



THE SCOPE OF TOOLS AND TECHNIQUES

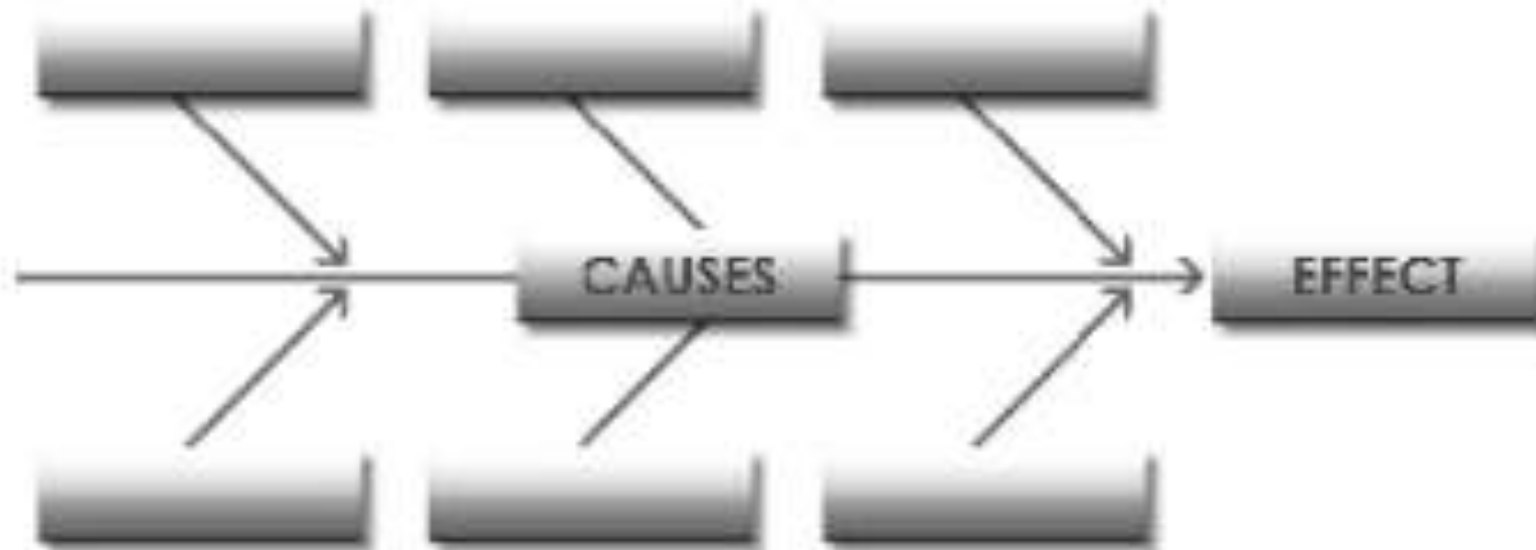
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CAUSE AND EFFECT DIAGRAM

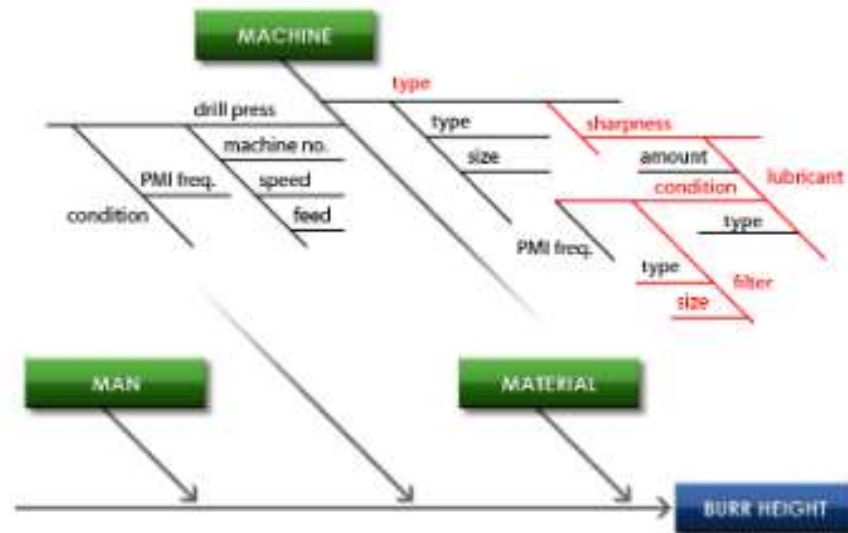
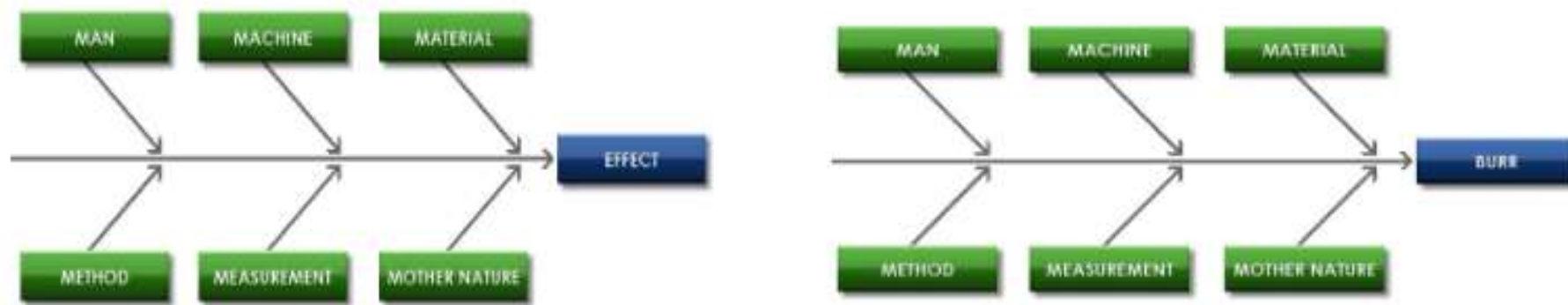
A **Cause and Effect Diagram** is a graphical tool for displaying a list of causes associated with a specific effect

It is also known as a fishbone diagram or an [Ishikawa diagram](#)



EXAMPLE

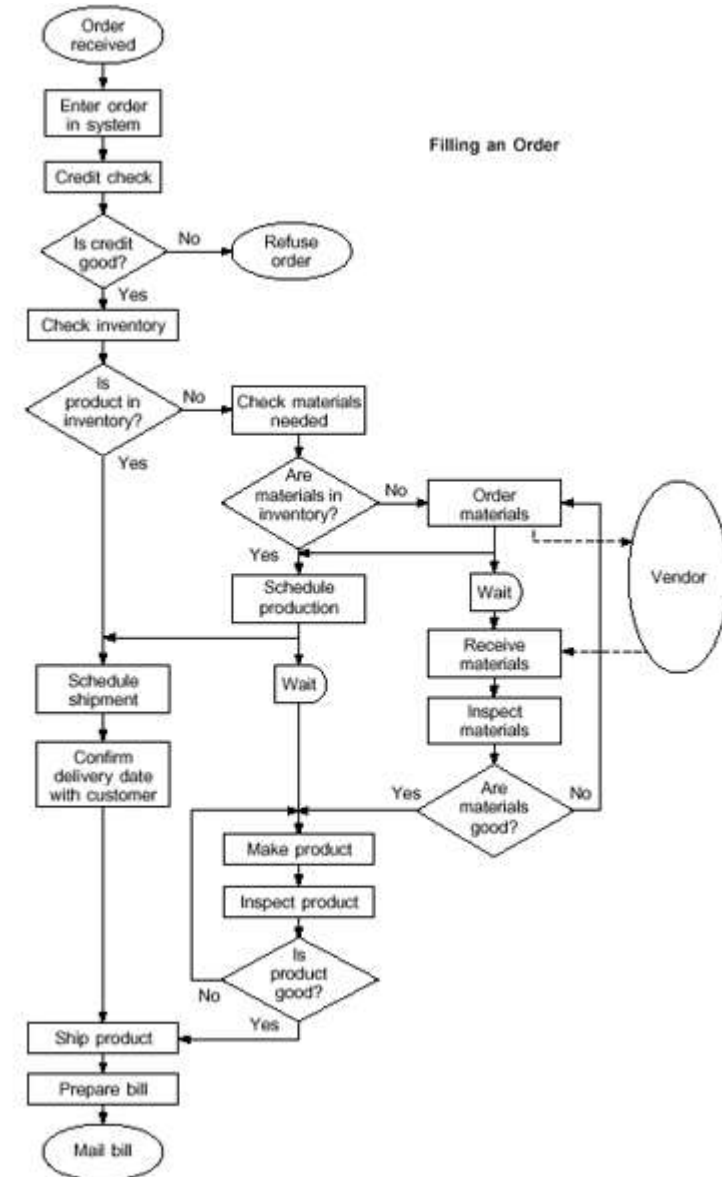
A company has experienced problems with a particular machine. The drilling operation is producing an excessively large size of burr. What's a burr? If you were to drill a hole in metal; then, if you were to run your finger across the hole and it cuts your finger, the cut was caused by a burr. It's virtually impossible to drill a hole without a burr, but it isn't impossible to minimize the size of them.



WHEN TO USE A FLOWCHART

- To develop understanding of how a process is done
- To study a process for improvement
- To communicate to others how a process is done
- When better communication is needed between people involved with the same process
- To document a process
- When planning a project








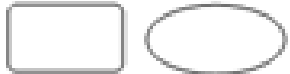
High-Level Flowchart for an Order-Filling Process





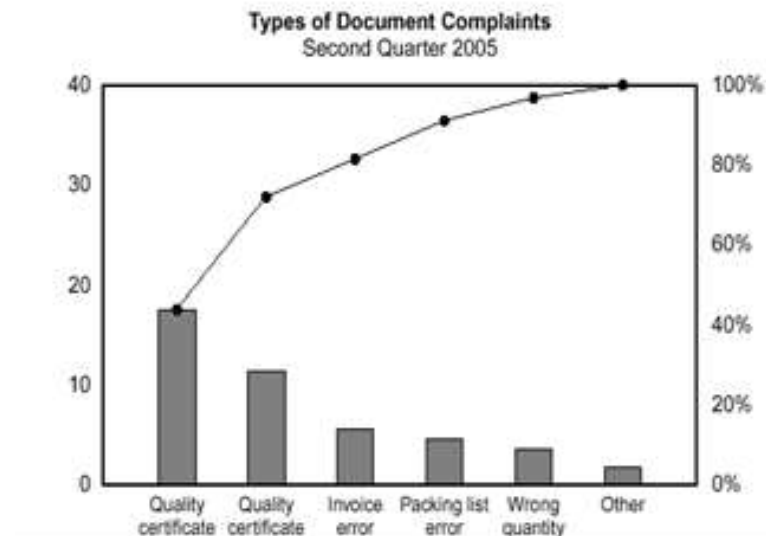
ACTIVITY

MATCH THE FOLLOWING

	Decision based on a question.. (Often the answers are "yes" and "no.")
	One step in the process. The step is written inside the box. Usually, only one arrow goes out of the box.
	Direction of flow from one step or decision to another.
	Link to another page or another flowchart. The same symbol on the other page indicates that the flow continues there
	Delay or wait
	Document
	Alternate symbols for start and end points
	Input or output

PARETO CHARTS

- A Pareto chart is a bar graph
- The lengths of the bars represent frequency or cost (time or money), and are arranged with longest bars on the left and the shortest to the right
- In this way the chart visually depicts which situations are more significant
- This cause analysis tool is considered one of the seven basic quality tools





REFERENCES

1. <https://asq.org/quality-resources/pareto>
2. <https://www.sixsigmadaily.com/cause-and-effect-diagram/>
3. <https://asq.org/quality-resources/pareto>
4. **What is Lean Six Sigma** By Michael L. George, David T. Rowlands, Bill Kastle



THANK YOU