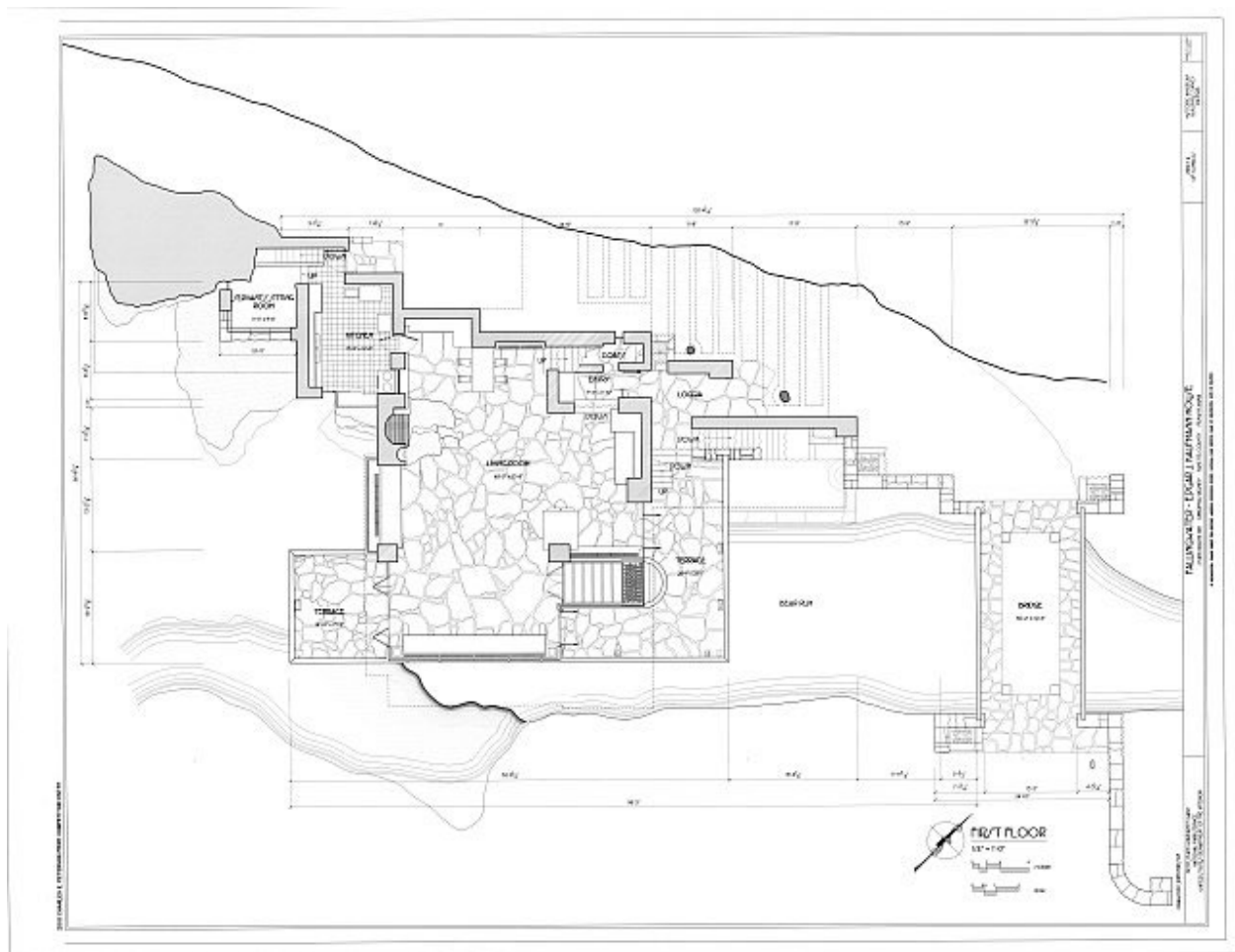
Location:

Scale: $\frac{1}{4}$ " = 1'

1. Elevations -- An **elevation** is a drawing of one side of a building. Below is the south elevation of Fallingwater (the side of the house that faces south). An elevation shows the placement of walls, windows, doors, terraces and anything else that's on one side of the building. **Important Note:** Elevation drawings look very flat. Architects do not try to make elevation drawings look three-dimensional. For example, in real life, the terraces stick out in different directions. On this elevation drawing, they look like flat rectangles.



2. Floor Plans – Reading a floor plan is similar to reading a map. Floor plans are drawn from **aerial view** or **birds-eye-view**, which is from above looking down. Usually, thick, black lines will show walls, while thinner lines can show windows or even furniture outlines. Below is a floor plan of the first floor of Fallingwater’s main house. This image is included in the PowerPoint presentation. (Key vocabulary: see above)



3. Sections (optional) -- A **section** is a drawing of one side of a house as if it was cut open, showing the inside, like a doll house. Sections are helpful for showing your ideas for interior design. They are a way to show the placement of furniture, artwork, etc. The section below shows the interior of Fallingwater's living room, including the red kettle that hangs next to the fireplace.

4. Which features of your dream vacation home are customized for your preferences and tastes?

Wrap-Up:

- Presentations: Students present their Dream Vacation House Designs
- Turn in Assignment: Students return the following to their teacher:
 1. Sketches/notes
 2. Floor plan
 3. Elevation
 4. Section (optional)
- Reflection: After turning in presentations and turning in assignment, ask the entire group the following reflection questions:
 1. What is one new thing that you learned while designing your dream vacation house?
 2. What did you enjoy about the process of designing a house?
 3. What was most challenging about the process of designing a house?

Optional Extension:

Step 1: With a peer, search [airbnb.com](https://www.airbnb.com) for a dream vacation home in your target culture

Step 2: Work with your partner to describe your dream home and to explain your selection using vocabulary above

Step 3: Present your selection to the group in the target language using [airbnb](https://www.airbnb.com) images and vocabulary from this lesson.
