

BUDGET A NEW BUILDING

GRADE: 6-8

TIME: One 45-minute session

Architect Frank Lloyd Wright strove to provide his clients with homes that fit within the budget of working families. He selected affordable materials that could be sourced locally to lower overall costs so that more of the budget could be devoted to detailed craftsmanship. During construction of most of Wright's homes, unexpected costs would arise, increasing the original budget. Wright's clients were nevertheless satisfied with their new homes. Students will learn about the many costs that factored into building Frank Lloyd Wright's works of architecture. Students will examine a budget for a Wright home which was published in a 1907 magazine, *Ladies Home Journal*, that advertises "A Fireproof House for \$5000." Students will convert the cost of the home into today's modern currency and will analyze Frank Lloyd Wright's proposed budget. Finally, students will create their own home designs, one with a budget higher than Wright's and one with a lower budget.

INTEGRATED SUBJECTS: Math, Visual Arts, Media Literacy

OBJECTIVES

MATERIALS | RESOURCES

Budgeting Worksheet (Appendix A)

Calculator

Paper

Pencil

"A Fireproof House for \$5000" article

(PDF attached in Appendix, available online at <https://hdl.handle.net/2027/mdp.39015013140838?urlappend=%3Bseq=352%3Bownerid=109669300-351>

or full text version available online at <https://www.antiquehomestyle.com/>

1. Introduce the work of Frank Lloyd Wright and his desire to build functional and affordable houses.
2. Examine a budget for Wright's home using a 1907 magazine advertisement.
3. Calculate the cost of Wright's home into today's currency.
4. Create designs that have a decreased and increased budget than Wright's budget listed in the article.

ESSENTIAL QUESTIONS

1. What design choices did Wright make to create an affordable budget for working families?
2. How have the needs for families changed the design of homes over the last century?
3. How can designs be adjusted to accommodate a lower or higher budget?

LESSON PROCEDURE

EXPLORE

- Introduce the work of Frank Lloyd Wright and highlight his use of concrete, steel and other affordable materials. Show examples of Wright's use of simple materials, as well as examples of detailed craftsmanship. For each photograph, ask students to identify what costs were needed in order to create the design. Encourage students to hypothesize what the most expensive and least expensive costs of each design would have been. (Images of Wright's work can be found at <https://www.teachingbydesign.org/multimedia/>.)
- Share "A Fireproof House for \$5000" article with students. Instruct students to examine the floorplans and illustrations before reading.
- Direct students to read the article, looking for ways Wright intended to keep costs low.
- After reading the article, lead a discussion of the following questions.
 1. What affordable materials did Wright intend to use?
 2. What features of a typical home did Wright omit so that he could lower costs?
 3. How did Wright plan for the home to withstand the different weather of four seasons?
 4. What did Wright say can be adjusted according to the potential client's needs?

ENGAGE

- Distribute the Budgeting Worksheet to students (see Appendix A). Tell students that \$1 in 1907 is equivalent to \$31.52 today (as of August 2022). Instruct students to list the 1907 construction costs in the table using the article.
- Then, have students convert the costs to today's currency to understand what those amounts would be today. (Tell students to assume the client is purchasing magnesite floors.)
 - Differentiation: Some students may have the option to use a calculator while others make these calculations with paper and pencil.
- Direct students to calculate what percentage of the budget is devoted to each part of the construction process.
- After completing the top section of the table, calculate Wright's pay. Assume the client asked for complete service and is paying Wright a 10% fee.
- Once all students have completed the table, compare answers using the answer key.
- Lead a discussion of the following questions:
 1. What are your reactions to the total budget?
 2. What category of construction has the largest budget? What category has the smallest budget?
 3. Can you see the distribution of the budget reflected in the final product?
 4. If you were the architect, what changes would you make to the design? Why?
 5. How would you adjust the design to fit the needs of a modern family?

DESIGN

- Instruct students to divide a piece of white printer paper in half. On the top half, sketch a floorplan of a home with a budget less than Wright's budget. On the bottom half, sketch a floorplan of a home with a budget more than Wright's budget.
 - Differentiation: Have students do this activity in small groups or as a whole class.
 - Differentiation: Challenge students by having them design a two-story or three-story house.

LESSON PROCEDURE (*continued*)

CRITIQUE & INTERPRET

- **Have students share their floorplan designs with a classmate or small group.**
- **Finally, lead a discussion using the questions below.**
 1. What is a change your classmate made to their design to decrease costs?
 2. What is a change your classmate made to their design to increase costs?
 3. What is your favorite part of your design?
 4. What did you eliminate from the original design? What did you add?
 5. Do your designs address the needs of a modern family? How?
 6. How would you update your design to better fit the needs of a modern family?

BUDGETING WORKSHEET

CONSTRUCTION CATEGORY	1907 CONSTRUCTION COST	2022 CONSTRUCTION COST (1907 \$1 = 2022 \$31.52)	PERCENTAGE OF TOTAL COST
Concrete construction, masonry and plastering			
Carpentry, millwork, sash-door and screen, labor and trimming			
Wiring			
Painting and glazing			
Hardware			
Magnesite floors			
TOTAL CONSTRUCTION COST			100%
Architect's Pay			10% fee
TOTAL BUDGET			Total Construction Cost + Architect's Pay