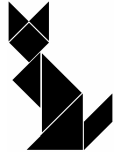


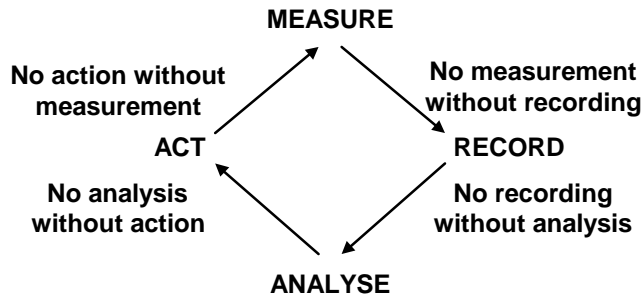
The problem solving toolkit - An easy guide

(Problem identification and solution - the right tool for the job!)



1. The problem solving action cycle

- The action cycle provides a method for controlling the problem solving process.



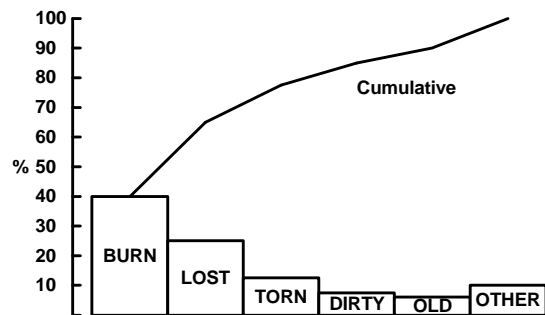
- Problem solving without a method is random and doomed to failure. The only exercise you will get is jumping to conclusions!
- The cycle is repeated as often as is required.

Always follow the action cycle!

2. Pareto principle (80:20 Rule)

- Separate the vital few from the trivial many.
- Group the data into logical categories with largest category first and "Other" last.
- Plot the cumulative result.

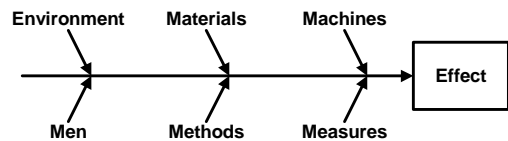
Start work on the vital few first!



3. Cause and effect

- Identify potential causes and areas to start work.
- Use with operators not managers. They know the real process.
- Get all the causes and then rank using Pareto.

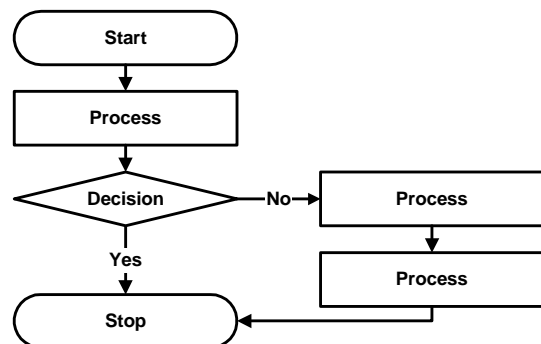
Solve the cause, don't just treat the effect!



4. Flow charts

- Map the actual process.
- Find the decision points and areas of confusion.
- Improve the process to meet the ideal.

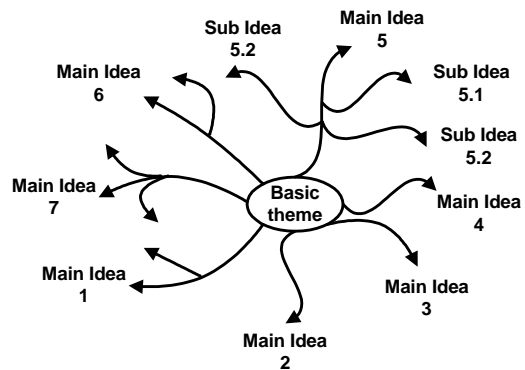
If a process cannot be made into a flow chart it will not work!



5. Mind maps

- Get all of your ideas down, small notes only.
- Organise by Main Ideas first.
- Do not try to prioritise or number when mapping. Get it down on paper first.
- Look for relationships. Let one note spark another.

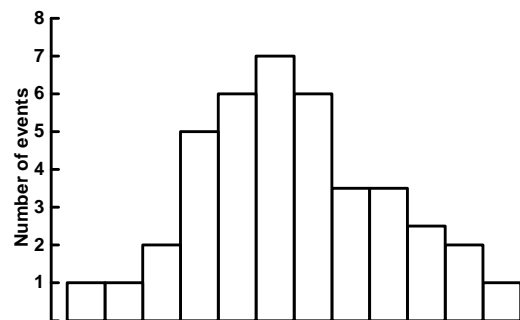
Get the ideas down on to paper.



6. Histograms

- Get lots of numbers in an easily understood visual form.
- Group the numbers into cells or ranges.
- Plot to give a histogram, look for the average and the shape (distribution).

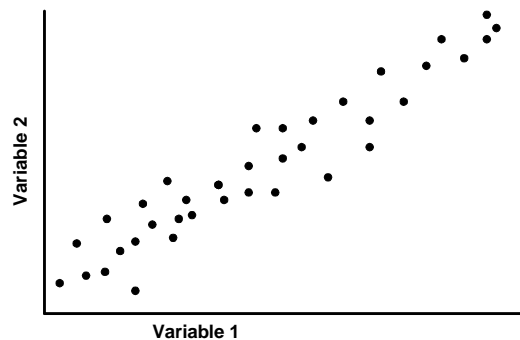
Easy to understand and decide on action.



7. Scatter charts

- Quickly see if two variables are related.
- Go for quick and dirty numbers.
- Correlation is not causality. A relationship does not indicate a direct connection only that Variable 1 influences Variable 2 - there may be a deeper connection.

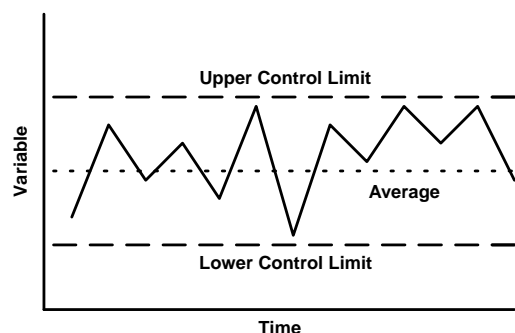
Find the relationship quickly!



8. Run Charts and Control Charts

- Good way to show data over time.
- Collect data over time. Look for the average.
- Consider the moving average for rapidly changing results.
- Set control limits for upper and lower boundaries.
- Look for “out of control” patterns. Points outside control limits, runs up or down, points always under or over the average value.

Control charts let you look forward rather than backward. Prevention is better than detection.



Problem solving is a never-ending task but using the tools will make it easier and get better results. Contact Tangram for more details on any of the tools described.