

## Overview

Construction Design is a hands-on activity to help students learn about some of the work related to the Industrial, Manufacturing, and Engineering Systems career field. One of the objectives of the activity is to provide the opportunity for students to do work tasks and then to reflect upon those tasks. The exploration activity is set up to be completed in one class period. The activity could be used to introduce the career field.

## Standards

### School Counseling

- K-12.3.1 Identify values, attitudes, and beliefs.
- K-12.1.1 Develop an awareness of personal abilities, skills, interests, and motivations.
- K-12.1.2 Identify personal skills, interests, and abilities and relate them to current career choices.
- K-12.1.3 Identify personal preferences and interests which influence career choices and success.
- K-12.1.3 Demonstrate how interests, abilities, and achievement relate to achieving career goals.

### Mathematics

- 8.3.1 Select measurement tools and measure quantities for perimeter.

## Materials and Supplies

<UL>

Floor plans for houses that include scale to determine actual distance. Builders may have floor plans available or lumber yards have books with floor plans. The teacher in charge of the construction program may have sample floor plans. Or, the following websites provide printable floor plans.

<http://www.eplans.com/>

<http://www.coolhouseplans.com/index.html>

<http://www.weinmaster.com/>

Rulers

</UL>

## Instructions for Educators

1. This activity could be coordinated with teachers of family and consumer science, construction, drafting and/or mathematics.
2. Guest speakers for the unit might include architects, builders, drafters, etc.
3. Have the students read the information in “Learn about Industrial, Manufacturing, and Engineering” before or after the “Floor Plan” activity.
4. Have the students complete the construction design activity.
5. Once the construction designs are completed, have them do “Thinking about Construction Design”.
6. Discuss how interest, abilities, and skills are related to career options and choices.
7. Have the students/clients save the “Construction Design” activity in the career portfolios.
8. An optional activity is to have the students/clients, who are interested in this career field, explore occupations related to this activity or the Industrial Manufacturing and Engineering Systems field.

## Construction Design

Floor plans for homes usually include the location of the sink, stove, and refrigerator in the kitchen. The walking path connecting each of these is called the work triangle of the kitchen. It is recommended that the perimeter of the work triangle not be greater than 22 feet.

<UL>

Draw the work triangle in each floor plan.

Determine the perimeter of the work triangle.

Use the scale to find the actual walking distance of the work triangle.

Based on this information, determine which house or houses have the most efficient kitchen.

</UL>

## Thinking about Construction Design

1. This was a challenging activity.  Yes  No

2. This was an enjoyable activity.  Yes  No

3. This activity helped me understand what I am good at and not so good at.  Yes  No

4. This activity helped me think about doing construction work.  Yes  No

5. What did you specifically like or dislike about this activity?

6. Would you be interested in designing homes and other buildings? Reading blueprints to direct construction? Doing interior design?  Yes  No

Explain why you are interested or not interested in these options.

Name

Date

Save these thoughts in your career portfolio. In the future, review your responses and consider if your interests and preferences have changed. Do you still have the same attitude about the construction design project? What has stayed the same or changed and why?