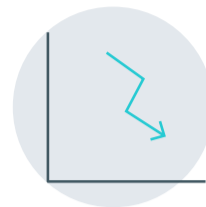You would use this approach to solve any problem by identifying the Root Cause and taking Action.

Projected performance gains

Improved
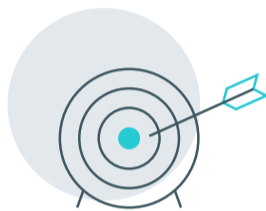- Problems are solved at root cause level
- Process to solve problems

Reduced
- Time wasted dealing with recurring problems

What investment is needed to understand the concept?

DIFFICULTY

Medium

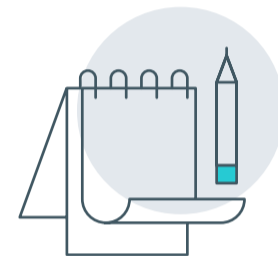Although this takes effort and discipline, it ultimately speeds the process of solving problems.

ACTIVITY

Individual or Team

This approach is more effective when a wider group of people are involved.
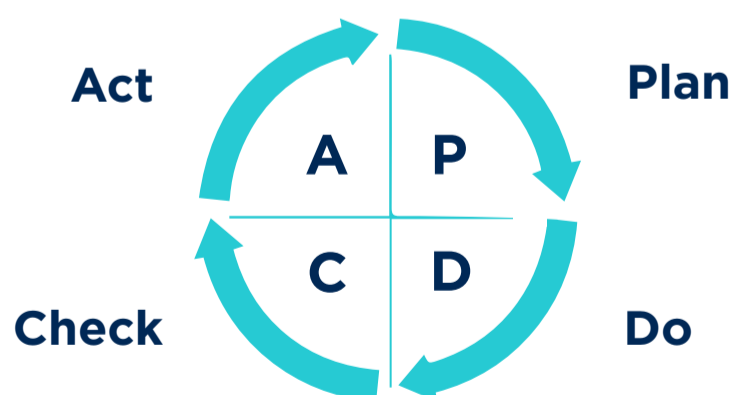
EQUIPMENT

None

Explanation of the concept

Enabling teams and individuals to solve problems is critical to continuous improvement.

Plan, Do, Check, Act model
This is the simplest approach to problem solving.

Act | **Plan**
A | P
C | D
Check | **Do**

Plan by fulling investigating and understanding the problem and its cause

Do by identifying and implementing improvement actions

Check that the actions have been effective

Act to Adopt, Adapt or Abandon the course of action, and go through the PDCA cycle again.

**Understanding the problem**
Investigating and understanding the problem can typically take the following steps:

a. Define the problem
   i.   What, When, Where and How much?
   ii. What is the impact on the business?

b. Containment
   i.   What actions do we need to take now to protect the customer
   ii. Isolate the problem and put contingency actions in place until the root cause is found

c. Investigate
  i. Go to see and learn at the work place where the problem occurs
  ii. Create some sort of Process Map
  iii. Gather data

d. Identify Possible Causes
  i. Construct a Cause and Effect Diagram ("Fishbone")
  ii. Think widely of possible causes, using the categories of Man, Machine, Method, Materials and Environment.

Cause and Effect diagram – example
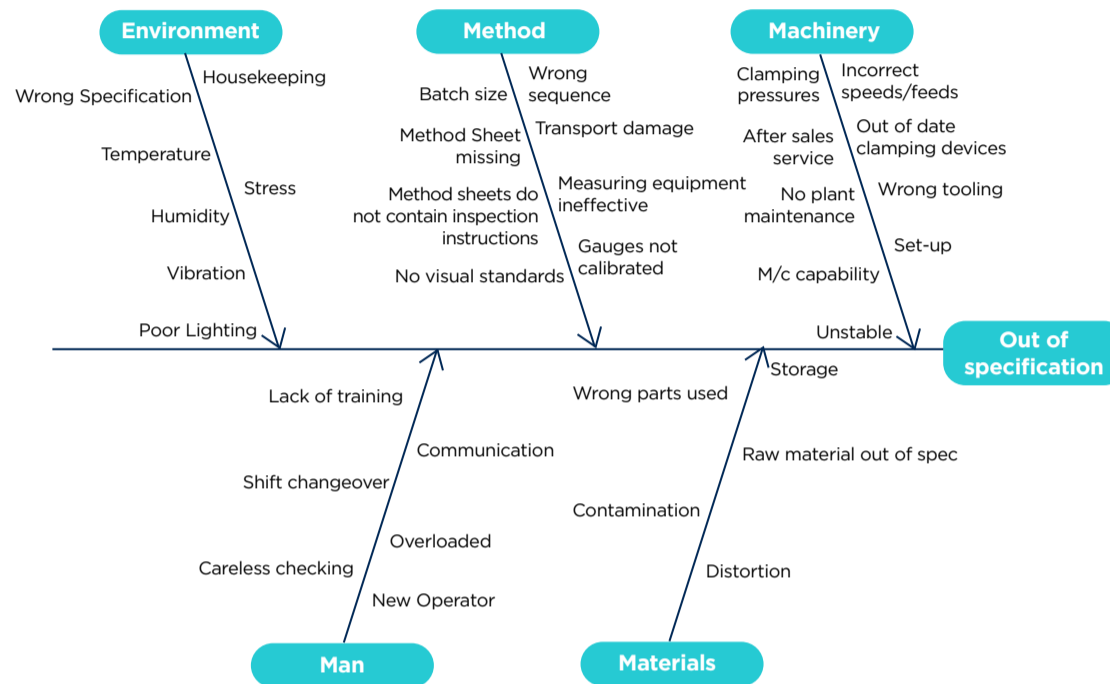

e. Identify Most Likely Causes
  i. Investigate each possible cause on the fishbone diagram to understand if there was a difference between the expected condition and the actual condition
  ii. Use this to identify the most likely causes.

f. Drill down to the Root Causes
  iii. Ask "Why" repeatedly (about 5 times) in order to get to the root cause.
  iv. Note: make sure that you have evidence for the answer that you come up with, before going on to the next why.
  v. This is a thinking process, not a short cut or "slot machine" answer.

Problem: Machine has stopped		
Why?	**Answer**	**Evidence?**
#1 Why has the machine stopped?	Overload Tripped	✓
#2 Why has the overload tripped?	Insufficient lubrication	✓
#3 Why insufficient lubrication?	Not carried out to schedule	✓
#4 Why was lubrication not carried out to schedule?	Because the technician was on holiday and there was no back-up	✓
#5 Why no back up cover for lubrication?	…?	?

g. Identify and Implement Actions
  a. Take actions to correct the root causes.

h. Follow up
  b. Check to see that the actions have been effective.

i. Review and share learnings

What action should I take?
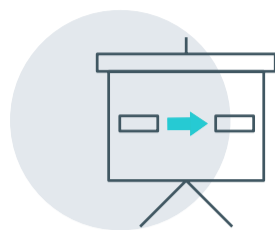
1

Practice using the process and the tools described above. Use the template at the end of this factsheet to help you.

2

Key individuals will need some briefing or training

3

Use a mixture of people in the team for the best results

4

Set realistic expectations – pick relatively small problems to practise the process, not the toughest longstanding issues.

5

Consider coaching for this activity – it can really help.

The template at the end of this document can be used to help you with this process. Print the template in A3.
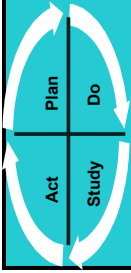
Recommended reading

Bicheno, J. (2004). *The New Lean Toolbox*. Picsie Books.
 ISBN 0 9541 2441 3

Shook, J. (2008). *Managing to Learn.* Lean Enterprise Institute.
ISBN 978-19310920-5

Business Growth Hub

European Union
European Regional Development Fund

PRACTICAL PROBLEM SOLVING - STRUCTURED A3 INVESTIGATION AND FEEDBACK REPORT

Business Growth Hub

PDCA cycle: Act | Plan | Study | Do

Defect Information

RCA Leader	
Product	
Batch Number (if applicable)	
Date	
Site	
Line	
Equipment	
RCA ref. number	

Team Members:

Study the Situation

What is the problem?

Why is this a problem? How does it deviate from normal?

Short term Containment

How?

Where?

Who?

When?

Short Term Containment Implemented (Y/N):
Briefed out (date):

Training Record collected (Y/N):   Signature:

Goal Statement

We Will?	By When?
How much?	What benefit?

Study – 5 why analysis

	1 potential cause	2 potential cause	3 potential cause	4 potential cause	5 potential cause
	Why?	Why?	Why?	Why?	Why?
	Why?	Why?	Why?	Why?	Why?
	Why?	Why?	Why?	Why?	Why?
	Why?	Why?	Why?	Why?	Why?
	Why?	Why?	Why?	Why?	Why?

Do – Action Plan to test your theory

Action	Who	When	Action	Who	When	Action	Who	When	Action	Who	When	Action	Who	When

Study – Brainstorm Possible Causes

Manpower | Machine | Material | Method | Environment

Problem

What are the potential causes that the team want to progress first? (can be determined by voting.

Potential Cause	
Prioritisation - use suitable criteria, e.g. voting, benefit, risk, cost, etc.	

Study outcome – (data, training, etc.):

Adapt / Adopt / Abandon?

What Controls are in place to prevent reoccurrence?

Communicate the outcome

Recognition ?