Continuous Improvement Toolkit

Check Sheets

Managing Risk

PDPC

FMEA   RAID Logs

Fault Tree Analysis

Risk Assessment*

Traffic Light Assessment

Deciding & Selecting

Pros and Cons

Break-even Analysis

Importance-Urgency Mapping

Cost Benefit Analysis

Force Field Analysis

SWOT

Decision Tree   Voting   Pugh Matrix

QFD   Matrix Diagram   TPN Analysis

Kano Analysis   Prioritization Matrix

Critical-to Tree   Paired Comparison

Planning & Project Management*

RACI Matrix   Stakeholder Analysis

PEST   PERT/CPM   Activity Diagram

Roadmaps   Project Charter   Gantt Chart

PDCA   Control Planning   Gap Analysis

Hoshin Kanri   Kaizen

How-How Diagram

Tree Diagram**   Standard work

Understanding Performance

Lean Measures   KPIs

OEE   Capability Indices

MSA   RTY   Descriptive Statistics

Cost of Quality

Reliability Analysis   Graphical Analysis

Run Charts

Control Charts

Benchmarking   Sampling

Cause and Effect Matrix   Pareto Analysis

Understanding Cause & Effect

Confidence Intervals

Probability Distributions   ANOVA

Hypothesis Testing

Scatter Plot   Correlation

Design of Experiments

Regression

5 Whys   Chi-Square Test

Multi-vari Charts

Relationship Mapping*

Fishbone Diagram

Identifying & Implementing Solutions***

Simulation   TPM

Mistake Proofing

Pull Systems   JIT   Ergonomics

Work Balancing   Automation

Bottleneck Analysis   Visual Management

Flow   Value Analysis   5S

Waste Analysis   SMED

Time Value Map   Process Redesign

TRIZ***

SCAMPER***

Data Collection

Focus groups   Interviews

Photography   Check Sheets

Measles Charts   Questionnaires

Critical Incident Technique

Observations

Brainstorming   Analogy

Nominal Group Technique

Mind Mapping*

Affinity Diagram   Attribute Analysis

Lateral Thinking   Visioning

Creating Ideas**

IDEF0   Value Stream Mapping   SIPOC

Flow Process Chart   Process Mapping

Flowcharting   Service Blueprints

Designing & Analyzing Processes

Continuous Improvement Toolkit . www.citoolkit.com
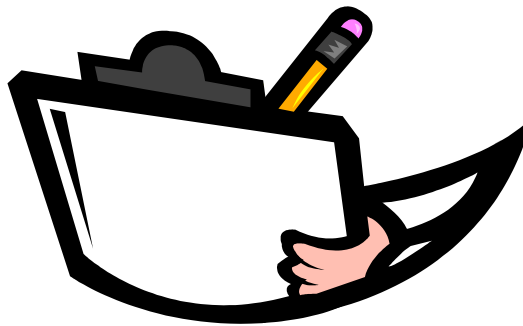
- **Check Sheets**

Check Sheets:

❑ A manual data collection forms.

❑ Used to collect data in real time at the location where the data is generated.

❑ Could be used on a temporary basis (during a project) or be established for routine activities.

❑ A data collector enters marks where predefined events occur.

❑ The characteristics may be measured on a continuous scale or on a yes/no basis.

❑ Often used for collecting **failure** information.

- **Check Sheets**

Benefits:

❑ Having standard forms:

- Makes it easy to collect reliable and useful data.
- Enables faster capture and compiling of data.
- Enables the data to be recorded in a consistent manner.
- Captures essential descriptors that otherwise may be overlooked or forgotten.

- **Check Sheets**

Types of Check Sheets:

❑ **Failure Check Sheets:**

- Collect information on the failure at specific process steps.

❑ **Visual Check Sheets:**

- Use pictures of the process or product to record where an event occurred.

❑ **Traveler Check Sheets:**

- A check sheet that stays with the product or service throughout the entire process, collecting information at each stage.

- At each process step, the data collector enters the appropriate data.

- Useful when collecting process lead time.

- **Check Sheets**

Tally Charts:

❑ It's a table that records the frequency with which different features are observed.

❑ An easy and helpful way to track and record.

❑ The information is quickly understood as it is displayed in easy-to-count groups of five.

❑ **Examples:**

- Capture data related to customer calls.
- Count the rejects of different machines.

	1	2	3	4	5
A	//		///	/	
B	/	//	////	///	//
C		/	/		
D	//		//		/

Defect	Tallies	Total
Defect 1	⊪ ///	8
Defect 2	///	3
Defect 3	⊪	5
Defect 4	⊪ ⊪ ///	13

Checklists:

❑ Simply a list of tasks to be performed.

❑ Helps to ensure consistency and completeness in carrying out a task.

❑ Compensates for potential limits of human memory and attention.

❑ Often presented as lists with small checkboxes.

❑ **Common examples:**

- To do list.
- A schedule.
- Safety checklists.
- 5S checklists.
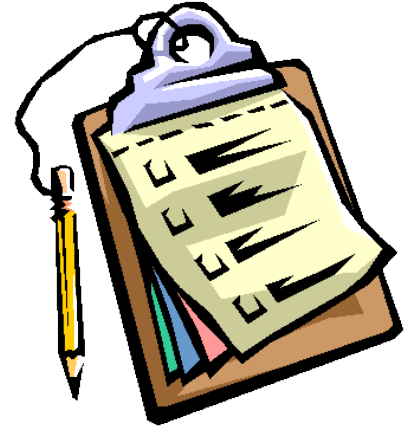
- **Check Sheets**

Measles Charts:

❑ Practical visual tools for collecting data.

❑ They simply show the failures or events on a drawing or a picture.

❑ They help analyzing the location and the density of failures or events in a product or a process.

❑ They answer the question: "where the failures are located" or "where the events took place?".

❑ **Common examples:**

- Defect locations in a product.
- Most confusing sections in a returned application.

- **Check Sheets**

How to Construct a Check Sheet:

❑ Specify the data to be collected and factors to be included.

❑ Determine the appropriate time period to be covered.

❑ Simply list the issues you are tracking and leave space to allow marking whenever someone finds an issue or failure.

❑ Add columns as needed for other data, such as value-add time, delays, defects, work-in-process, etc.

❑ Pilot test the check sheet and make changes as needed.
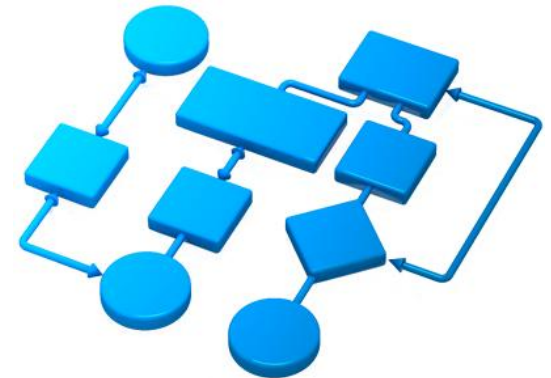
- **Check Sheets**

Tips:

❑ Design the check sheet with a team who are going to use it.

❑ Keep it clear and user-friendly.

❑ Try it first.

❑ Explain to the team the reason for using it.

❑ Encourage recording contextual data for traceability (dates, names, etc.).

Example - Incoming Material Inspection Form:

Material Inspection Form						
#	Supplier	Scratch	Dent	Pin hole	Other	Date Inspected
110424	Hydro					
310424	Alcan	X			X	
310426	Alcan		X			
110436	Hydro				X	
200122	Wise		X	X		
410351	Novelis					
201133	Wise			X		
200292	Wise	X		X		

- **Check Sheets**

Example – Traveler Check Sheet:

<table>
<tr><td colspan="3" style="text-align:center">Online Ordering Process

Order #:_____   Customer location:_____

Order: _____

    _____

Payment amount:_____   Date: _____</td></tr>
<tr><th>Process Step</th><th>Time</th><th>Issues</th></tr>
<tr><td>Order Taking</td><td>2.25 minutes</td><td></td></tr>
<tr><td>Order Preparation</td><td>6.50 minutes</td><td></td></tr>
<tr><td>Order Packing</td><td>1.75 minutes</td><td></td></tr>
<tr><td>Delivery</td><td>14.3 minutes</td><td></td></tr>
</table>