Recognize a Problem

List Concerns
to make them visible.

- What problems do we have to solve?
- What choices do we need to make?
- What actions do we have to take?
- What bothers us?

Separate and Clarify
to work on one concern at a time.

- What do we mean by...?
- What specific thing…?
- How do we know…?

Set Priority
to choose which concern to work on first.

- How serious is this concern?
- Which concern is most serious?
- When would resolution become difficult, expensive, impossible, or pointless?
- Which concern is most urgent?
- What happens if we do nothing?
- Which concern is growing most?

Plan Next Steps
to ensure effective and efficient use of process.

- Do we have a deviation?
- Is cause unknown?
- Do we need to know cause?
- Do we need to make a choice?
- Do we have an action or plan to protect?
- If still unclear, separate and clarify further.

Concern *A feeling that we need to do something….*

Problem *We have a problem when:*

There is a deviation between what should be happening and the actual situation, and
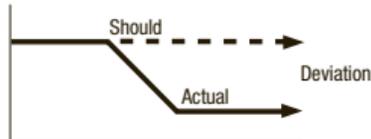
Cause is unknown, and

We need to know cause to take effective action.

Fix *Action to remove the cause.*

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Describe the Problem

State the Problem

to help stay on track.

- What thing or group of things (object) has the problem?
- What problem (defect) does it have?

Specify the Problem

to get a full, accurate description of the problem.
(See the IS and IS NOT questions on the back.)

Develop Possible Causes

from Knowledge and Experience, or…

from Differences and Changes

to create statements for testing against the facts.

- What is different, odd, unusual, or distinctive about each IS compared to each IS NOT? What else…?
- What has changed in, on, around, or about each Difference? (Include the date and time of each Change.) What else…?
- How could these Differences and Changes have caused the problem?

Prove the True Cause

Test Possible Causes

to eliminate causes that do not make sense.

- If ___ is the cause of ___, how does it explain both the IS and the IS NOT?

Identify the Most Probable Cause

to pick the possible cause to verify first.

- Which of the possible causes is the most believable?

Verify the True Cause

to avoid unnecessary fixes.

To identify steps to take, use:

- Facts—How can we check the assumptions?
- Observation—How can we look at the cause?
- Research—How can we experiment to test this cause?
- Results—How can we try our fix to see if it works?

	IS	**IS NOT**
WHAT	What *thing or group of things* is having the *problem*? What is wrong with it or them?	What *thing or group of things* could be having the *problem*, but is not? What could be wrong with *it or them*, but is not?
WHERE	Where, geographically, is the *thing* when the *problem* is noticed? Where is the *problem* located on the *thing*?	Where could the *thing* be when the *problem* is noticed, but is not? Where could the *problem* be located on the *thing*, but is not?
WHEN	When was the *problem* first noticed? (date, time) When has the *problem* been noticed since then? (date, time) Any pattern? When, in the history or life cycle of the *thing,* was the *problem* first noticed?	When could the *problem* have been first noticed, but was not? (date, time) When could the *problem* have been noticed since then, but was not? (date, time) When, in the history or life cycle of the *thing*, could the *problem* have been first noticed, but was not?
EXTENT	How many units of the *thing* have the *problem*? What is the size of a single *defect*? How many flaws or *defects* are on any one unit? What is the trend? (…in the *object*?) (…in the *defect*?)	How many units of the *thing* could have the *problem*, but do not? What other size could a *defect* be, but is not? How many flaws or *defects* could be on any one unit, but are not? What could the trend be, but is not?

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Consider Objectives
State the Decision
to keep decision makers on track.
- What choice do we need to make?
- What are we trying to do? (Include choice word, result, and key modifiers.)

Develop Objectives
to help evaluate alternatives fairly.
- What results do we want?
- What resources should we use or save?
- What restrictions do we have? (Law, regulation, policy….)

Classify Objectives into MUSTs or WANTs
to be clear about what is mandatory and what is desired.

Is this objective:
- Mandatory (required)?
- Measurable (set limit)?
- Realistic (can the limit be met)?

Yes to all three equals a MUST.
All others are WANTs.
Identify the most important WANT objectives.

Consider Alternatives
Develop Alternatives
to expand the number of choices and increase the chances of picking a winner.
- What choices do we have?
- How would we meet our most important objectives?

Evaluate the Alternatives
to compare performance of possible choices.

How well does each alternative satisfy the objectives?
- Is this MUST satisfied by each alternative?
- How is this WANT satisfied by each alternative?
- Which alternative performs best against this WANT?

Consider Risks
Identify Risks
to understand the risk of choosing an alternative.
- If we choose this alternative, what could go wrong?

Make Decision
to commit to a choice.
- Are we willing to accept the risk(s) to gain the benefits of this choice?

Identify Potential Problems

State the Action
to make what we will do clear and visible.

What do we need to do?
What fix do we need to make?

List Potential Problems
to anticipate and prepare for future problems.

If we do this, what could go wrong?
What problems could this fix cause?

Identify Likely Causes

to help prevent or reduce the threat.

What could cause this potential problem?
What else…?

Take Preventive Action

to reduce the chances of the likely cause occurring.

What can we do to prevent this likely cause from happening?
How can we make this likely cause less likely?

Plan Contingent Action and Set Triggers

Plan Contingent Action and...
to limit the damage if something does go wrong.

What will we do if the potential problem happens anyway?
What will minimize the effects if this happens?

Set Triggers
to start the contingent action at the proper time.

How will we know the potential problem has occurred?
What will cause the contingent action to start?

Potential Problems → Likely Causes → Preventive Action → Contingent Action and Triggers

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Extend the Cause

What other damage could this cause create?
Where else could the cause create problems?
What caused the cause?

Extend the Fix

What identical things need the same fix?
What problems could this fix cause?