

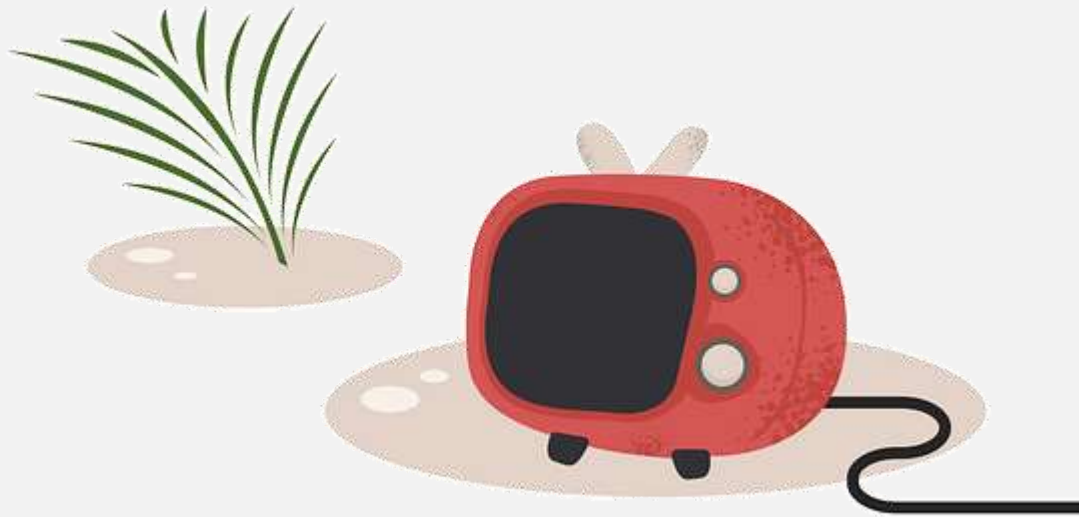
Continuous Improvement Toolkit

VISUAL MANAGEMENT



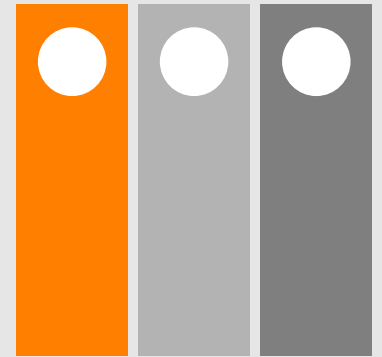
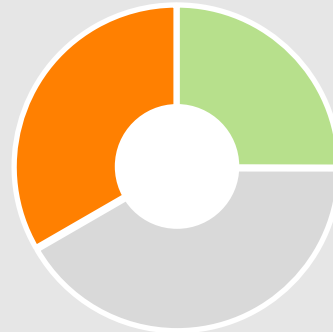
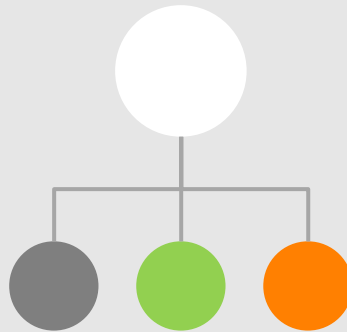
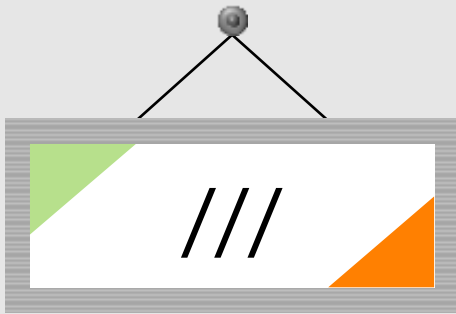
VISUAL MANAGEMENT

A business management approach that **communicates important information** in a visual and real-time manner .



VISUAL MANAGEMENT

A system of labels, signs, markings, information displays, and visual guides **instead of written instructions.**



Consists of simple visual techniques that are placed **at the Gemba**

VISUAL MANAGEMENT

Lean organizations rely heavily on visual management to detect abnormalities, reinforce standards, and ensure stability and safety are maintained in the workplace.

A Lean leader should ensure that these visuals are useful and are being used constantly.



VISUAL MANAGEMENT

A good **illustration** of visual management are road signs, traffic lights and lane markers on the road.



The messages they convey are so **clear** that when you see a traffic light for example, you know exactly what you should be doing

VISUAL MANAGEMENT

Research shows that people tend to learn and process information more visually.

Our brains simply **respond better** and faster to colors, shapes, patterns, graphics and pictures.



VISUAL MANAGEMENT

Just as road signs are easier to understand than written signs, **workplace visuals** are easier to understand than written instructions.

Therefore, effective workplace visuals can have a **positive impact** on safety, productivity, quality, and on-time delivery.



VISUAL MANAGEMENT

The aim is to enable anyone working in the workplace to be able to assess the current situation **at a glance**.



This should bring the workplace to the point where all problems, abnormalities and waste to be **immediately recognized**

VISUAL MANAGEMENT

When problems and deviations are visible and apparent to all, immediate **corrective action** can be taken.

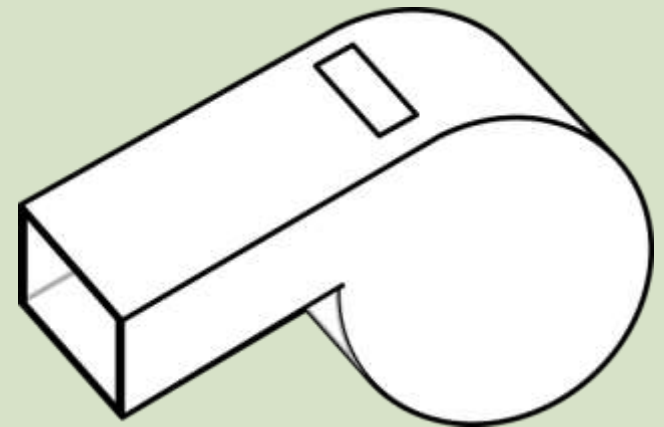
This will increase the efficiency and effectiveness of the processes.



VISUAL MANAGEMENT

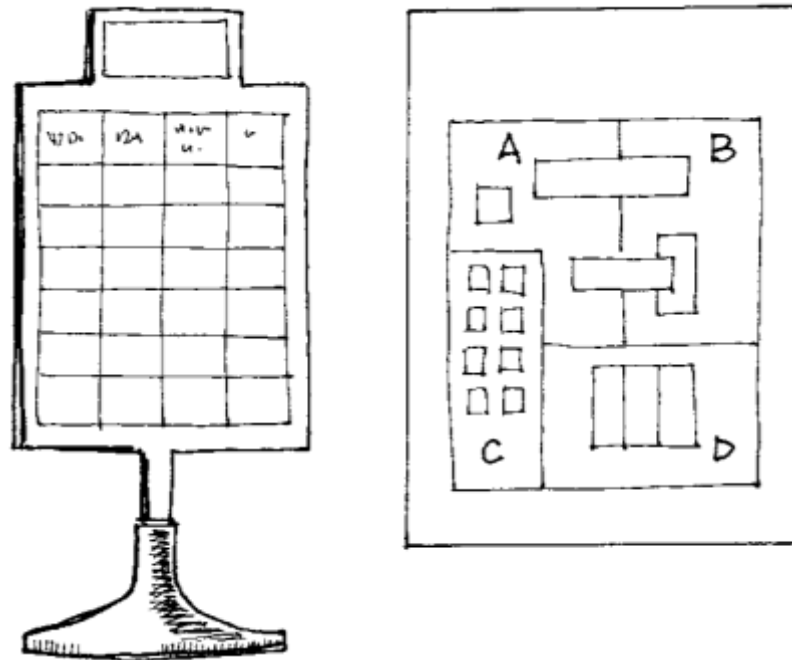
Workplace visuals can also play an important role in **job training** by eliminating the need for constant supervision.

Employees would need less supervision because they understand the standards, see the results, and know exactly what to do.



VISUAL MANAGEMENT

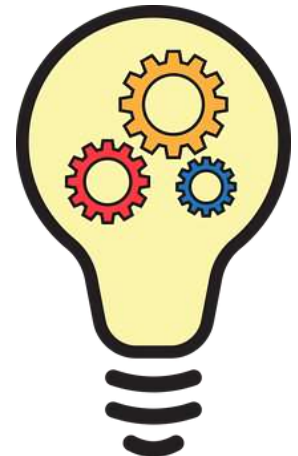
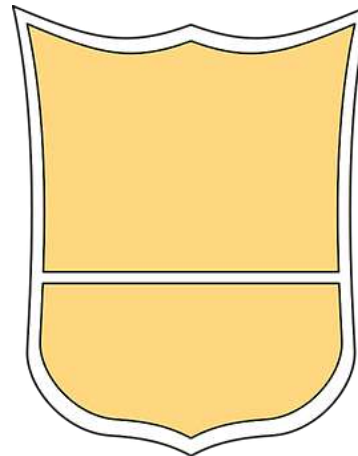
Employees need visuals that show what is expected from them and to keep them informed about production status and customer needs.



VISUAL MANAGEMENT

Visual management can also be used to . . .

- ▶ Share goals and ideas.
- ▶ Indicate safety risks.
- ▶ Promote safe behavior at work.
- ▶ Report team and Kaizen progress.



VISUAL MANAGEMENT

01

Eliminates confusion and creates stability to the environment, equipment and work performed

02

Increases the awareness of error conditions and waste

03

Replaces difficult to understand paperwork

BENEFITS

04

Improves employees' involvement and morale

05

Improves compliance to health, safety and environmental regulatory requirements

06

Reduces the opportunity for miscommunication

07

Improves the communication and handover between different shifts

08

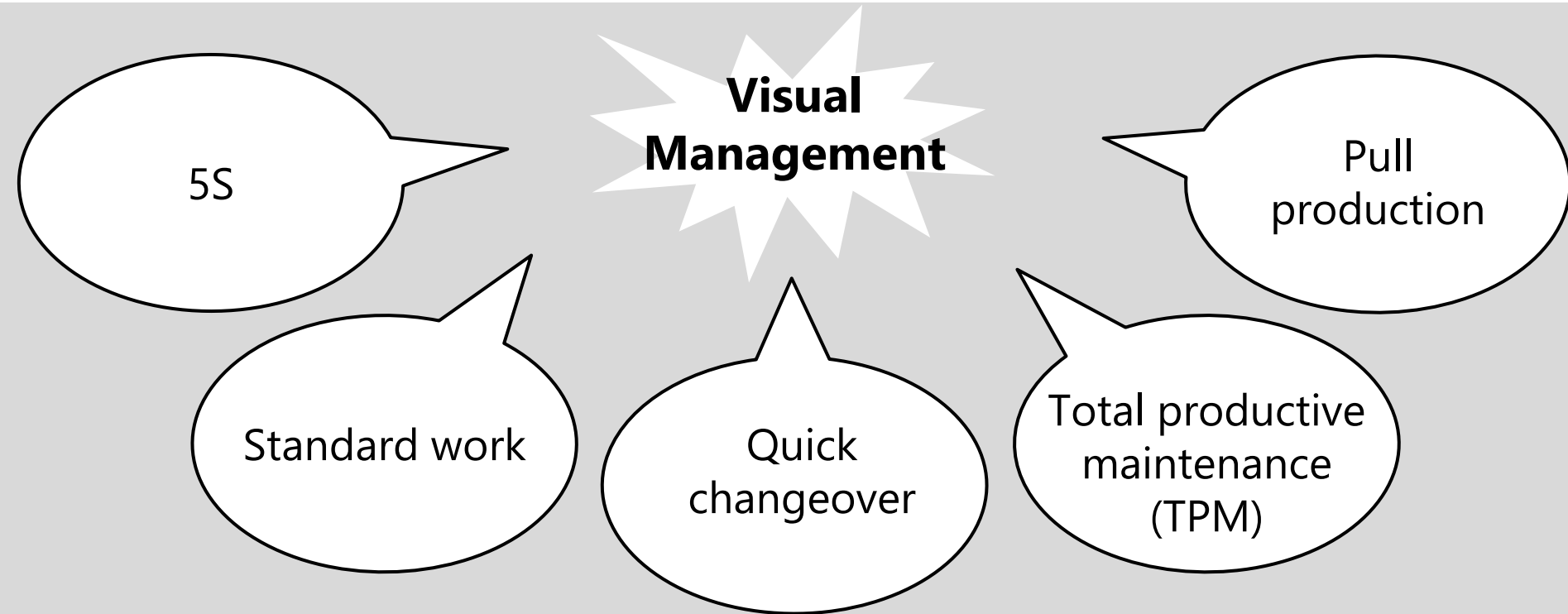
Eliminates the need for time consuming meetings

09

Reinforces continuous improvement

VISUAL MANAGEMENT

Serves as the **key sustaining force** for many lean techniques.



VISUAL MANAGEMENT

Especially important during the early phase of Lean implementation.

Many organizations start their Lean journey with visual management to help uncover hidden waste and abnormalities.



VISUAL MANAGEMENT

Types of Visual Controls

Visual management includes a wide range of visual controls that help making all workplace elements and processes more visually apparent.



INFORMATION

Visuals to show identity, directions, strategy, customer expectations and compliance requirements



INSTRUCTION

Visuals to communicate SOPs, work-related information, and workplace organization and maintenance activities



STATUS

Visuals to display the status of processes, projects, production, productivity and performance

VISUAL MANAGEMENT

Types of Visual Controls – Useful Questions



INFORMATION

Where am I now?
Where am I going to?
Who works here?
What is this machine?
What are customers & regulatory needs?
Is the area, behavior, or condition safe?



INSTRUCTION

What should I do?
When should I do it?
How to do it correctly?
How to do it safely?
How to organize this area?
How to store this item?
When shall I reorder?

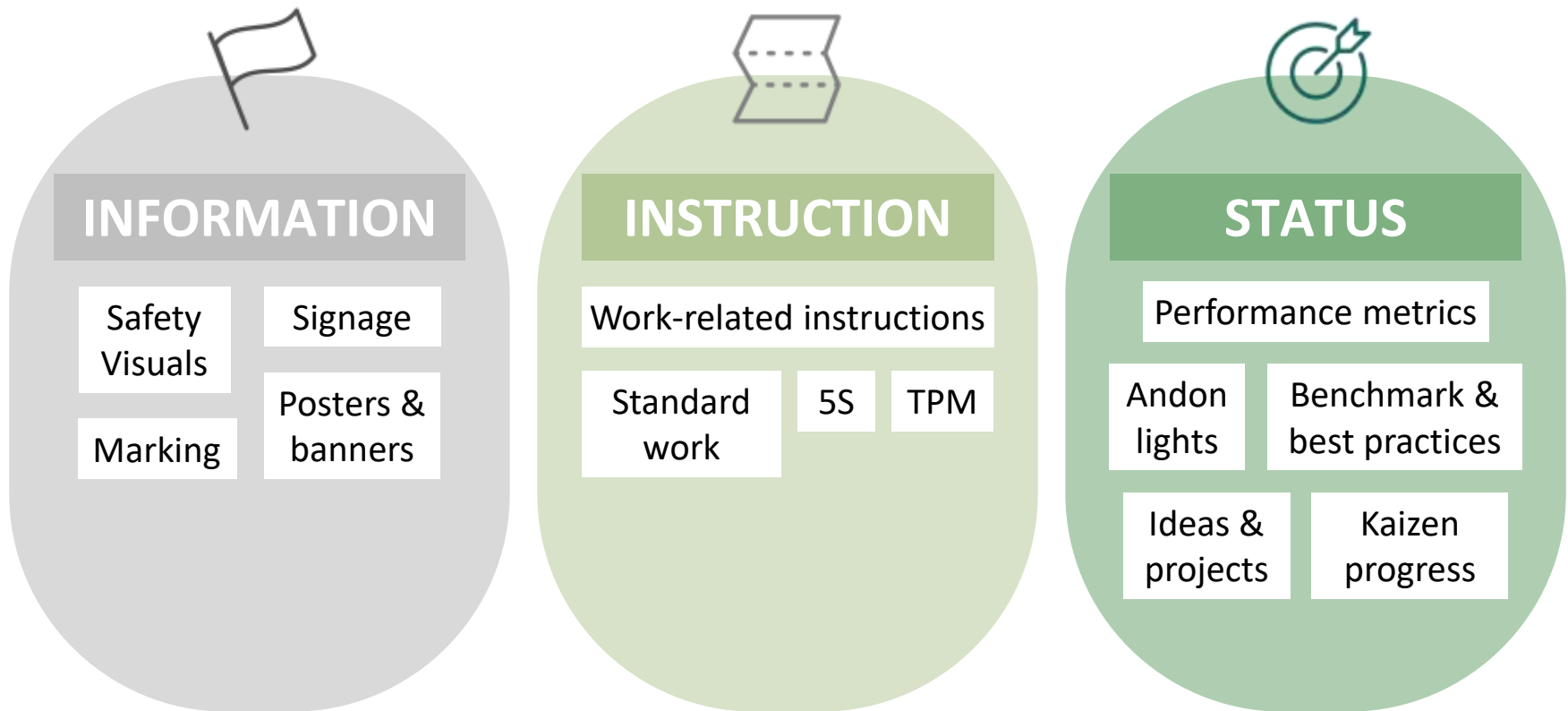


STATUS

What is the status now?
What is happening against what should be happening?
Is there any waste in the process?
Are there any problems or issues?

VISUAL MANAGEMENT

Many **techniques and principles** rely on visual management.



VISUAL MANAGEMENT



Safety visuals are important to keep the facility safe and environmentally friendly.

They play an important role in reducing injuries, incidents, near-misses and occupational diseases by reducing unsafe behaviors and conditions.



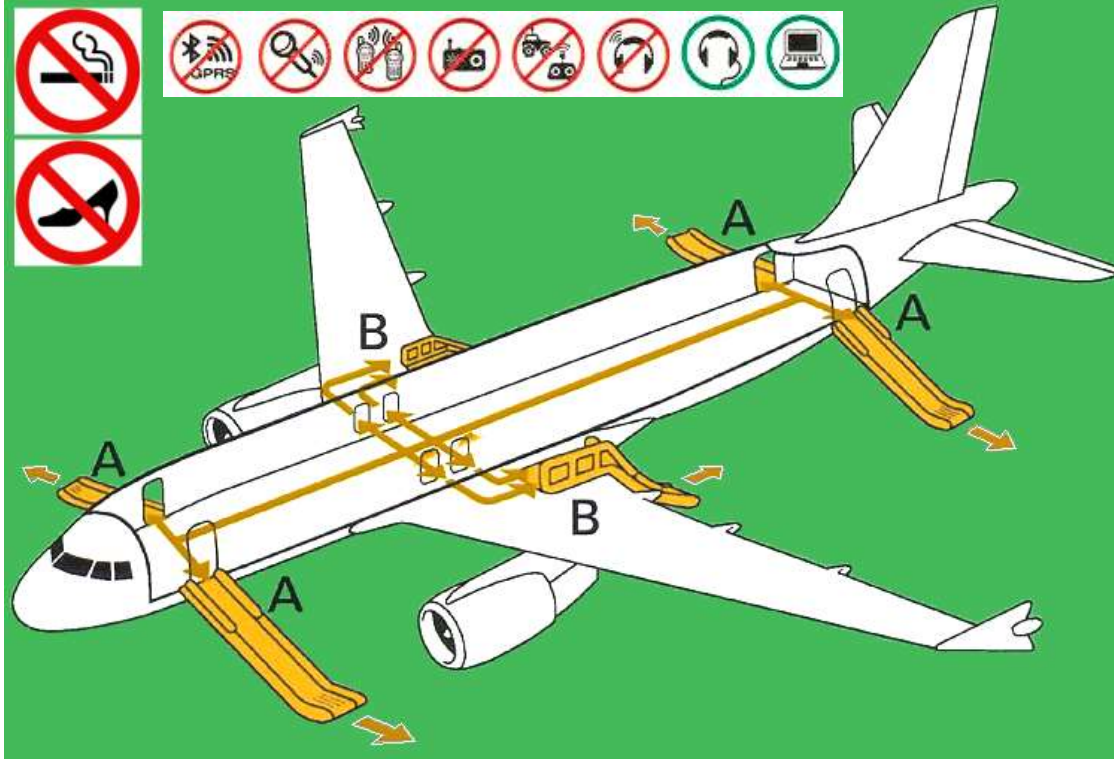
VISUAL MANAGEMENT



Safety
Visuals



Think of the manual of an airplane . . .



VISUAL MANAGEMENT



Safety signs and markings often use **bright coloring** to attract attention.



VISUAL MANAGEMENT



Safety
Visuals



Safety signage, hazard warnings and safety instructions should be provided at the **point of need**.



VISUAL MANAGEMENT



Safety
Visuals



It's important to properly **identify** the locations of fire protection equipment, safety showers, eye wash stations, personal protective equipment, and first aid stations.

And to identify when and where to use **personal protective equipment**.



VISUAL MANAGEMENT



Safety
Visuals



All **disconnect switches** for every electrically powered equipment should be clearly marked.



VISUAL MANAGEMENT



Wayfinding and directional signage help people find the way around.

They direct people from point to point and confirm the progress along a route.



VISUAL MANAGEMENT



Signage



Warning signs such as do not enter and no-smoking signs.



VISUAL MANAGEMENT



Proper **marking** of the different elements in the workplace is important to avoid mistakes and increase efficiency and safety.

Marking of machines,
equipment & production lines

Marking of materials and
finished goods

Marking floors and aisles

Marking of offices, rooms,
work cells and storage areas

Marking of pipelines and
valves

Marking of emergency
lanes and exit routes

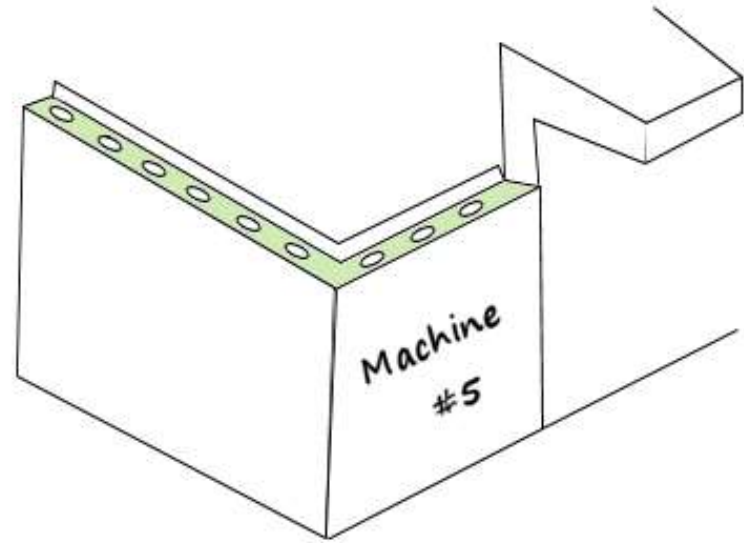
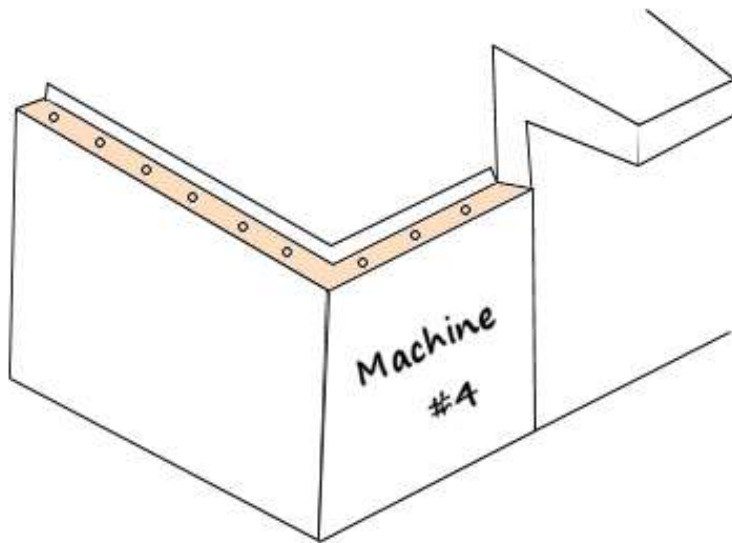
VISUAL MANAGEMENT



Marking



Marking of machines, equipment and production lines by coloring and labeling each.



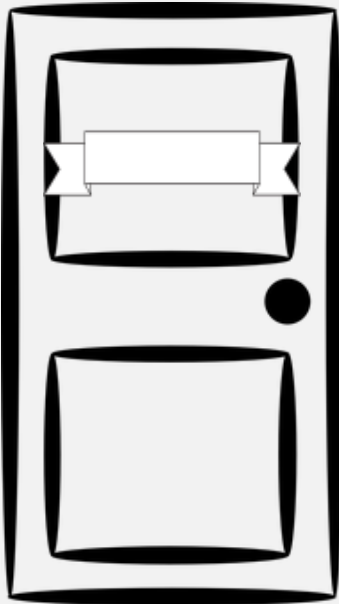
VISUAL MANAGEMENT



Marking



Marking of offices, rooms, work cells and storage areas.



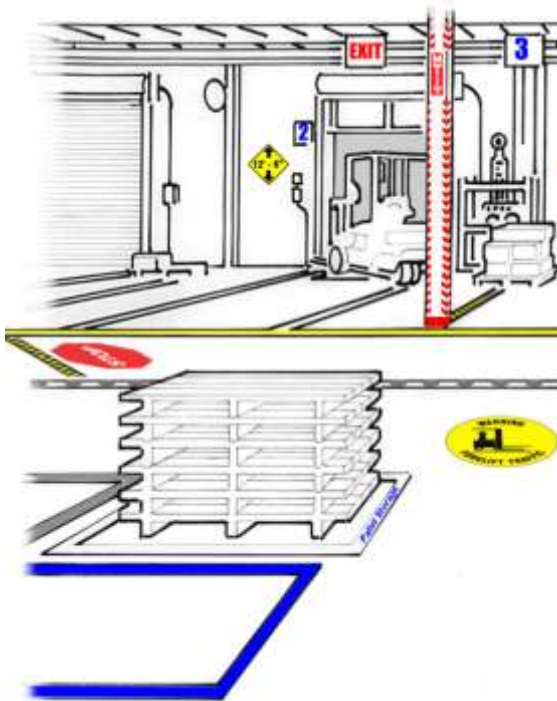
VISUAL MANAGEMENT



Marking



Floor marking is used to improve the layout of the workplace and mark critical safety and security areas.



VISUAL MANAGEMENT



Floor Color Coding Standards



Aisle ways and traffic lanes



Material or product held for inspection



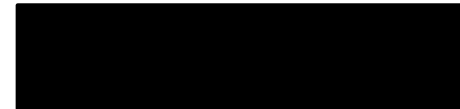
Scrap, rework, and red tag areas



Raw materials



Finished goods



Work in progress



Areas to be kept clear for safety reasons



Areas to be kept clear for operational reasons



Physical and health risk areas

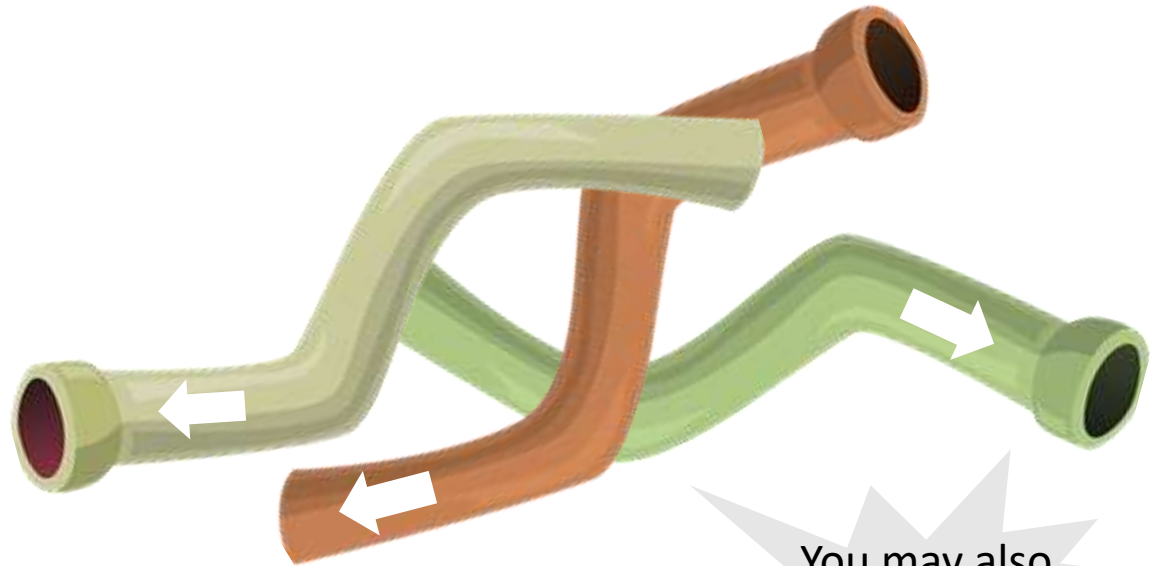
These colors are widely accepted and **comply** with international standards

VISUAL MANAGEMENT



Pipe marking communicates all the necessary information about the pipelines in the workplace.

Arrows are used to indicate the flow direction while colors often indicate the nature of the content.

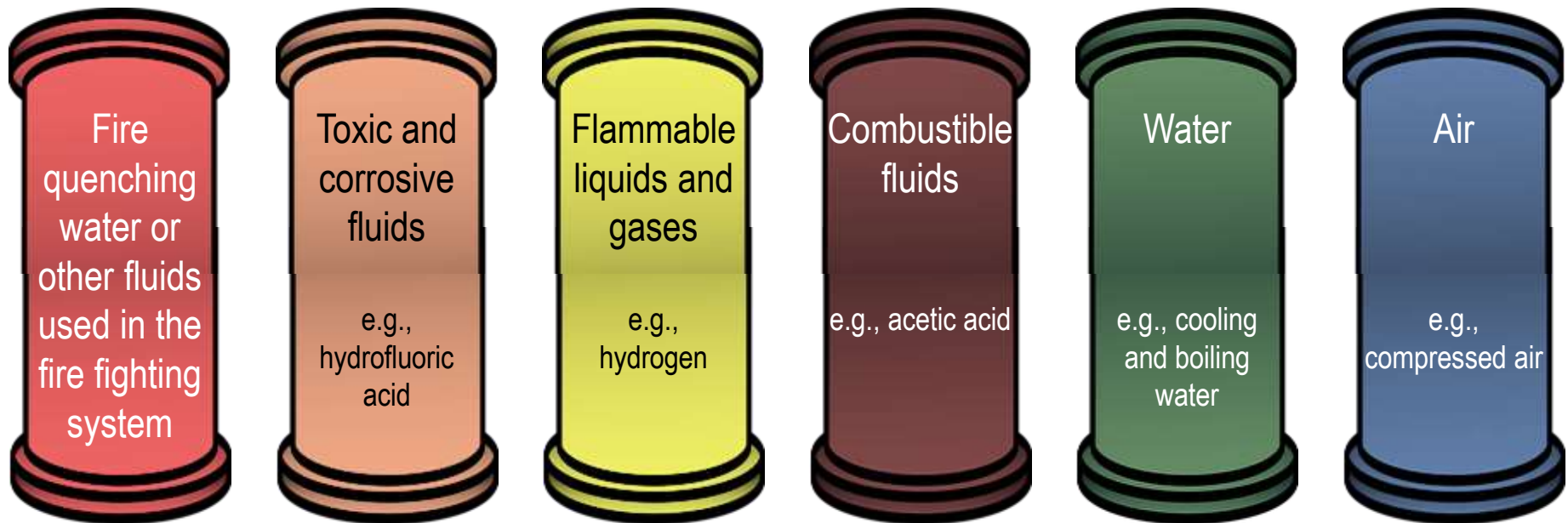


You may also post the **labels** on the pipelines

VISUAL MANAGEMENT



Pipeline Color Coding Standards



These colors are widely accepted and **comply** with international standards

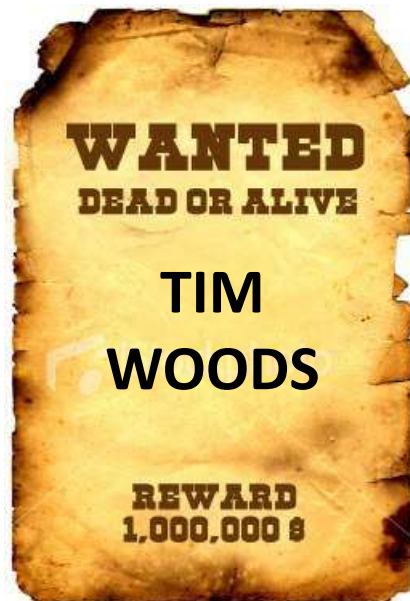
VISUAL MANAGEMENT



Posters &
Banners



Using of **posters** and **banners** can reinforce business goals and values and promotes awareness of safety and wellbeing among employees.



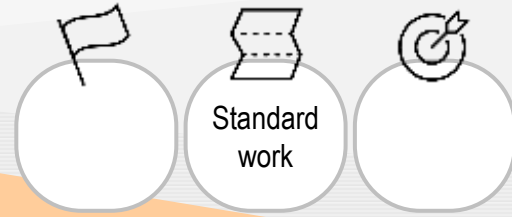
VISUAL MANAGEMENT



It is recommended to post **visual work-related instructions** and trouble logs at every machine.



VISUAL MANAGEMENT

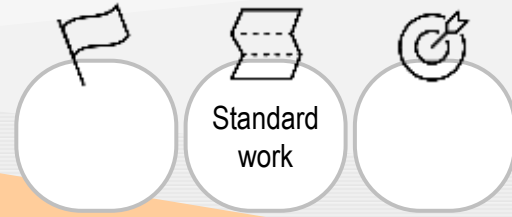


A strong visual management system seeks to promote **consistency** and create process stability.

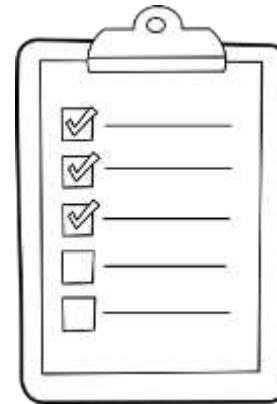
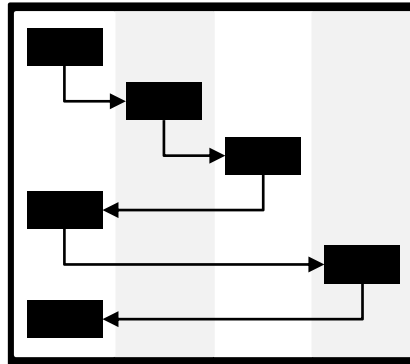
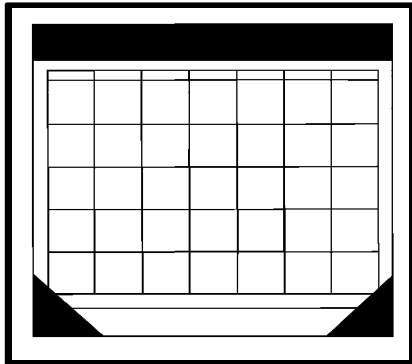
Standard work visuals help minimize production errors and ensure activities are always performed by all in the most efficient and effective way.



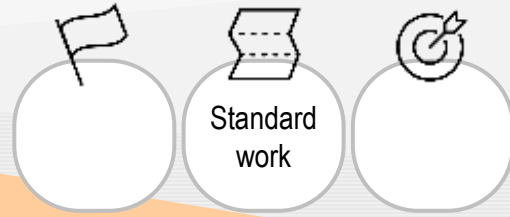
VISUAL MANAGEMENT



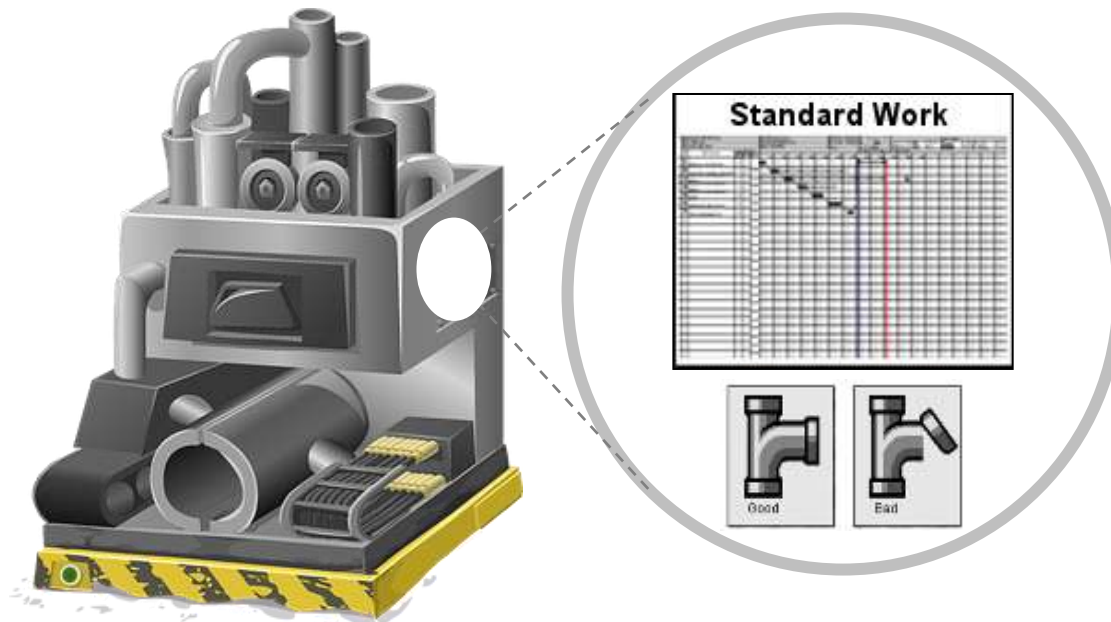
These visuals includes procedures, work instructions, check sheets, checklists, flowcharts, schedules, photos and one-point-lessons.



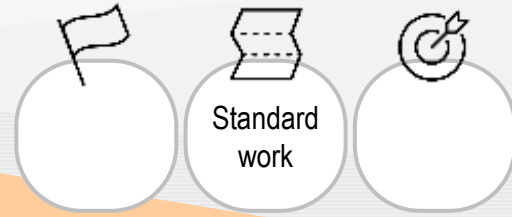
VISUAL MANAGEMENT



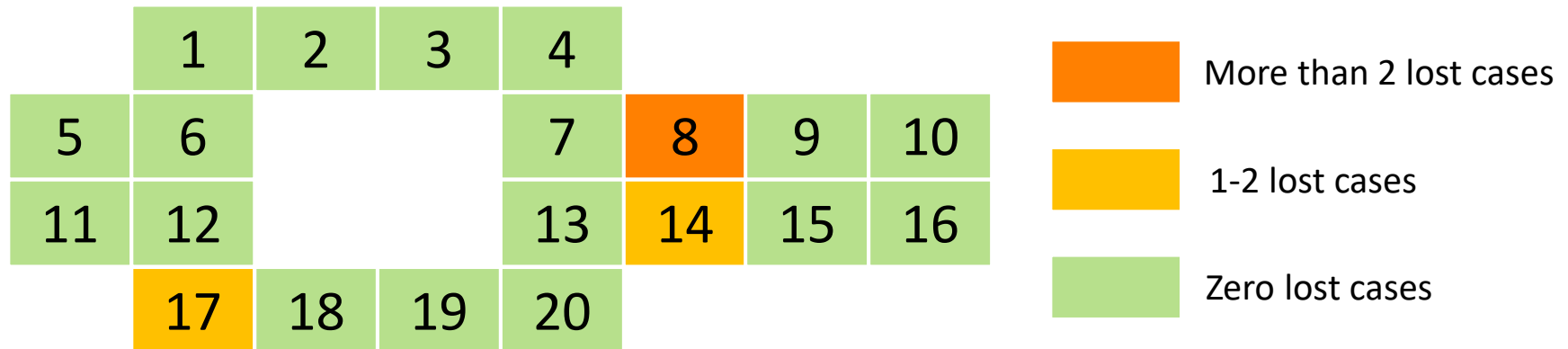
Process specifications and standard operating procedures need to be **posted** at each machine or workstation.



VISUAL MANAGEMENT

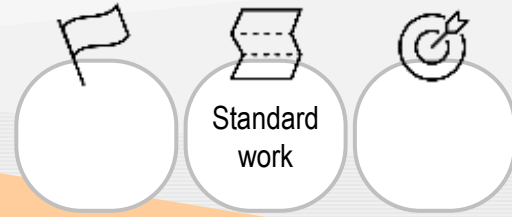


Visual controls are often used in conjunction with **color standards** to enhance clarity and workplace communication.

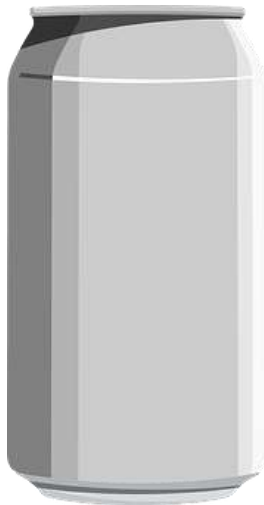


Example - A map for the areas which have the most safety incidents that resulted in lost time

VISUAL MANAGEMENT



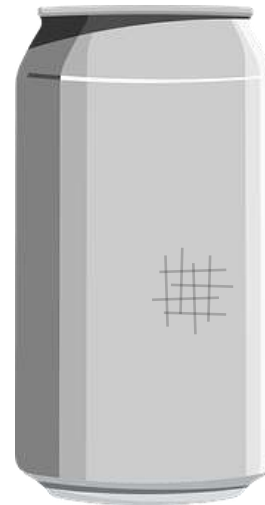
The best visuals are those that include **photos** and **drawings**, and those that are placed at the point of need.



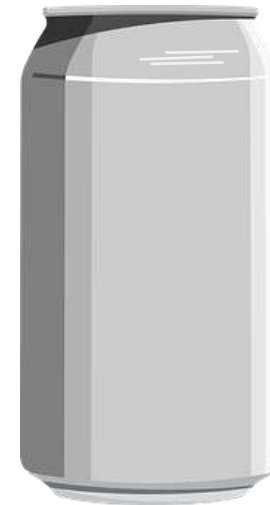
Good Can



Pin Hole



Body Dent



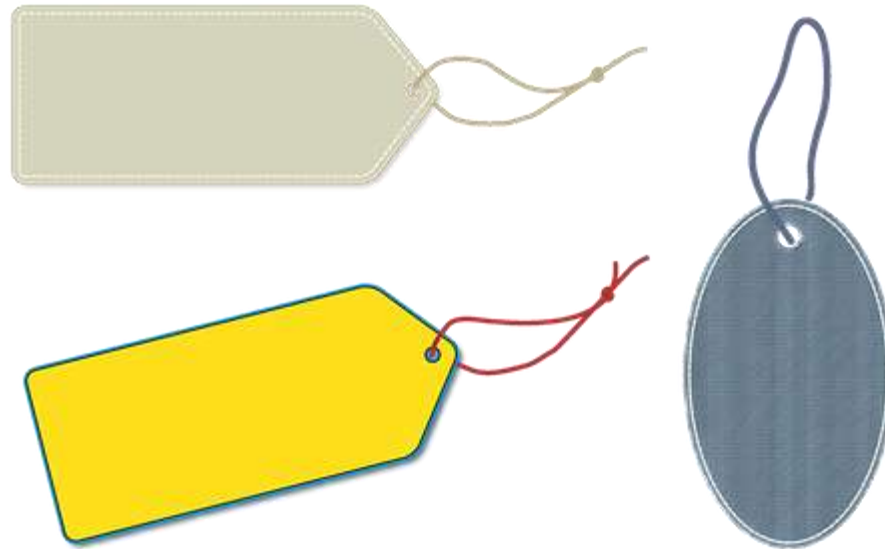
Neck Scratch

Visuals of good and bad parts are used to improve **defect detection**

VISUAL MANAGEMENT



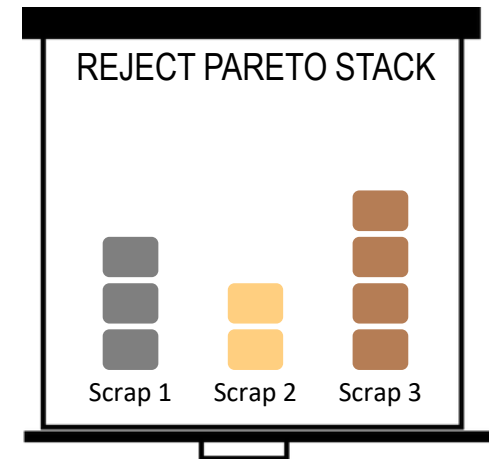
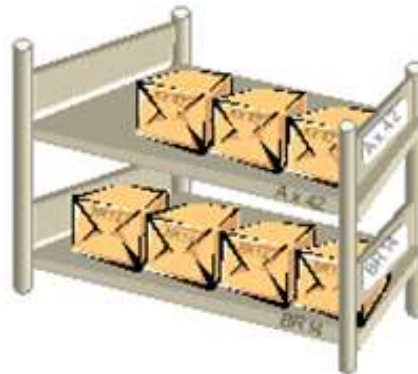
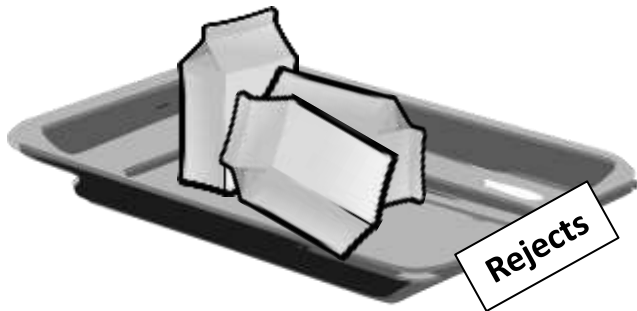
The **5S methodology** involves many visual management practices that can help creating a more organized workplace.



VISUAL MANAGEMENT



The second step of the 5S methodology 'set-in-order' promotes the use of **colors** and **labels** to clearly mark storage locations.

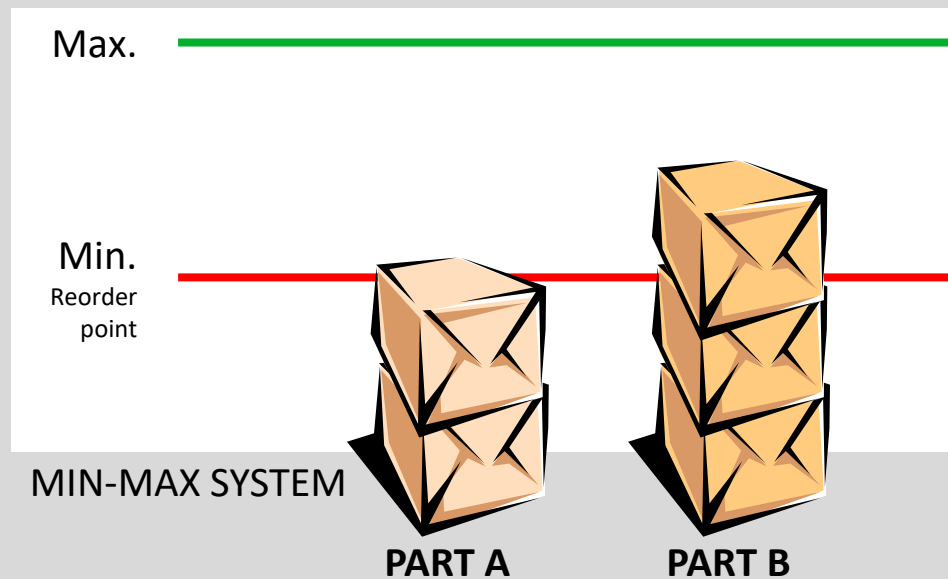


5S also promotes the use of many **inventory management techniques** to define inventory levels and reorder triggers

VISUAL MANAGEMENT



The **min-max system** is one of the simplest visual methods to control inventory mainly for low-volume items.



An order should be placed when the minimum level is reached

It suggests setting upper and lower inventory limits for each item

VISUAL MANAGEMENT



In the **two-bin system**, the items are stored at two different bins.



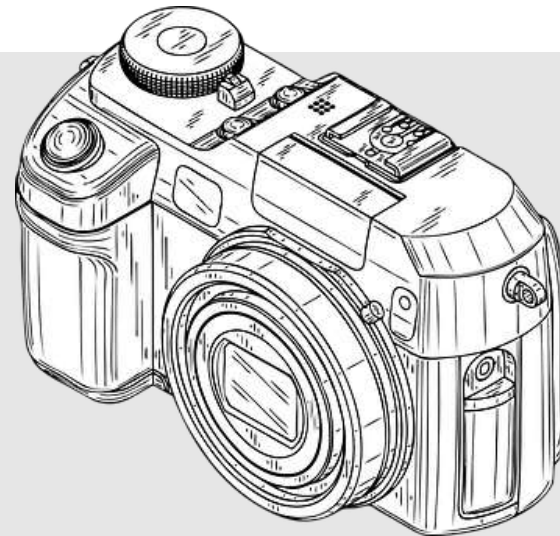
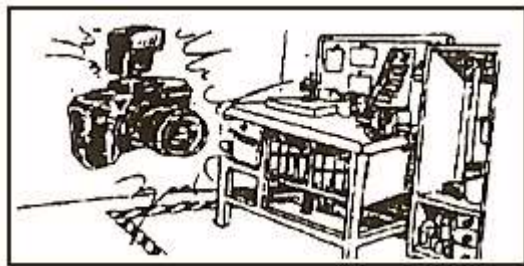
TWO-BIN SYSTEM

The first is intended for supplying the current demand and the second for supplying the demand during the replenishment period

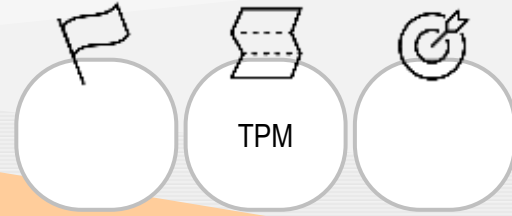
VISUAL MANAGEMENT



Post photos about how an area should be organized to remind people of the standard.

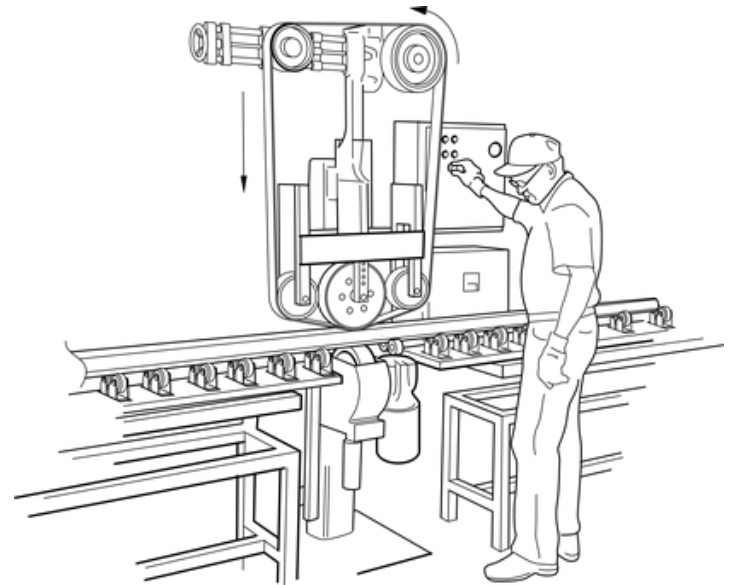


VISUAL MANAGEMENT

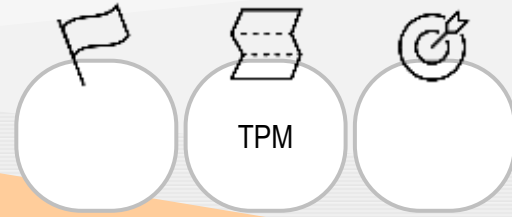


TPM visuals can be effective in identifying and preventing abnormalities from turning into failures.

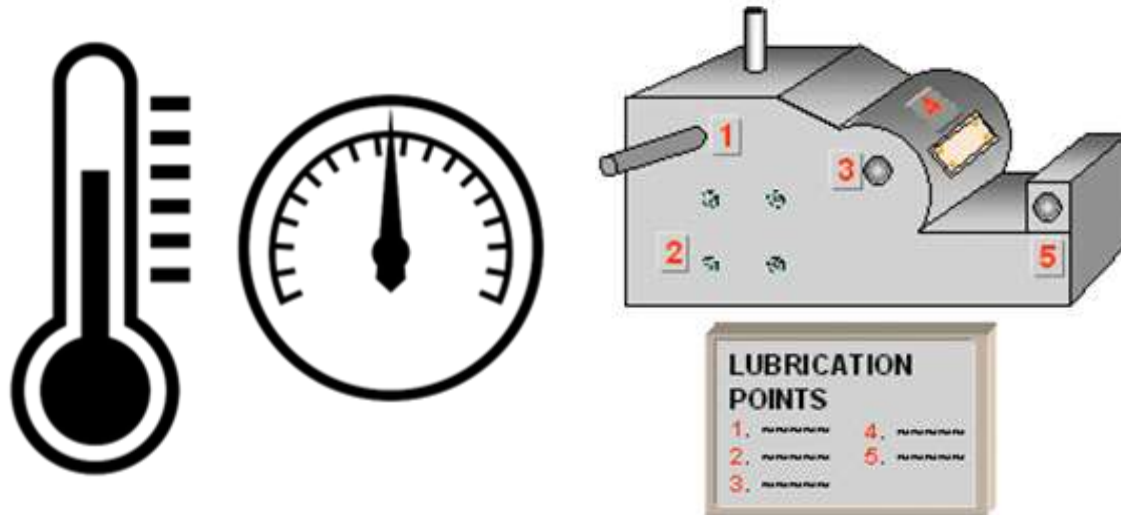
If something is not normal,
we want to make that **as
apparent as possible!**



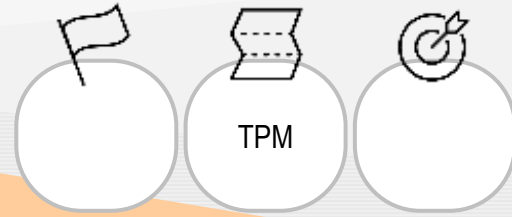
VISUAL MANAGEMENT



Marking gauges, oil levels and lube points are examples of visual controls that enable employees to easily **detect abnormalities** and out-of-specification conditions.



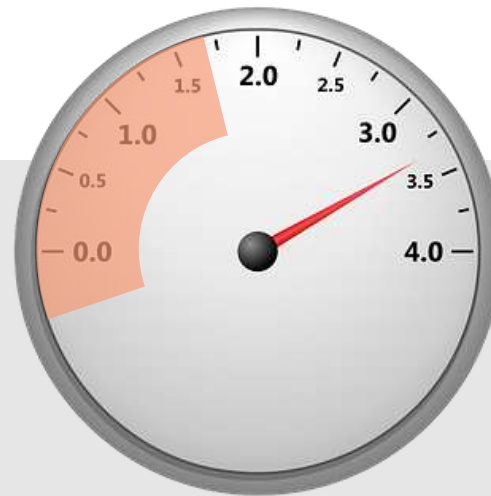
VISUAL MANAGEMENT



Color coding can be applied to gauges and other measuring devices to visually monitor whether process parameters remain within acceptable or safe ranges.

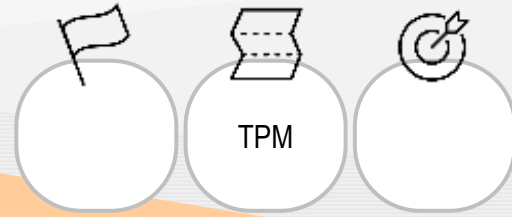


BEFORE



AFTER

VISUAL MANAGEMENT

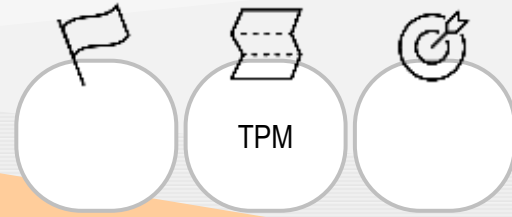


Colored sleeves can be used to identify all the tools within a particular kit, team or area.

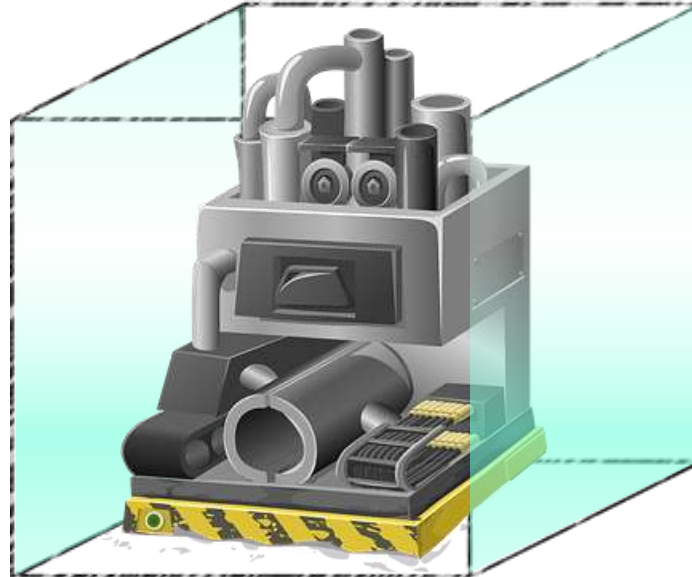


This will help reducing the time spent looking for lost tools

VISUAL MANAGEMENT



Transparent machine guards and covers will enable to see the running process of the machine, and as a result, the machine will be stopped less frequently.



VISUAL MANAGEMENT



An **area information board** is used to post visual information regarding the status of an operation for a specific area.



VISUAL MANAGEMENT

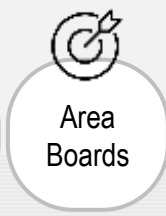
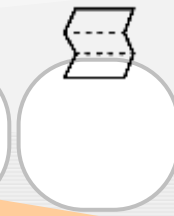
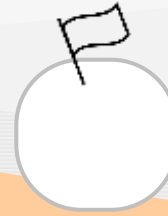


It is useful to communicate **status updates** to ensure all employees are on the same page.



It is not just a kind of wallpaper but a real **team collaboration tool**, and should be part of the daily management process

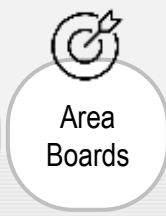
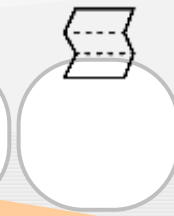
VISUAL MANAGEMENT



Daily meetings can be conducted in front of the board to discuss the previous day's issues and plan for the work ahead.



VISUAL MANAGEMENT



- ▶ **Reviewing** the board regularly is very important for the meetings to be productive.
- ▶ Data should be collected on a daily basis to update the board.



VISUAL MANAGEMENT

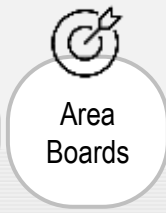
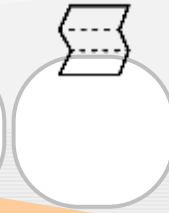


Information on boards should be fresh and up-to-date including schedules and customer requirements.

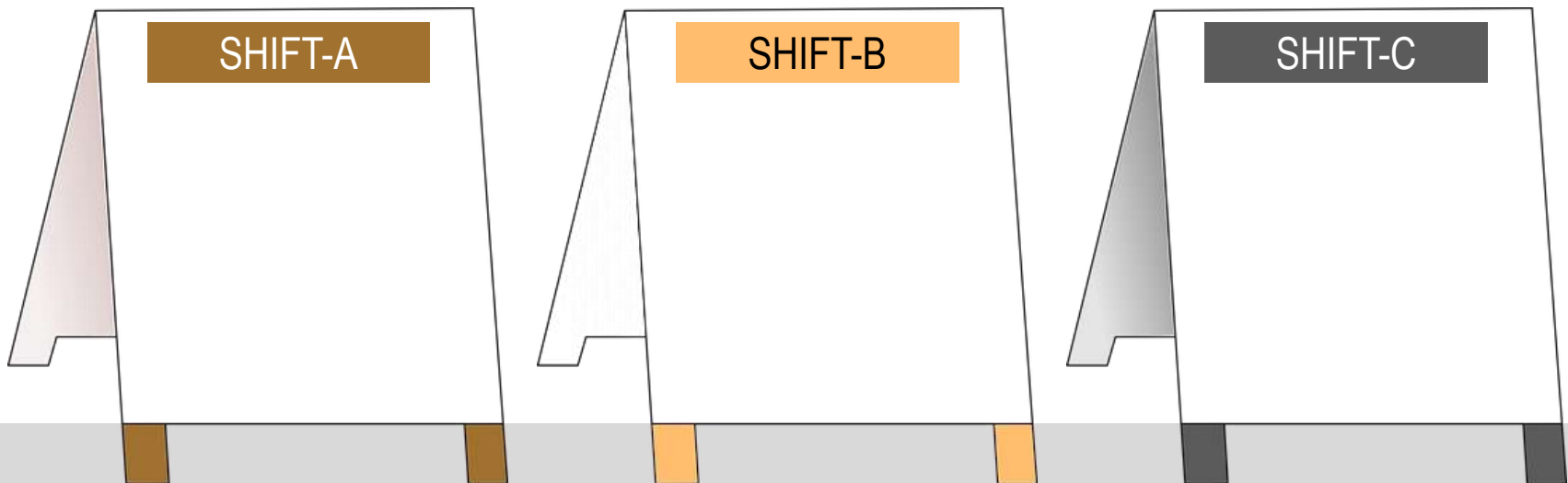
A good visual board is an ALIVE board!



VISUAL MANAGEMENT



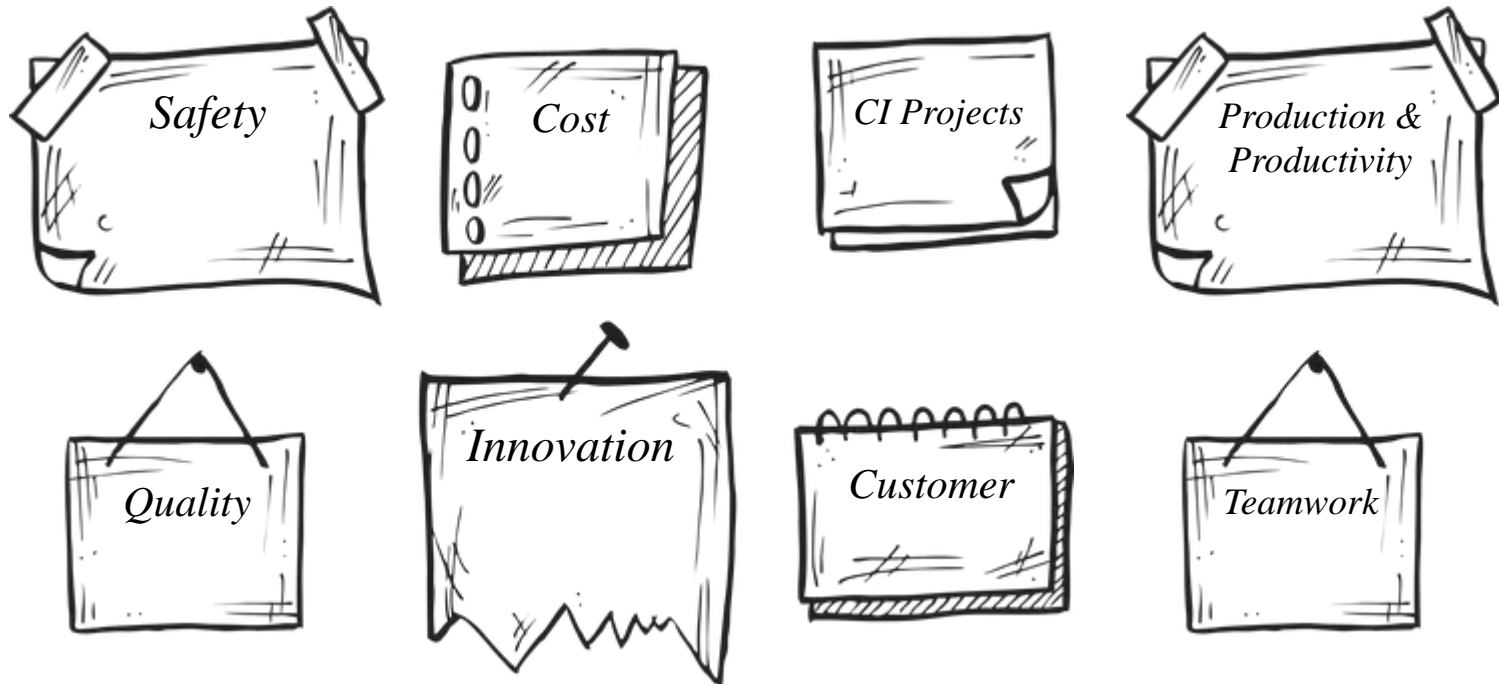
These stand-up meetings can also be useful to facilitate handovers in **multi-shift** operations.



VISUAL MANAGEMENT



All aspects of an operation can be discussed during the meetings.



VISUAL MANAGEMENT



What to post?

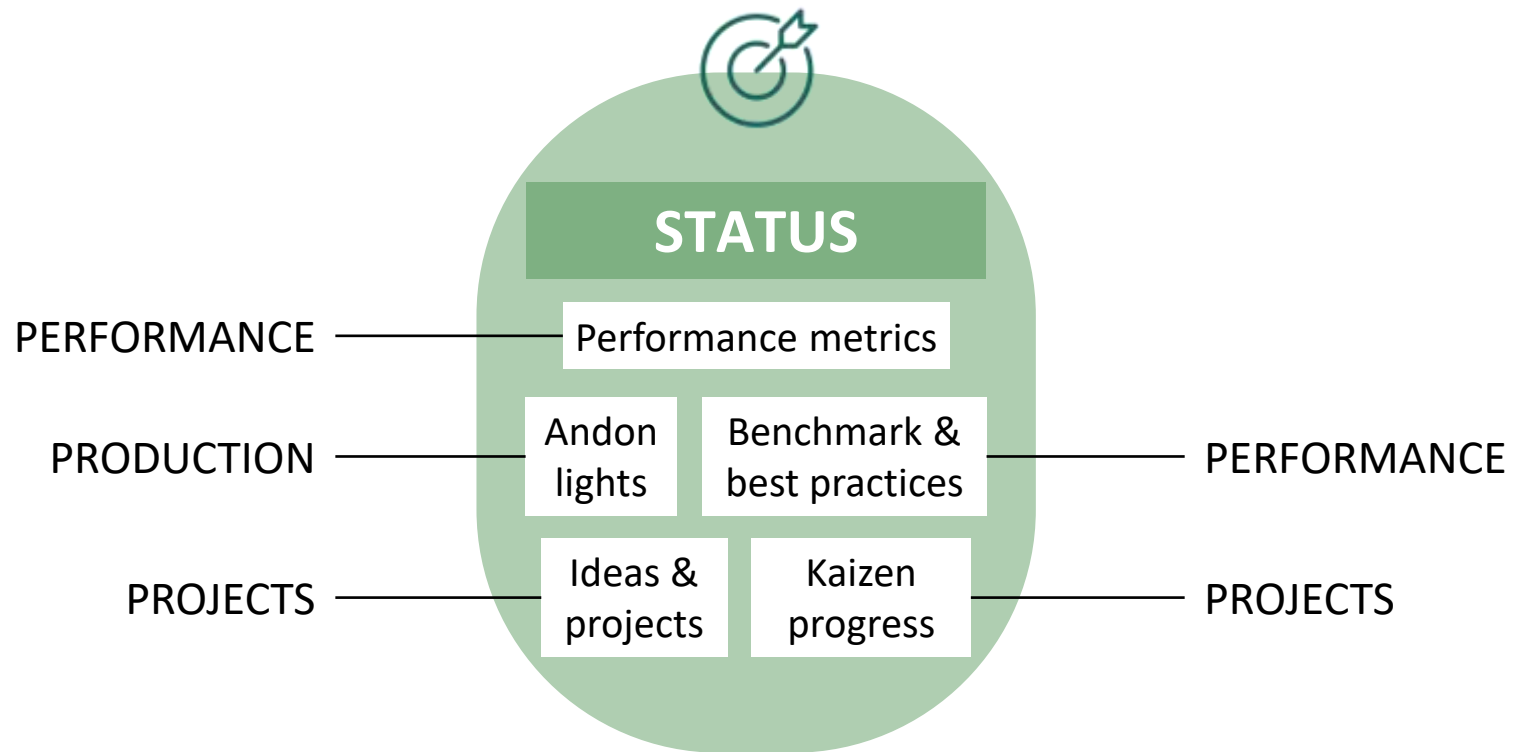


News, notifications, announcements, policy changes, events, accomplishments, records, ideas, best practices, etc.

VISUAL MANAGEMENT



Remember that status visuals are used to display the status of projects, processes, production, productivity & performance



VISUAL MANAGEMENT



Area information boards can be used to display . . .

Benchmark
information

Best practices
and lessons
learned

The status of
improvement
projects

Kaizen progress

Operational
records

Other
teamwork
activities

VISUAL MANAGEMENT



A workplace without a display of **performance metrics** is like a car without a speedometer.

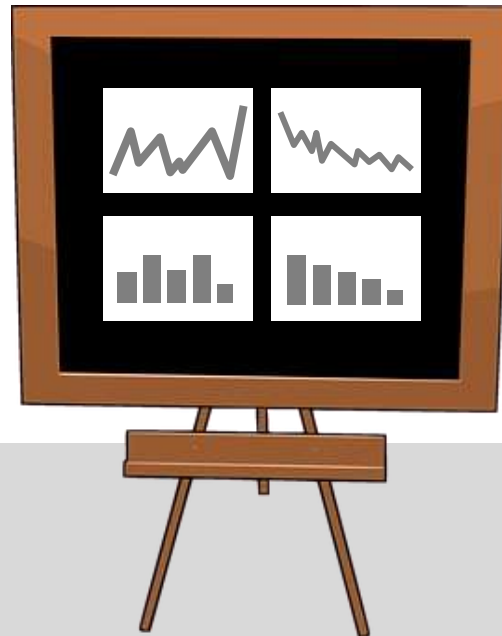


You may know where you are going but you have no idea when you will reach your destination

VISUAL MANAGEMENT



Performance metrics should be displayed in a visually appealing way to allow people to get insight into how the operation is performing.



VISUAL MANAGEMENT



BENEFITS of Visual Performance Boards



Presents the performance of a team, department, process & business



Directs the team discussions around priority areas

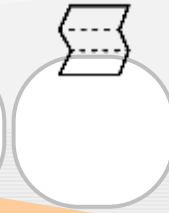
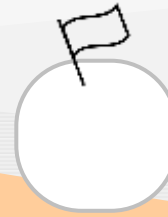


Creates a sense of purpose and drives motivation

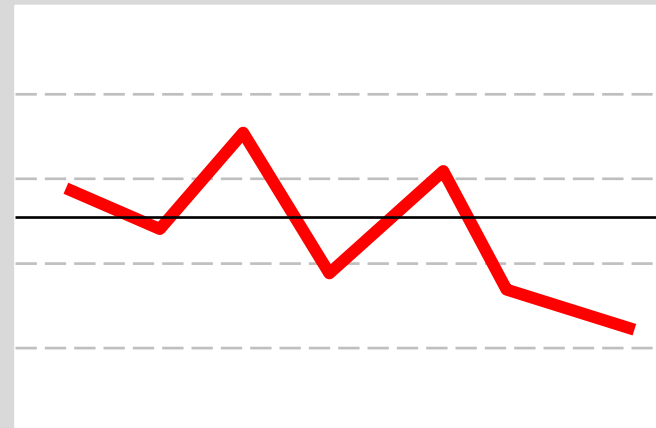
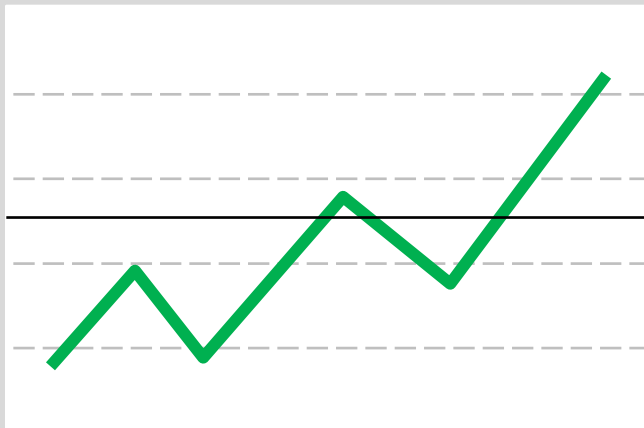


Serves as a communication tool for others outside of the team

VISUAL MANAGEMENT



Customized performance charts allow to compare actual performance against target.

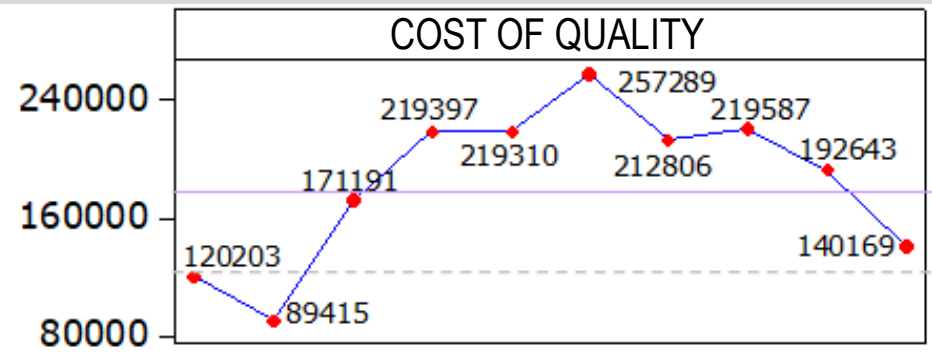
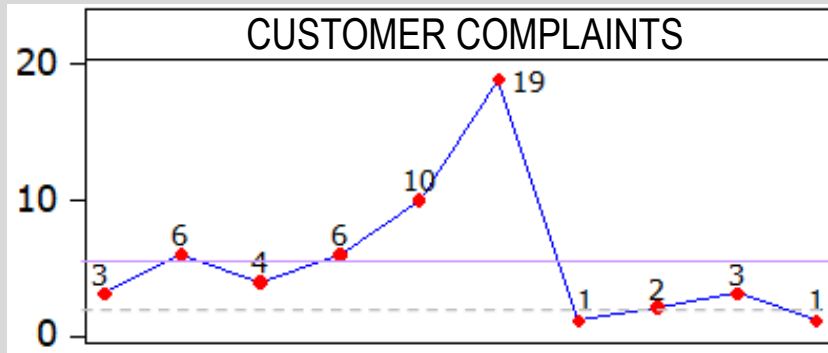


This can be shown on daily, weekly, monthly or quarterly basis

VISUAL MANAGEMENT



Monthly performance charts that show **averages** across time make it hard to understand and analyze the problems, and therefore, hard to improve.



VISUAL MANAGEMENT



Performance information should be **meaningful**, easy to understand, free of technical terms, accurate & up-to-date.

Everyone must be able to understand the message.



VISUAL MANAGEMENT



Metrics

- ▶ Real-time visual dashboards are used to **improve production control**.
- ▶ They make it easy to identify error conditions and allow to quickly respond to issues that would influence productivity.



VISUAL MANAGEMENT



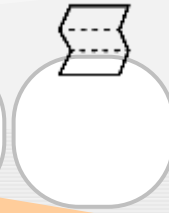
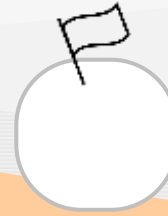
Production Summary Boards are used to monitor the output of an operation and see if it meets customer demand.



Hour	Target	Actual	Cum	Cum +/-
1	1000	950	950	-50
2	1000	1020	1970	-30
3	1000	1020	2990	-10
4	1000	900	3890	-110
5	500	600	4490	-10
6	1000	1050	5540	+40
7	1000	970	6510	+10
8	1000	950	7460	-40

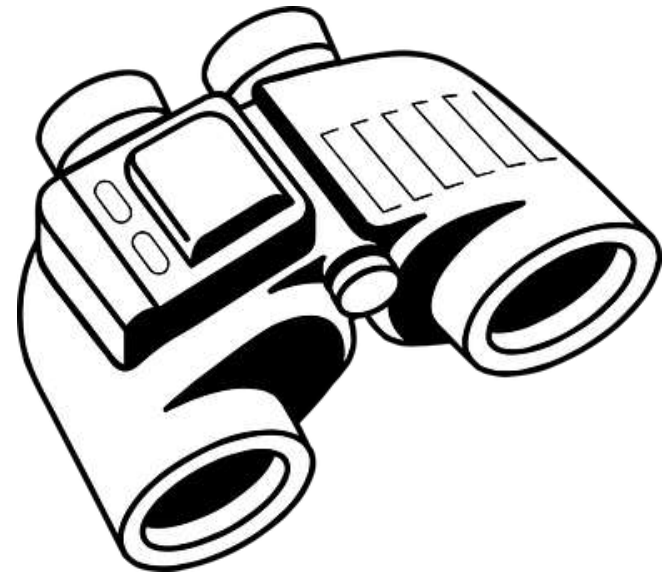
They may also display other information such as efficiency, Takt time, etc.

VISUAL MANAGEMENT

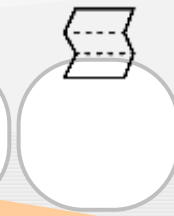


Production summary boards should be **visible** in the workplace, and everyone should be able to see where production stands.

This allows production and maintenance teams to quickly resolve process issues that may occur during production.

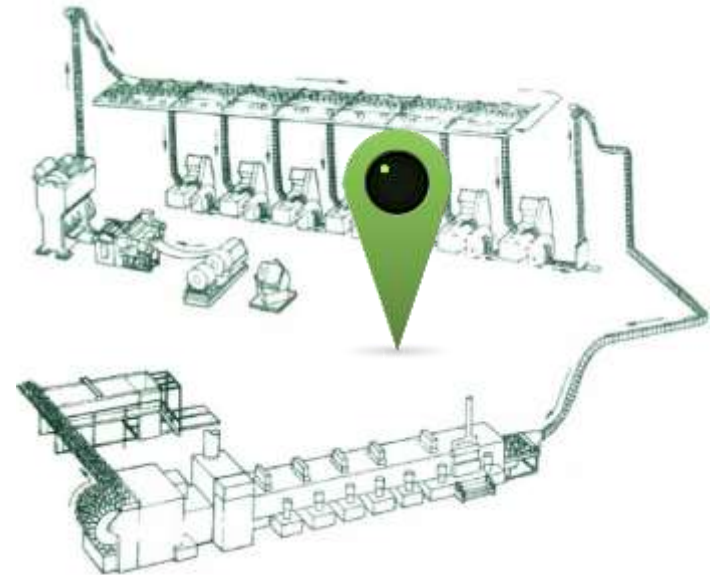


VISUAL MANAGEMENT



Process-related metrics need to be displayed near the machine or work cell.

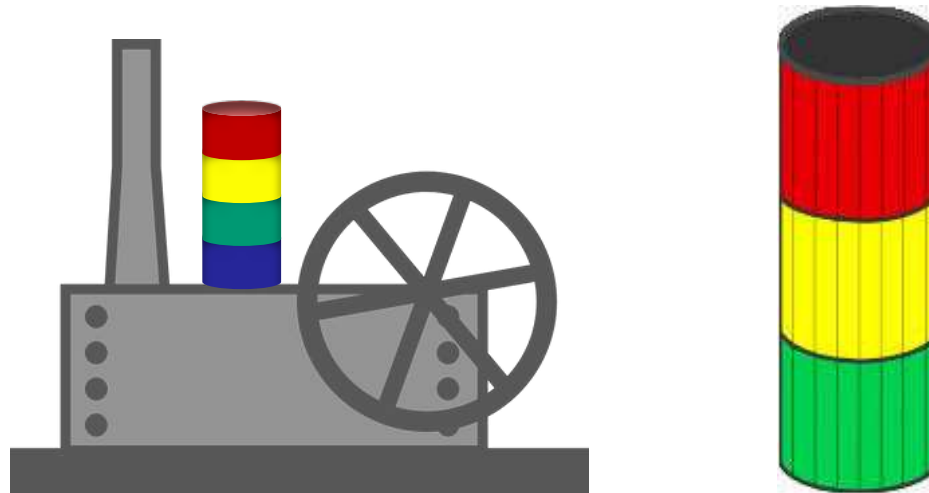
While **general plant metrics** need to be posted in a central location where everyone can see it easily.



VISUAL MANAGEMENT



Andon lights are powerful visual tools which are installed on production machines to indicate their current status.



Since they are visible from a **distance**, they are very useful in bringing immediate attention to problems as soon as they arise

VISUAL MANAGEMENT



For example, a light may **turn on** to indicate a shortage of raw materials, awaiting parts, or the need for maintenance.

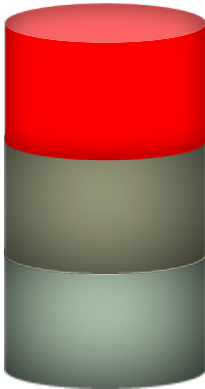
The system can include means to stop the process, so the issue get resolved.



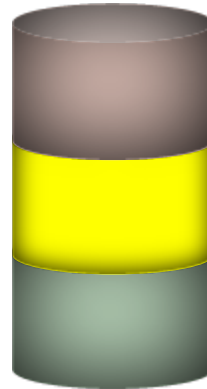
VISUAL MANAGEMENT



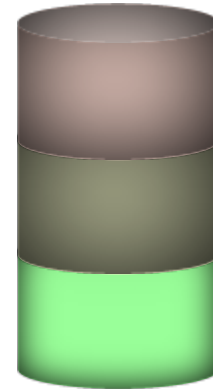
Each color represents a particular **state** of the machine or production line.



Operation is down for unknown reasons and needs further investigation



Operation is down (no order, maintenance, cleaning, quality checks, etc.)



Operation is normal

VISUAL MANAGEMENT

TIPS

to create an effective visual management system

Remember that your goal is to make the area more informative

Decide where you need to implement visual management

Decide who are your target audience

Decide who are going to be involved in the implementation effort

Use the colors and standards that are being used consistently

Determine the type of information that needs to be conveyed

Mark floors, add signs, label storage areas, post standard work, create visual boards, etc.

Let the teams help creating the visual controls and boards

Create a guide that describes the key elements associated with the visual management system

Design and use a checklist to evaluate your visual controls

Include reviewing the visual controls in your Gemba walks

VISUAL MANAGEMENT

An **effective** visual management system . . .

Relates to the
strategy of the
company

Displays
customer needs
& expectations

Shows identity
and directions

Makes
abnormalities
apparent

Communicates
standards and
instructions

Displays
performance
targets and
results

Easy to use and
understand

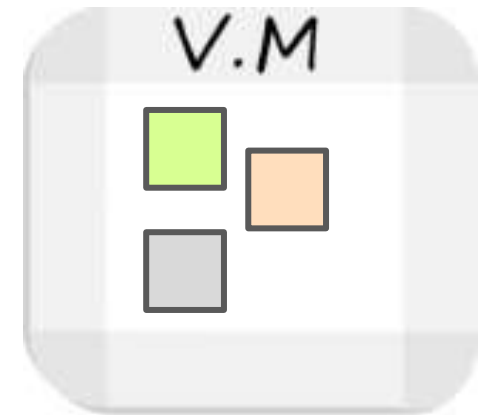
Links to action

VISUAL MANAGEMENT

Summary

Visual management is not just making charts and metrics visible on a wall!

It is a **real-time system of marking and visuals** that allows teams to respond promptly to signals to solve issues and support the production process.



VISUAL MANAGEMENT

Further Information

It is very common to conduct **Kaizen events** where the focus is to enhance the visibility of a specific process or work area



VISUAL MANAGEMENT

Further Information

Visual management is a **collaborative process**, and people engagement is key to the contribution they will provide later.

Listen to them, involve them, and let them own the visuals.



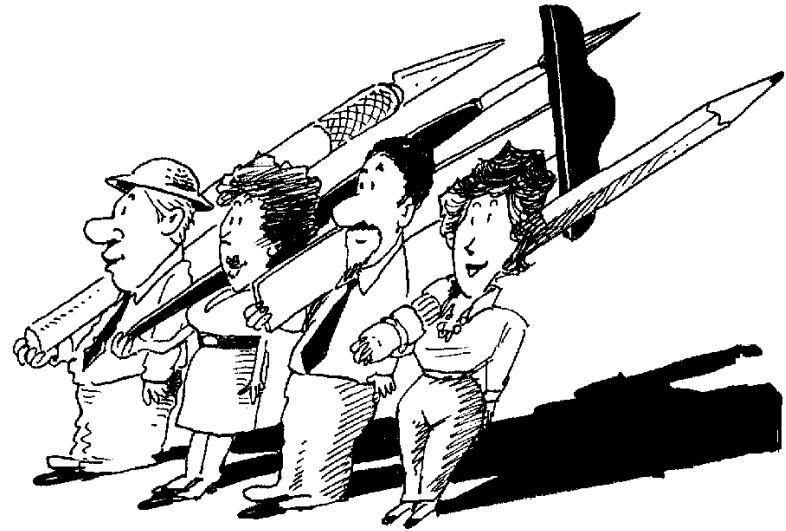
*See, know,
and act
collaboratively*

VISUAL MANAGEMENT

Further Information

If people from outside the area are **updating** the boards, then it will be seen that management are owning them.

In this case, don't expect anyone to read the boards or even care what's in them.



VISUAL MANAGEMENT

Further Information

Can also be useful for **support functions** in the production environment (such as accounting, sales, engineering and R&D) and in the service sector.



VISUAL MANAGEMENT

Further Information - Examples in the Service Sector

The queue counter display in a **bank**.



A sign indicating the different types of waste disposal bins in a **hotel** lobby.



A sign indicating cleaning in progress or wet floor in a washroom in a **shopping mall**.



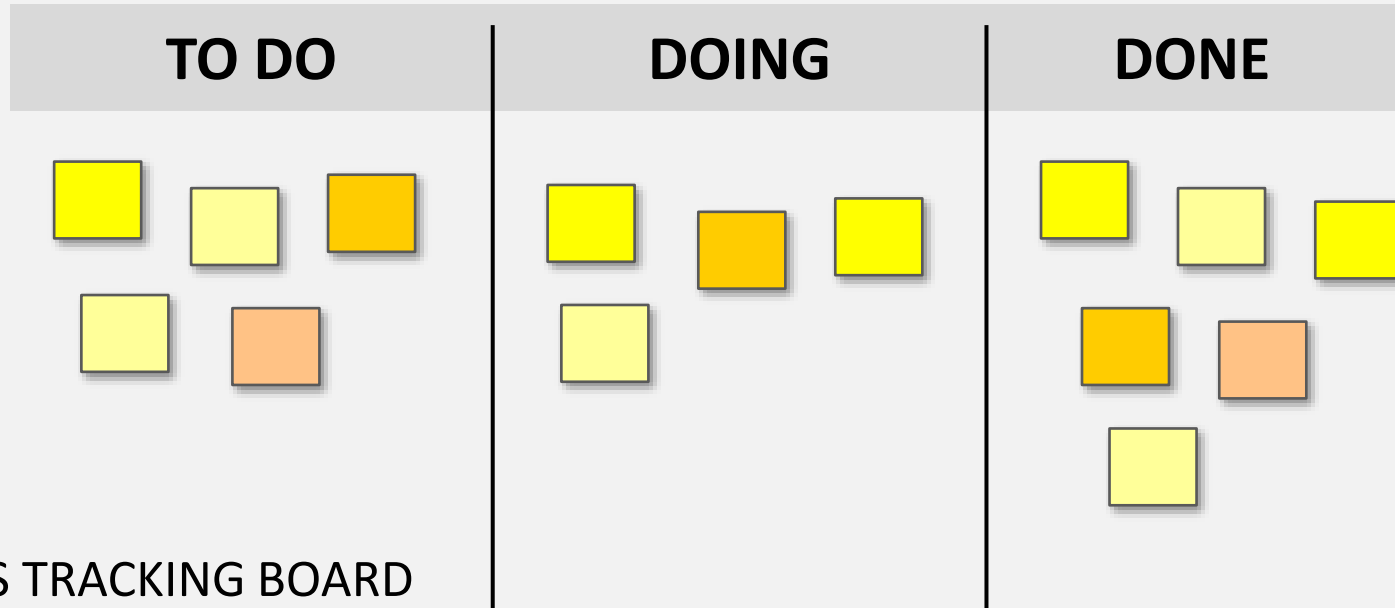
The signs in an **airport** that direct passengers to the luggage claim area.



VISUAL MANAGEMENT

Further Information

A **Kanban** provides a visual method of inventory control and uses color coded cards to supports a pull system.



PROGRESS TRACKING BOARD

VISUAL MANAGEMENT

Examples of how to eliminate waste using VM

Reduce **waiting** by visually defining work sequence.



Prevent excess **transportation** by labeling and marking locations and paths.



Reduce **motion** by ensuring all parts and tools are accessible and recognizable.



Eliminate excess **inventory** by improving visibility of storage.



Prevent **overproduction** by visually displaying production actuals and targets.



Eliminate excess **inventory** by improving visibility of storage.



Reduce **defects** by quickly responding to Andon signals.



Minimize the non-use of **skills** by visually sharing problems and working together to solve them.



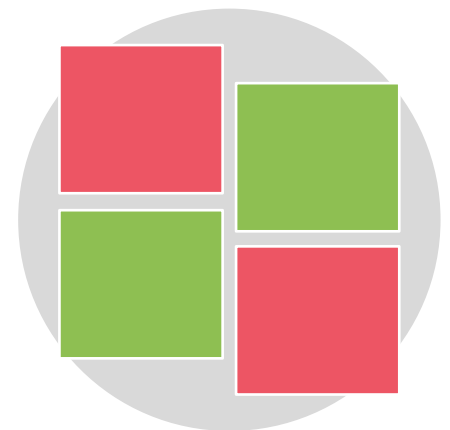
VISUAL MANAGEMENT

Kamishibai Board

A Kamishibai board is a visual management method that is used to manage **routine activities** in a workplace.

It can be used to audit safety and security measures as well as to confirm that standard work is being undertaken by all employees.

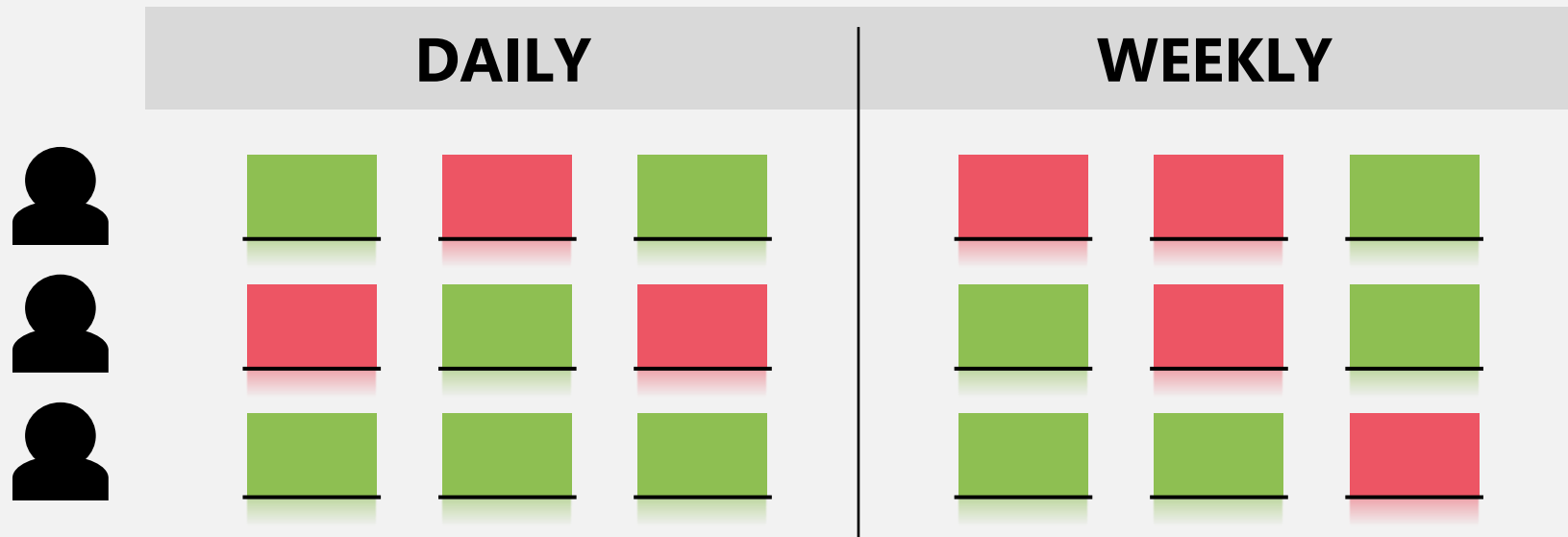
In its simplest form, it consists of a board and multiple cards that displays selected activities to be performed.



VISUAL MANAGEMENT

Kamishibai Board

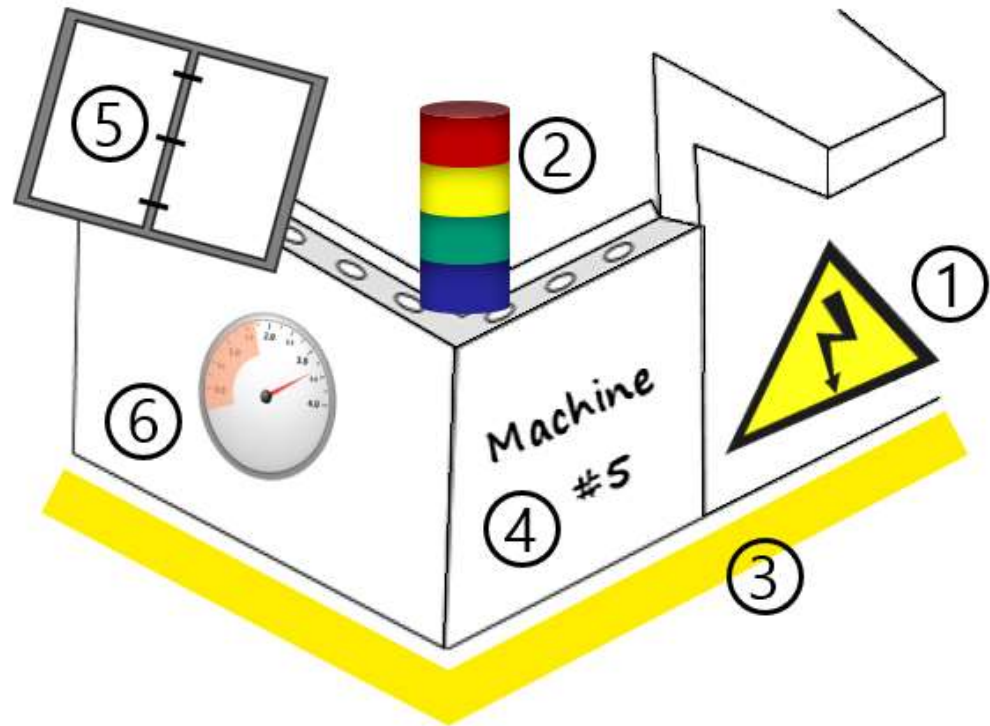
Typically, each card is red on one side and green on the other to indicate whether the activity has been completed or not.



VISUAL MANAGEMENT

Example from a Production Environment

- 1 Safety sign
- 2 Andon lights
- 3 Floor marking
- 4 Machine identity
- 5 Visual instructions
- 6 Gauge marking



VISUAL MANAGEMENT

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