

# Problem-Solving



*Disciplined. Detects warning signs, uncovers causes, assesses alternatives, and uses decision-making tools.*

Seek opportunities where you can...

- 1 Identify the true nature of a problem.
- 2 Recall previously learned information that is relevant to the problem.
- 3 Locate and obtain information relevant to understanding the problem by using all available reference systems.
- 4 Take corrective action to address a problem within appropriate parameters of your role.
- 5 Evaluate the merits of potential solutions; recommend the best option.
- 6 Observe and evaluate the outcomes of implementing a solution to assess the need for alternative approaches, and identify lessons learned.
- 7 Anticipate problems by monitoring patterns and trends.

## Topics for Class Discussion

- ⦿ How many decisions do you make in a day?
- ⦿ How do you make a decision?
- ⦿ What is a good decision?
- ⦿ Describe how you recently made a good decision. What was the process? (Strategies include Random, Gut Feel, Logical, and Process of Elimination.)

### Problem-Solving Strategies

- Draw a diagram, look for patterns
- Make a list
- Trial and error
- Divide and conquer
- Work the problem backwards

“Every problem is an opportunity in disguise.”  
 John Adams

### Problem-Solving Methodologies/Tools

- Define the problem by writing a problem statement
- Understand the current state
- Find root cause
  - 5 Whys / Fishbone (Ishikawa Diagram)
  - 6 M’s: Manpower, Method, Machine, Material, Measurement and Mother Nature
- Choose a solution
- Implement solution (one at a time)
- “Was the problem resolved?”
  - If yes: Communicate findings and train others as needed.
  - If no: Go back to the root cause tools.



**What is your risk tolerance in decision making?**

This will impact your decision!

### “Proactive vs. Reactive”

- What does it mean to be proactive vs. reactive?
  - Proactive:* Doing the upfront work to determine if a process is reliable (This takes time, effort, and resources.)
  - Reactive:* Handling problems as they arise (This is the approach a lot of organizations take.)
- Most of the information gathered in a reactive state is lost. The problem will continue to arise.



[What is Critical Thinking?](#)

### SCENARIO

It’s the end of the month and a “hot” part is being delayed at Machine 5. The operator calls her supervisor, who calls his manager. They call in support from quality, logistics, engineering, and supply chain. They all determine the “issue” and what can be done to fix the problem. The part is corrected and shipped. The next day, all those involved in getting the part shipped are praised at the morning meeting and kudos were shared via email. A week later, Machine 5 is making bad parts again. *What do you think will happen? What do you think should happen?*

