Business Growth Hub

17 Factsheet

Problem Solving

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

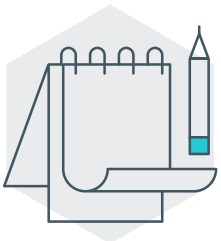
Although this takes effort and discipline, it ultimately speeds the process of solving problems.

ACTIVITY

Individual or Team

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

EQUIPMENT



Stationery

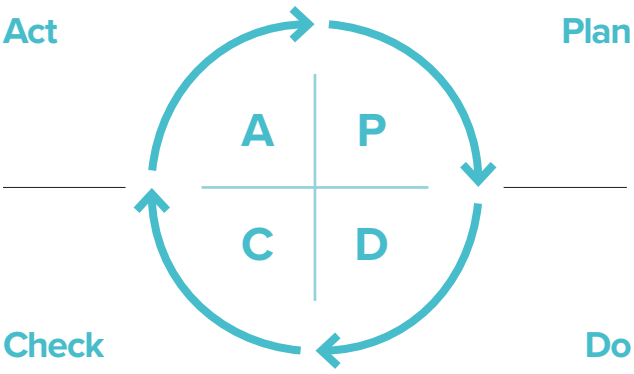
A3 paper to print templates.

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.



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

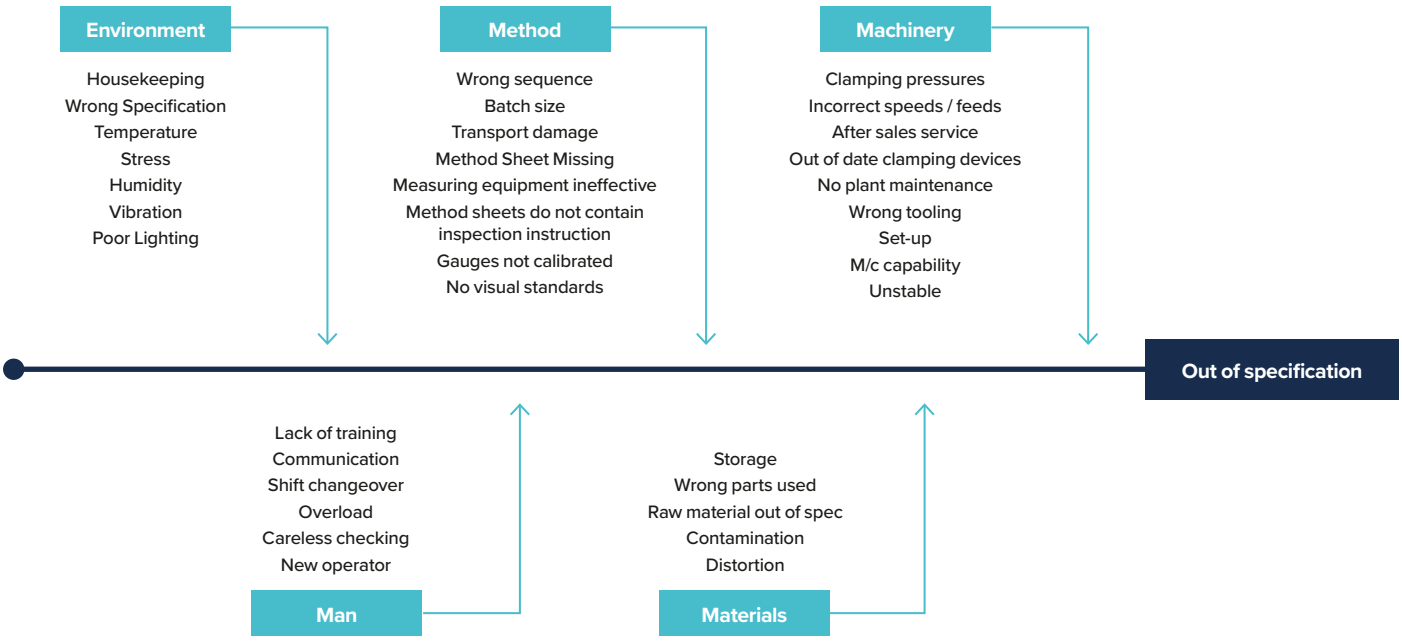
iii. Gather data

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



Explanation of the concept

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

i. Ask "Why" repeatedly (about 5 times) in order to get to the root cause. (Use the Root Cause analysis template accompanying this factsheet).

ii. Note: make sure that you have evidence for the answer that you come up with, before going on to the next why.

iii. This is a thinking process, not a short cut or "slot machine" answer.

g. Identify and Implement Actions

i. Take actions to correct the root causes.

h. Follow up

i. Check to see that the actions have been effective.

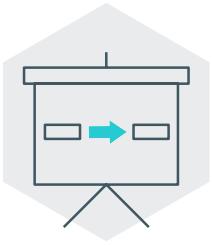
i. Review and share learnings

Drill down to the Root Causes example

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 backup	✓
#5 Why no back up cover for lubrication?	...?	?

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.

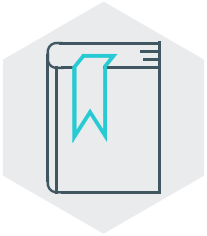
Set realistic expectations – pick relatively small problems to practise the process, not the toughest longstanding issues.

5.

Consider coaching for this and Hub advisors can help you with this. activity – it can really help

Use the Problem Solving template accompanying this factsheet to do this activity.

Recommended resources

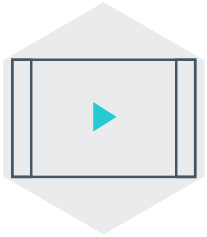


Bicheno, J. (2004). The New Lean Toolbox. Picsie Books.
ISBN: 0 9541 2441 3

Kahneman, D. (2012). Thinking Fast and Slow. Penguin.
ISBN-10: 0141033576, ISBN-13: 978-0141033570

Rother, M. (2009). Toyota Kata: Managing People for Improvement, Adaptiveness and Superior Results. McGraw-Hill Education.
ISBN-10: 0071635238; ISBN-13: 978-0071635233

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



5 Whys Problem Solving - Lean Enterprise Institute:
https://www.youtube.com/watch?v=SrlYkx41wEE

GC Business Growth Hub Factsheet 40: Developing People - this factsheet looks at coaching methods

Glossary

Continuous Improvement: The ongoing effort to improve products, services and processes within an operation by measuring and reviewing performance.

Business Growth Hub
European Union
European Regional Development Fund
In partnership with NORTHERN POWERHOUSE
GMCA GREATER MANCHESTER COMBINED AUTHORITY
Greater Manchester Local Enterprise Partnership

PRACTICAL PROBLEM SOLVING - STRUCTURED A3
INVESTIGATION AND FEEDBACK REPORT

Act Plan Study Do

Defect Information

RCA Leader		Team Members:	
Product		What is the problem?	Why is this a problem? How does it deviate from normal?
Batch Number (if applicable)			
Date			
Site			
Line			
Equipment			
RCA ref. number			

Short term Containment

How?	Who?
Where?	When?

Short Term Containment Implemented (Y/N):

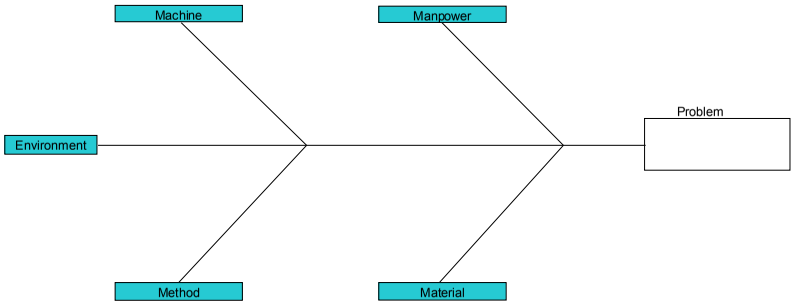
Briefed out (date): | Training Record collected (Y/N): | Signature:

Study the Situation

Goal Statement

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

Study - Brainstorm Possible Causes



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 - 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 outcome - (data, training, etc.)

Adapt / Adopt / Abandon?

What Controls are in place to prevent reoccurrence?

Communicate the outcome

Recognition ?