

**Title:** Tower Building with Manufacturing Variables

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**Externship Business:** [Systems Control](#)

**Overview / Description:**

In this lesson, students will build towers out of notecards with a manufacturing twist to simulate real-life situations that can happen in industry.

**Subject(s):**

Life Skills / Job Skills / Academic and Career Planning

**Grade Level(s):**

Grades 6-12

**Learning goals/objectives:**

*After completing this activity, students should be able to:*

- understand what PDCA is and how it applies to school and work life
- understand that people who work in industry have to employ problem solving skills
- understand that adjustments need to be made in work and school life and how to deal with those problems/situations

**Type of Activity:**

- Individual
- Small Group
- Whole Class

**Teaching Strategies:**

- Discussion
- Partner work
- Use of Technology
- Role Playing
- Simulation
- Performance Assessment

## **Content Standards**

### **Model Academic Standards for School Counseling**

#### Academic Development Domain

**Content Standard C:** Students will understand the relationship of academics to the world of work, and to life at home and in the community.

- Core Performance Standard 1: Understand how to relate school to life experiences.

#### Personal/Social Development Domain

**Content Standard E:** Students will make decisions, set goals, and take necessary action to achieve goals.

- Core Performance Standard 1: Apply self-knowledge in the decision-making or goal setting process.

**Length of Time and length of class periods:** 1 class period (30-50 minutes)

### **Materials List:**

- 40 note cards per group
- 1 die per group
- [Tower Building Directions](#) (pdf)

### **Directions (Step-by-Step):**

1. Show the PDCA slide in the [Tower Building Directions](#) pdf and discuss what PDCA is and how it applies to working in manufacturing or any other field. Ask students how PDCA can apply to school as well and have a discussion.
2. Randomly split students into teams of 2.
3. Show the rules page and begin. Students will have 4-6 minutes to build the tallest tower out of note cards using 40 cards. Cards can be folded or ripped, but no other tools may be used. The tallest tower is the winner and will get a prize. Part way through the game, time will stop and a manufacturing variable will be added to each group.
4. Show the manufacturing variable slide after 3 minutes. Each team will roll a die and that scenario, according to the manufacturing slides, will be added to that group. These scenarios may help or hurt each group's tower construction. Finish the remaining time and determine a winner. Be sure to remind students to use PDCA in their construction.
5. Discuss which methods worked best for tower building and which didn't by having each group report. Repeat the tower-building activity if time allows because students will refine their methods based on student discussion and use more PDCA.

### **Wrap-Up:**

As a group, discuss how this scenario uses PDCA and applies to the real-world. Ask how the manufacturing variable helped or hurt their tower. Ask how this may be applied to school life, sports, and homework.

### **Formative/Summative Assessment:**

- This activity could be used as formative or summative assessment, depending upon when in a life skills/job skills/ACP unit it occurs. The teacher will assess students based on their ability to build their towers using problem-solving skills.
- You will also assess students' ability to cope with a manufacturing variable using observation, small-group discussion, and whole-class discussion.

### **Extension Activity for differentiation:**

- Cards can be added or taken away for each group depending on developmental level.
- Time may be added or taken away depending on the developmental level.
- Students in upper grade levels who have had work experience may journal about problems they've dealt with at work and how they solved those problems. Additionally, students may journal about problems they've encountered in school and how they solved those problems.
- Invite a representative from a local manufacturing business who may share experiences similar to this one and how those problems were solved in the industry.

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