

**Title:** Problem Solving using the A3 Model

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

**Overview / Description:**

Students will solve a personal problem using the A3 model after discussing the decision making and problem solving process.

**Subject(s):**

Life Skills / Job Skills / Academic and Career Planning, Science

**Grade Level(s):**

Grades 8-12

**Learning goals/objectives:**

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

- identify the steps of problem solving and decision making
- understand how using the A3 model can be used in their personal lives
- understand that problem solving is an important soft skill that employers look for

**Type of Activity:**

- ✓ Individual
- ✓ Whole Class (instructional time)

**Teaching Strategies:**

- ✓ Class Discussion
- ✓ Use of Technology: if using a computer for the A3 model
- ✓ Simulation
- ✓ Goal Setting
- ✓ Inquiry Learning

**Content Standards:**

Wisconsin 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.

**Content Standard F:** Students will use safety and wellness skills.

- Core Performance Standard 1: Acquire and demonstrate self-management and responsibility for health promoting behavior.

#### **Length of Time and length of class periods:**

1-2 weeks

#### **Materials List (linked if online resource please):**

- [A3 Template Model](#)
- An example of a problem using the A3 model
- [Decision Making & Problem Solving PowerPoint](#)

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

1. Introduce the lesson by asking which car manufacturing company is most profitable. (The answer is Toyota). Ask students why they think Toyota is the most profitable car company in the world. (Toyota makes about \$2800 per vehicle sold, Ford makes about \$950 per vehicle). Ask the students why they think Toyota makes the most profit per vehicle and is the most profitable. (Explain that Toyota uses an efficiency model called LEAN and does problem solving using A3).
2. Discuss and show slides on decision making and problem solving. Emphasize the importance of problem solving in the workplace and why employers value this life skill. Ask students how decision making and problem solving currently impacts their life at this time in school or outside of school. Included in the discussion are the mini activities embedded in the slide deck, including where to eat for lunch, videos, and the Toyota article:
  - <https://www.khanacademy.org/science/health-and-medicine/executive-systems-of-the-brain/cognition-lesson/v/decision-making>
  - <https://www.khanacademy.org/science/health-and-medicine/executive-systems-of-the-brain/cognition-lesson/v/problem-solving>
  - <https://sloanreview.mit.edu/article/toyotas-secret-the-a3-report/>
3. Introduce the A3 model and walk through the steps of the [A3 Template Model](#). Show an example of an A3 template.
4. Have each student brainstorm a problem that they are facing in their life that they would like to investigate and solve using the A3 model. You may have to cite some examples that are acceptable to use such as: buying a car, cleaning my room, asking for a raise/more allowance,

etc. Students will select one problem to focus on. You should check with each student to make sure each problem is acceptable and manageable for the A3 model.

5. Students will work on their A3 model over the next several class periods. They will have to identify conditions outside of class that apply to their problem, and using data is recommended if possible. Meet with students to ensure that they are on target for completing their A3 and answer questions they may have. Set a due date for their rough draft and assess each rough draft. Then set a due date for the final A3 product.
6. On the due date, students will do a small-group share consisting of about 3 students per group. Students will meet with that group and will share their A3 model of the problem they have identified and have solved. The A3 model will then be turned in and graded.

### **Wrap-Up:**

After students have shared their A3 in their small group, close the lesson by discussing the importance of problem solving and decision making on a personal level and at the business level. Discuss with students that problem solving is an important soft skill that employers look for in their employees.

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

- Formative Assessment - You will assess students during the A3 process by meeting one on one with each student to ensure that their problem is appropriate for the A3 model and to ensure that they are meeting the expectations for the A3 model. Be sure students are on track to meet the deadlines for their rough draft and the final A3 product.
- Summative Assessment - The final A3 products will be assessed as a form of summative assessment.

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

- Follow-up on each student's problem from their A3 model after a few weeks to determine if their problems have been solved. They can write a reflection of their A3 model.
- You can add a problem-solving activity during the PowerPoint discussion when talking about the problem solving process
- Invite a representative from a local manufacturing business that may share experiences of problem solving in the company or a company that uses the A3 model
- The A3 model could be used in alignment with ACP if you apply it to career selection or college selection
- Problems for the A3 model could be discussed with parents, and students could write a short paragraph about how that conversation went

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