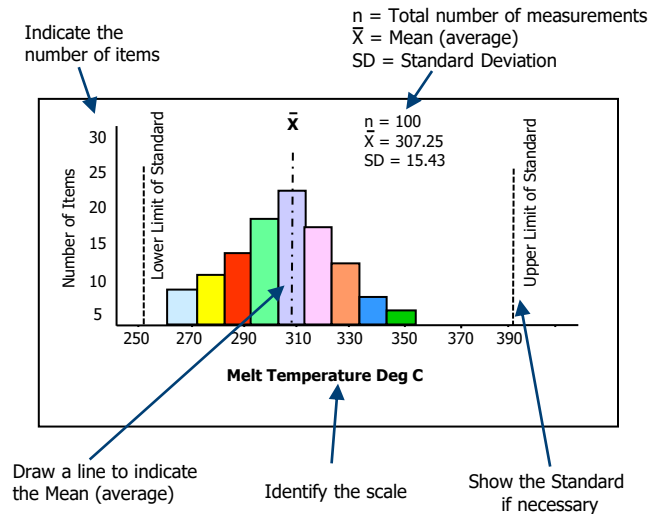
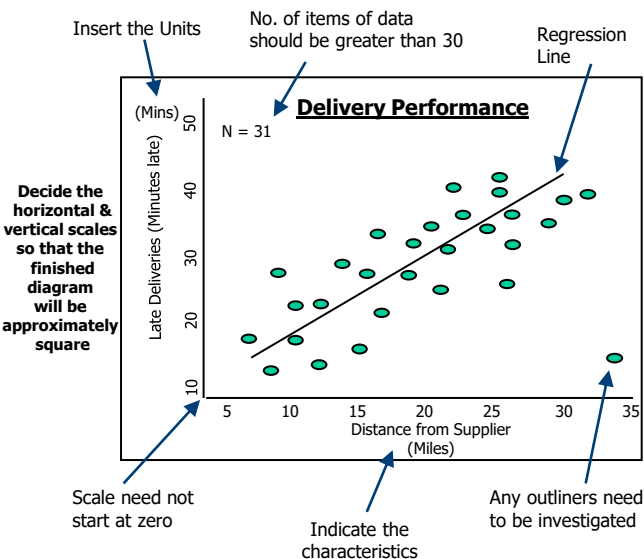


HISTOGRAMS : To understand the form of a distribution, & compare it to a standard



SCATTER DIAGRAMS:

To find the correlation between paired data



Stratification



What is Stratification?

It means the dividing up and organising data into a number of strata or layers (like rock). Put another way, a single population is divided - by workforce, working methods, equipment, materials etc. - taking note of common data points, peculiarities or characteristics and put into a number of groups (called strata) having the same points in common.

Categories of Stratification

(Subjects/Ideas to Stratify by)

1. By time: month, week, day, dayshift, nightshift, day of the week, time, morning, afternoon, etc.
2. By process: step, department, equipment, tool, jig, die, age of machine, etc.
3. By working method: temperature, pressure, air temperature, humidity, weather, speed, standardised work etc.
4. By workforce: section, work group, task force, relieving, new/old, expertise, age, experience, etc.
5. By product: batch number, type, supplier, customer, process, inspection, equipment, etc.

What can I use this Tool for?

- Separating out information in order to investigate and find the real contributing factors.
- Data may initially tell you one thing, but by breaking it down further you may see a very different story.



7 PS Tools

What are the 7 Problem Solving Tools?

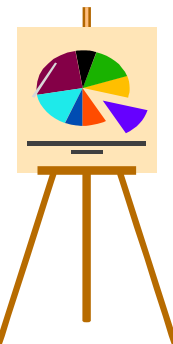
Basic techniques that are useful in solving problems concerning safety, quality, costs, volumes etc. that arise in the work place.

The Seven Tools are:

- Pareto Diagrams
- Cause and Effect Diagrams
- Graphs & Control Charts
- Check Sheets
- Histograms
- Scatter Diagrams
- Stratification

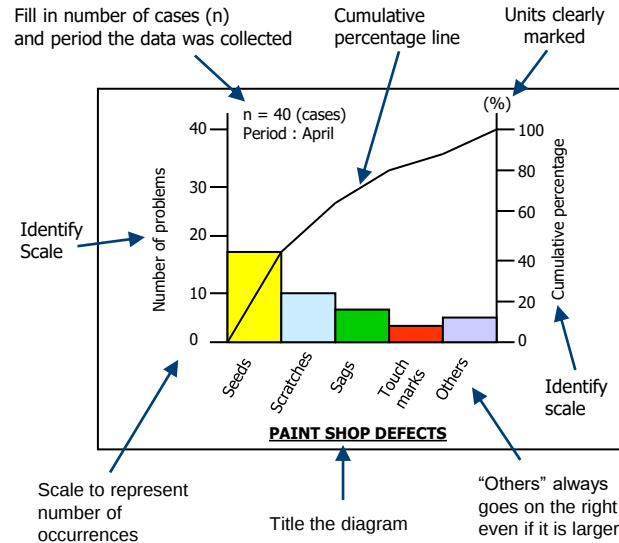


Don't try to go it alone!
 Study the "7 PS Tools"
 and make them work for **you**!



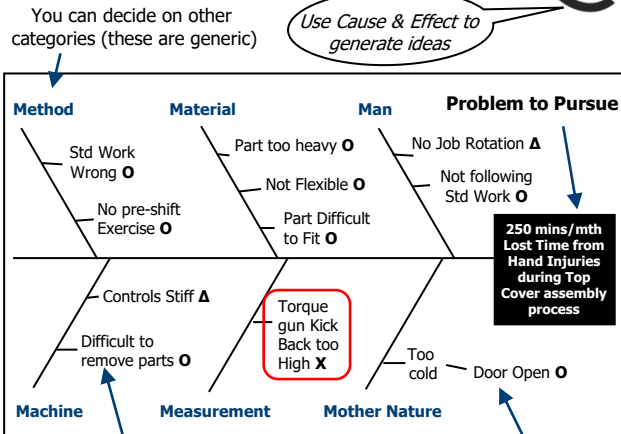
PARETO DIAGRAM:

To understand the key issues from many



CAUSE & EFFECT DIAGRAMS:

To establish the Direct Causes

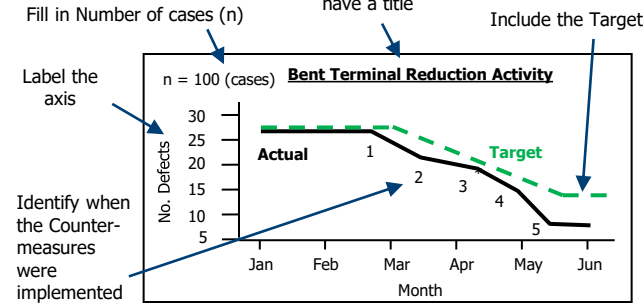


- Brainstorm all Possible Causes
- Smaller sub branches
- List all Possible Causes and check each one to find the Direct ones
- Prove the Direct Causes with data/facts or by an experiment/trial
- Identify with a Rating Method:
 - = OK
 - Δ = Contributor but not Direct
 - X = Direct Cause

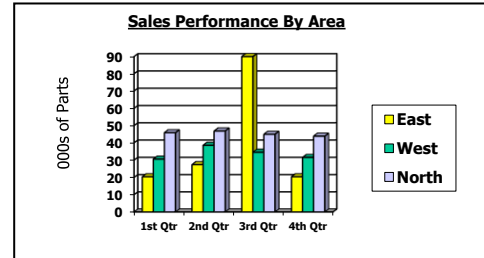
GRAPHS :

To make data become useful information easily

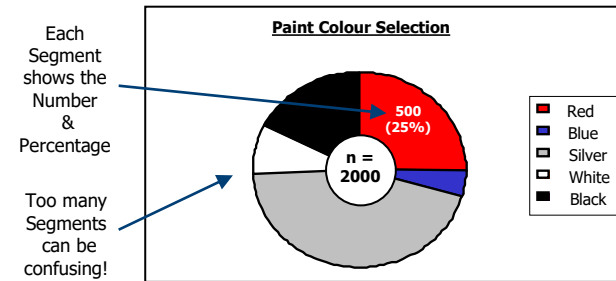
Line Graph



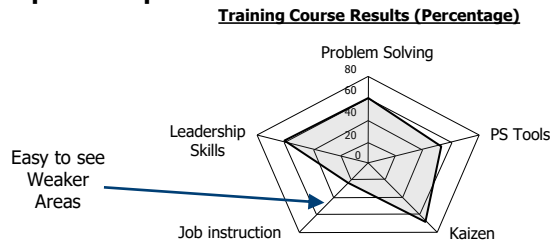
Bar Graph



Pie Chart

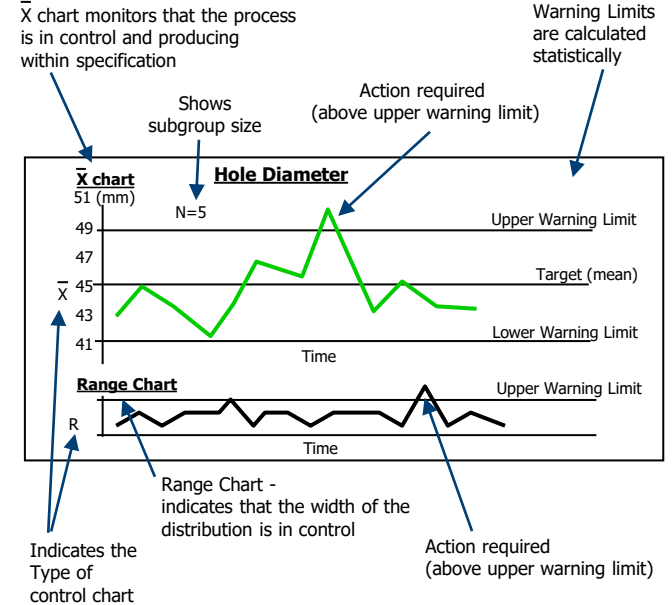


Spider Graph



CONTROL CHARTS:

To investigate whether a process is stable or not



CHECK SHEETS:

To collect data

Make boxes to fill in regular items

Now we have collected data it will help make better decisions

Decide on Criteria

Ensure you have identified the source of the data

Wire Harness Defects								
Process	Harness Assembly					Week No.	24	
Group	Inspection					Completed by	J Bloggs	
Shift	Night							
Defect	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
Loose screw	///	/	///	//	//			12
Cross thread	/	/	//		/			5
Part missed	/	//	////	//	//			12
Wrong part fitted	///			//	/			6
Gap too large	//	///	///	/				10
Damaged part	///	/	/		///			12
Total	14	8	16	9	10			57

Add Totals

Fill in data

Try to involve the end user in the design of your Check Sheet. This helps to gain their commitment to filling it in!