



# Cost Analysis

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RET is funded by the National Science Foundation, grant # EEC 0808696.

## Unit Overview

**Topic:** Finding areas of different shapes

**Standards:**

Mathematical computations, scaling, analyzing data, problem solving, communicating information and designing solutions

## Activity Structure

**Title:** Cost Analysis

**Guiding Questions:**

- 1) What does a civil engineer have to do with construction?
- 2) What is the process of building a new building
- 3) How much does it cost to build a performing arts theater?

**Objectives:**

- 1) Design a performing arts theater
- 2) Calculate the area and cost of each room's flooring system

## Activity Implementation

Day 1:

- 1) Give a brief overview of civil engineering
- 2) Hand out necessary papers
- 3) Explain their task of designing a performing arts theater floor plan
- 4) Let them create a list on the board of what the required rooms should entail
- 5) Assign partners

Day 2:

- 1) Review area formulas
- 2) Do an example of finding an area and calculating the cost to floor that area
- 3) Pass out a costing sheet of different types of flooring
- 4) The students assign which flooring they want in each room and calculate how much it would cost

## Engineering Design Process

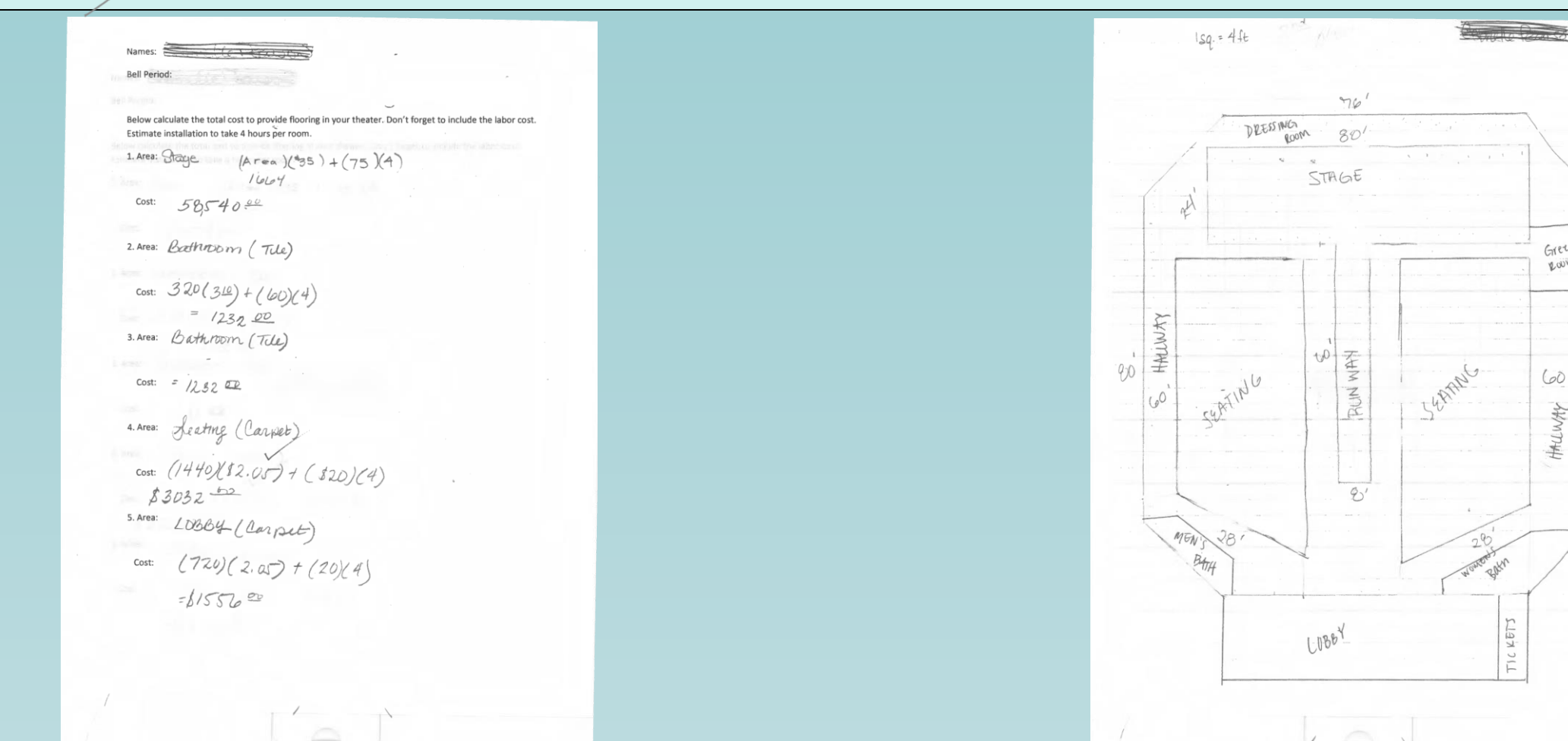
Describe how the activity or activities that incorporated the engineering design process, if applicable. Include a picture if available.



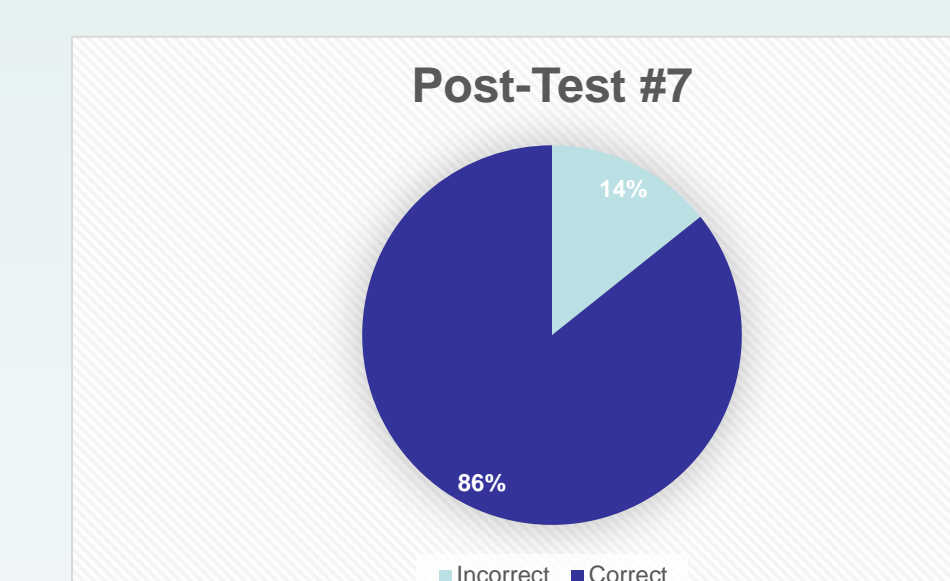
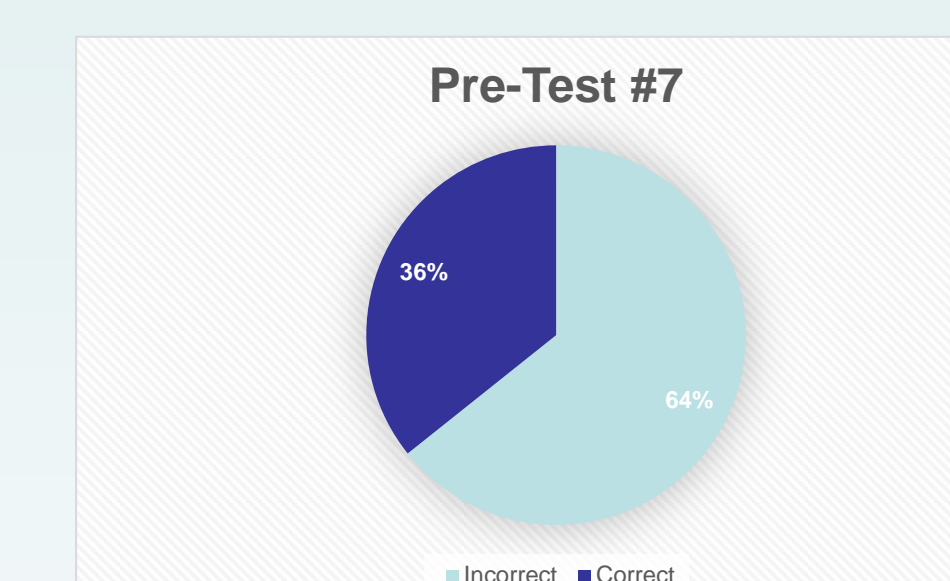
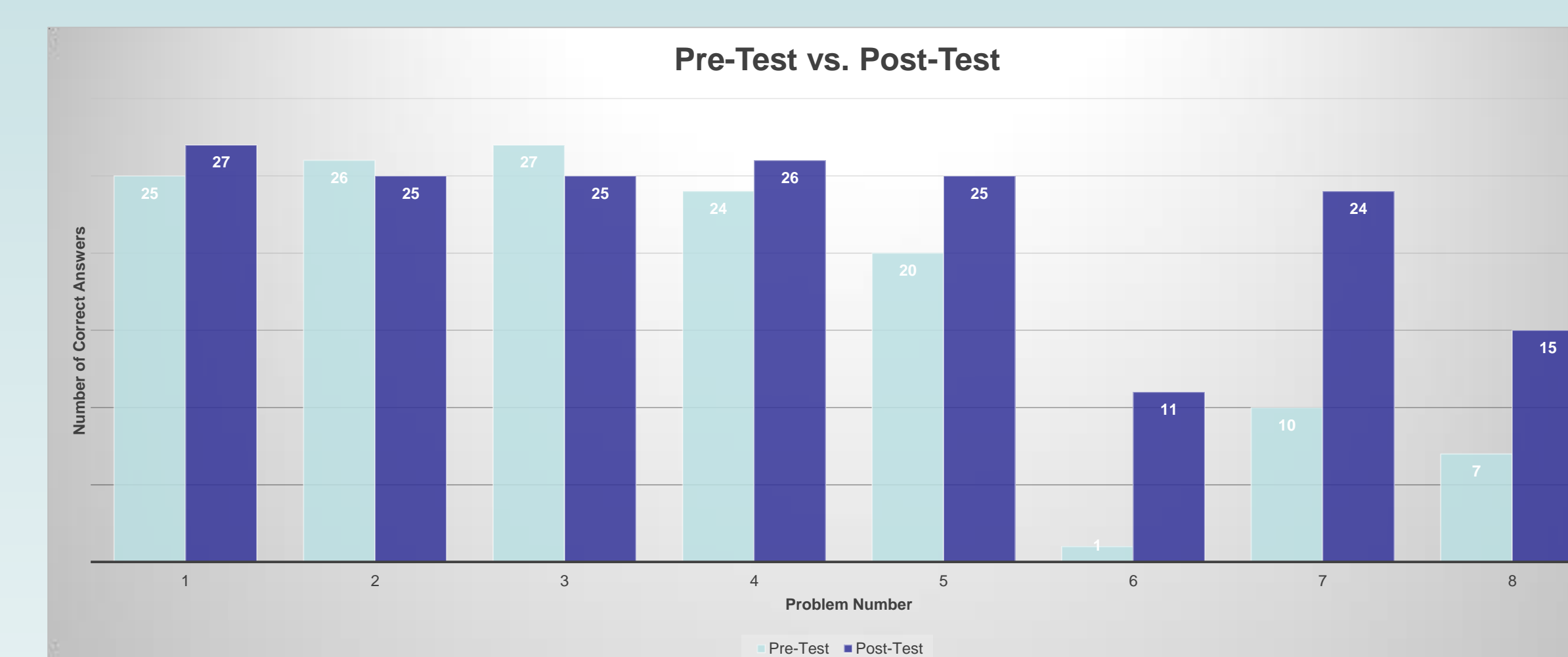
**ACS:** How did you incorporate ACS into your Activity?

This activity forced students to examine the practical aspect of designing a floor plan and then make the necessary changes in order to create a realistic theater. It also included computations a civil engineer would perform in reality.

## Student Work



## Assessment Results: Impact on Student Learning



## Reflection and Conclusion

I would have altered the way I explained civil engineering in order to relate to the students more.

The kids seemed to have fun doing the activity and it was great seeing how each group made their theater personal and different from the rest.