SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY

COURSE NAME : 19OE114 –TOTAL QUALITY MANAGEMENT
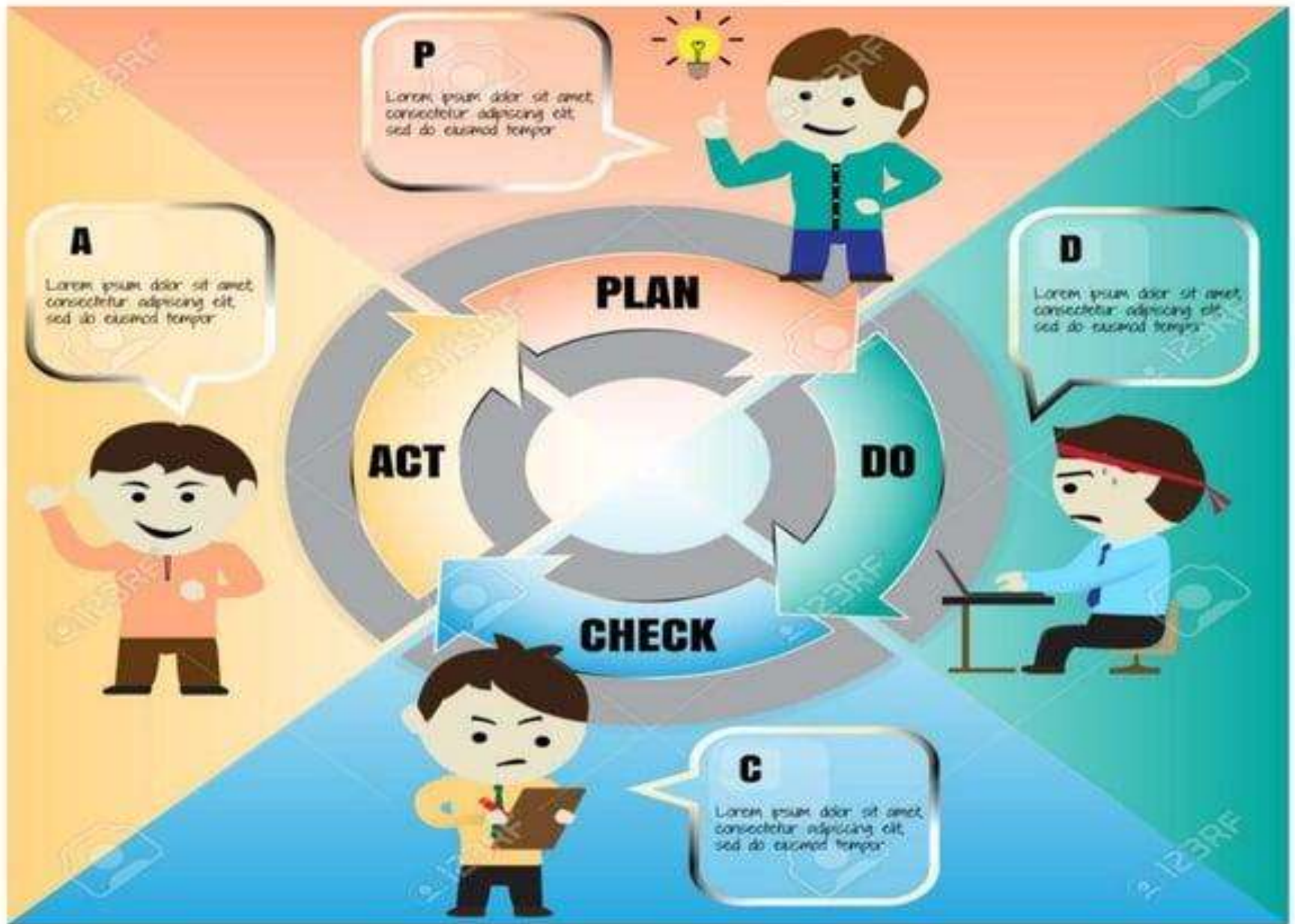
III YEAR / VI SEMESTER

Unit 2- TQM PRINCIPALS

PLAN DO AND CHECK ACT

PDCA cycle

- PDCA (plan-do-check-act, sometimes seen as plan-do-check-adjust) is a **repetitive four-stage model** for continuous improvement (CI) in business process management.

- The model is implemented to improve the quality and effectiveness of processes within product lifecycle management, project management, human resource management (HRM), supply chain management (SCM) and many other areas of business.

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Continuous process improvement cycle using PDCA cycle

Continuous Process Improvement cycle

- Phase I Identify the Opportunity
- Phase 2 Analyze the process
- Phase 3 Develop the optimal solution(s)
- Phase 4 Implementation
- Phae 5 Study the results
- Phase 6 Standardise the solution
- Phase 7 Plan for the future

Act | Plan
Study | Do

Benefits of PDCA cycle

- Daily routine management
- Problem solving process
- New product development
- Human resource development
- Project management
- Continuous development
- Vendor development
- Process trails
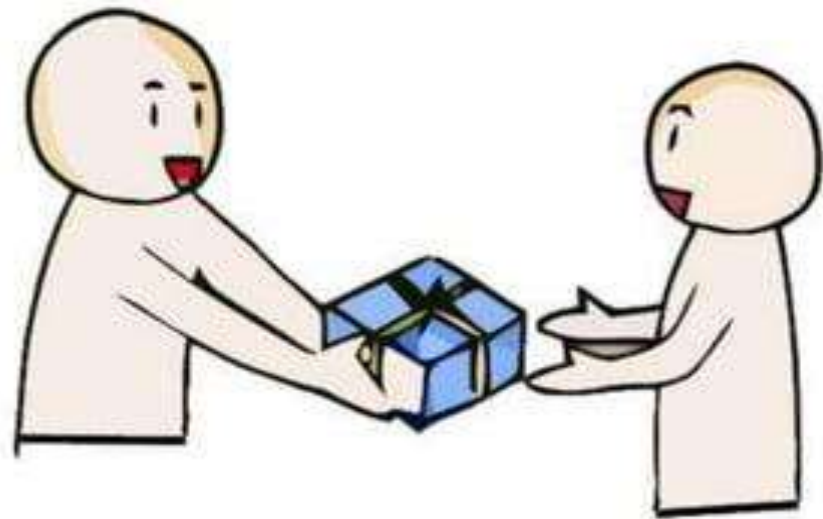
'5S' Housekeeping

- 5S is a philosophy and a way of **organizing and managing the workspace** and work flow with the **intent to improve efficiency** by eliminating waste, improving flow and reducing process unreasonableness

Yeah, it's nice and tidy dear. Now how about you use these tools and go get us SOME FOOD!

5S: Sort-Set-Shine-Standardize-Sustain

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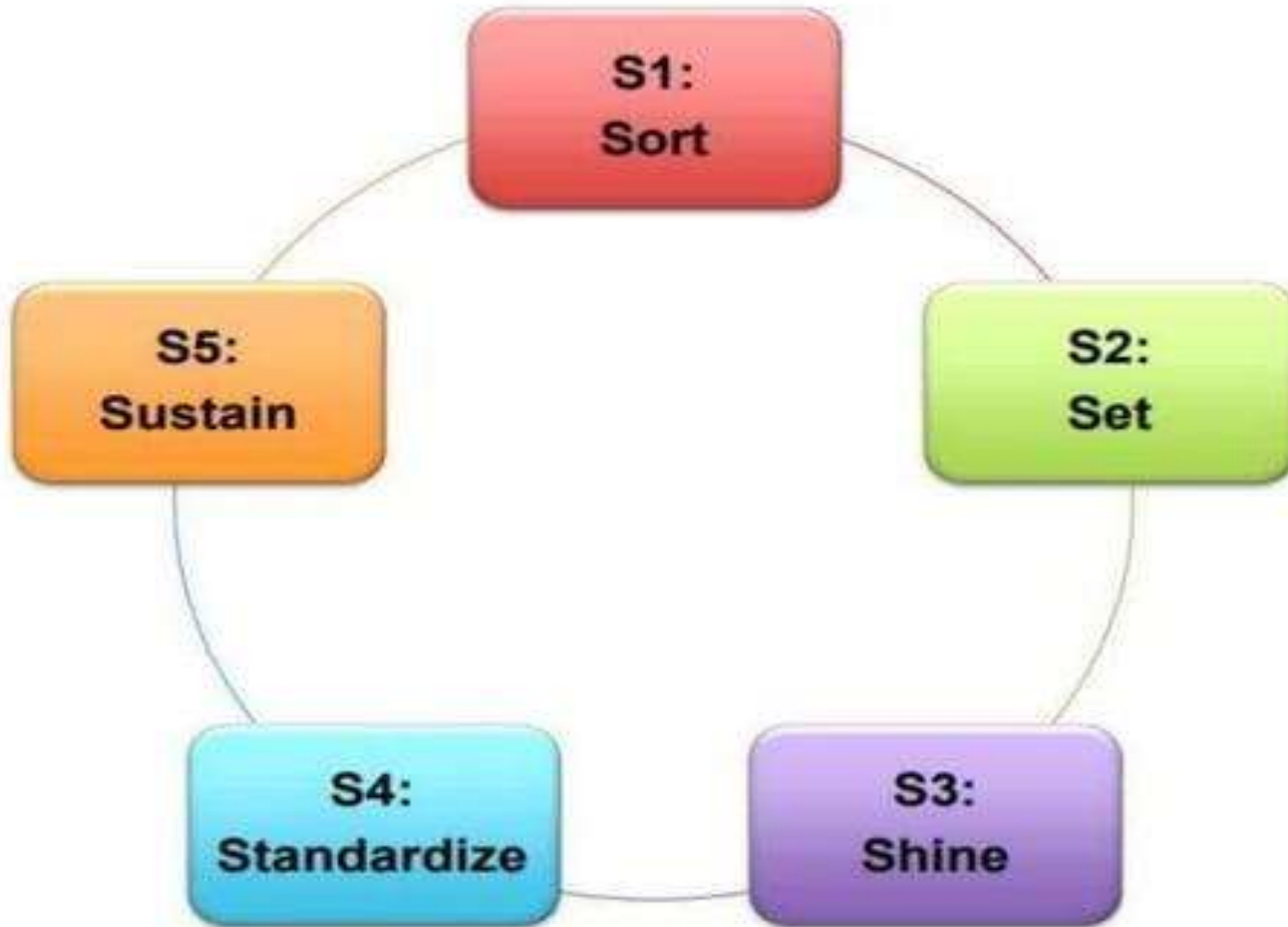
Japanese term	English term	Meaning
Seiri	Sort	Separate out all unnecessary things and eliminate them
Seiton	Set	Arrange the essential things in order, so that they can be easily accessed
Seiso	Shine	Clean the work place every thing without fail
Seiketsu	Standardize	Standardizing the way of maintain cleanliness
Sitsuke	Sustain	Practice FIVE S daily. Make it a way of life. This also means commitment.

Objective 5S

- Neat and clean work place
- Productivity
- Safety
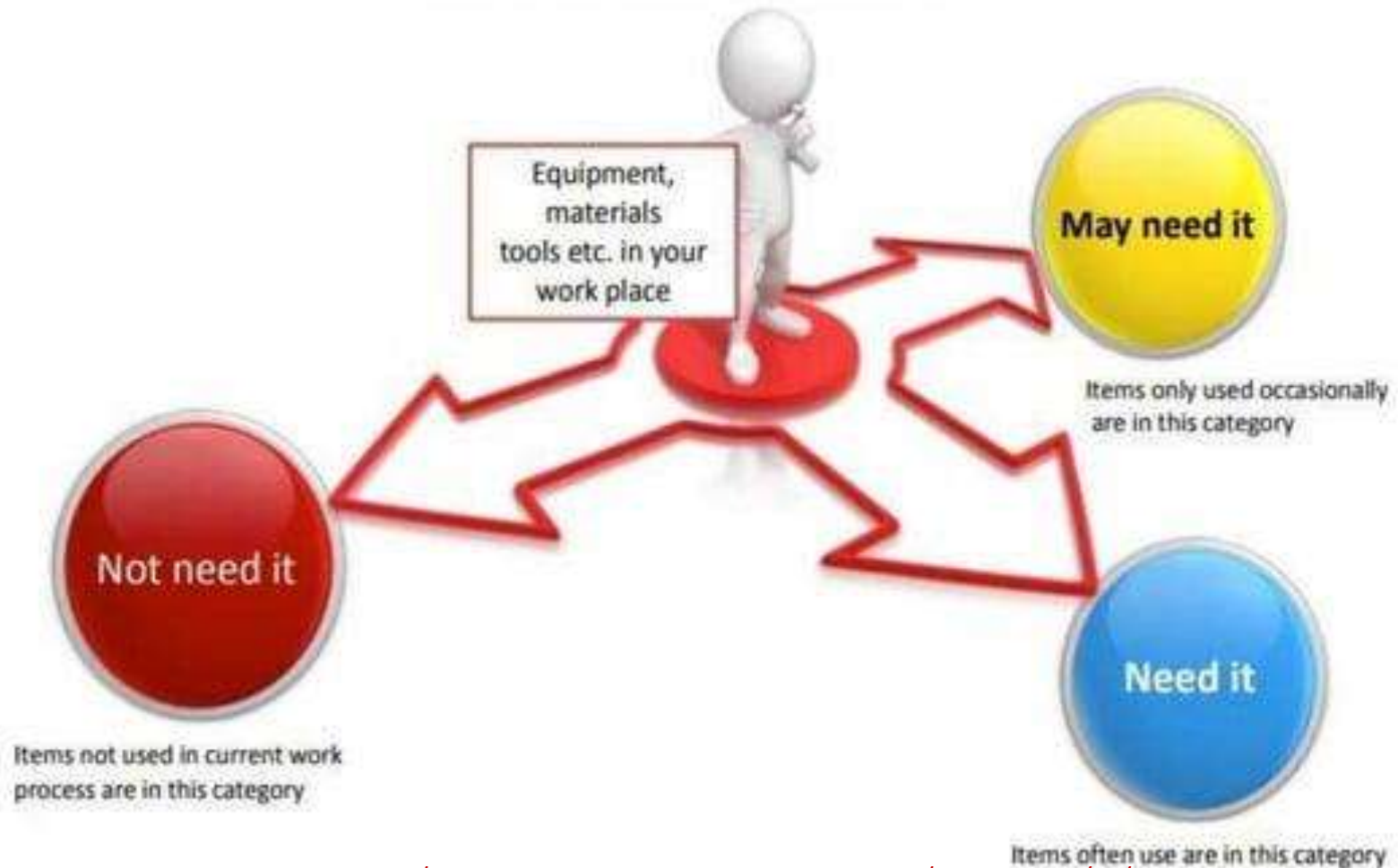- Work commitment
- Standardize work efficiency

S1: Sort

- Focuses on eliminating unnecessary items from the workplace
- Categorize equipment, furniture, tool in your working place into the following 3 categories
    1. Necessary
    2. Unnecessary
    3. May not necessary
- This step will also help with the "just in case" attitude

S1: Sort

S5: Sustain

S2: Set

S4: Standardize

S3: Shine

S1: Sorting activities

Equipment, material, tools files, furniture etc. can be categorized based on the frequency of use!

Equipment, materials tools etc. in your work place

May need it

Items only used occasionally are in this category

Not need it

Items not used in current work process are in this category

Need it

Items often use are in this category

Examples of "Sorting"

- Place "Red tag" for categorization of items to identify unnecessary items
- Move unnecessary items(broken tools, obsolete jigs and fixtures, scrap and excess raw material etc.) to central stored area
- Free up valuable floor space (Space utilization)
- Finding abnormality of equipment and tools (Out of order, missing parts etc.)

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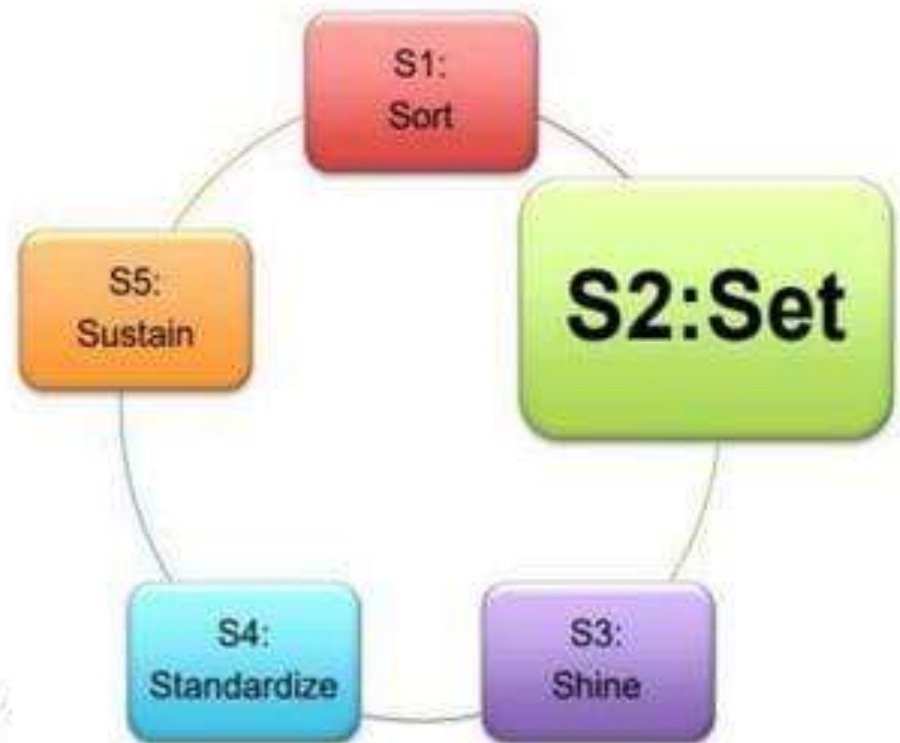
Before Implementation 5S

After implementing 5S

S2: Set

- "Set" is based on finding efficient and effective storage of necessary items
- Apply "Can see, Can take out, and Can return" philosophy
- This will save time and energy to look for something

S1: Sort

S2:Set

S3: Shine

S4: Standardize

S5: Sustain

S2: Setting activities

Think not only "beatification.
Need to consider workflow and
arrange items

* **Needed items**
* **Items often use**
   (with current work process)

Have consensus among
co-workers on where and
how to organize necessary
items

Use 5S tools for proper
Organization of items
such as
* Labeling
* Color coding
* Numbering
* Zoning etc.

Arrange them properly based on
"Can see, Can take-out, Can
return" Philosophy

Example of "Setting" activities

- Labeling , numbering, zoning for clear identification of storage areas to keep necessary items

- Set necessary items matching with workflow to minimize unnecessary movement and transportation time

Yeah, it's nice and tidy dear. Now how about you use these tools and go get us SOME FOOD!

BASELINE PHOTOGRAPHS AUGUST 2008 — ADMINISTRATION PROCESS — SEPTEMBER 2008

Before 5S — MID. YEAR — After 5S

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S3: Shine

- Cleaning up one's workplace daily so that there is no dust on floors, machines or equipment.

- It will create ownership and build pride in the workers

S3: Shining activities

- Clean floor, windows and walls.
- Clean and Maintain office automation machines, medical equipment and tools, office furniture
- Develop and follow regular cleaning and Maintenance schedule

Example of "Shining" activities

- Daily sweeping and mopping of floor, bathroom, corridor etc.

- Regular cleaning and maintenance of equipment and tools

- Periodical check for changes in equipment and the service area such as: leaks, vibration, misalignment, breakage etc.

- IPC activities such as hand hygiene, waste segregation are also part of shine

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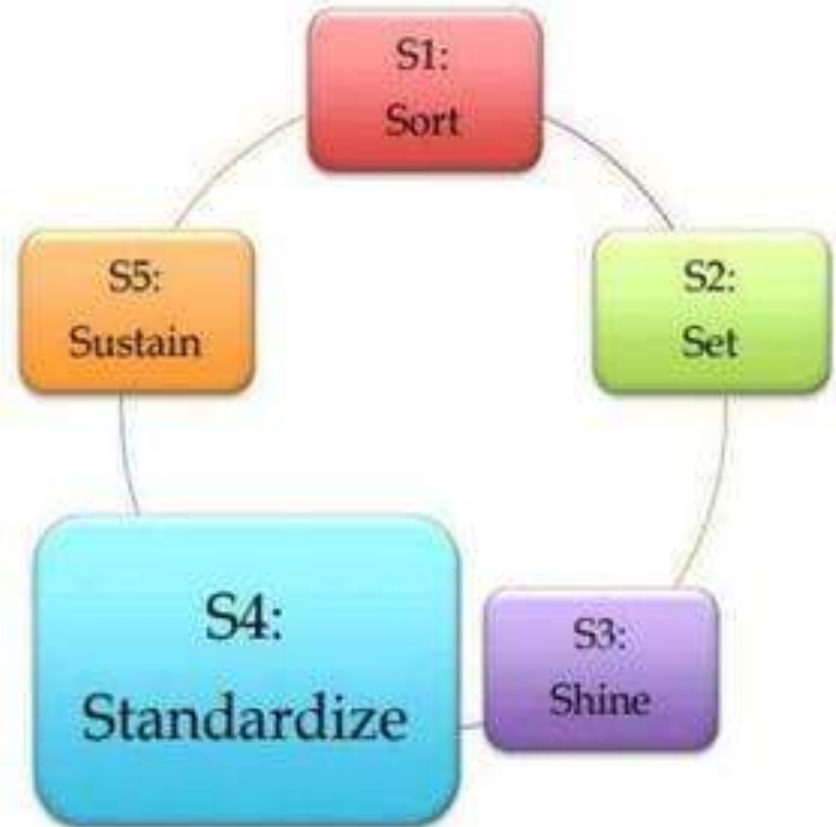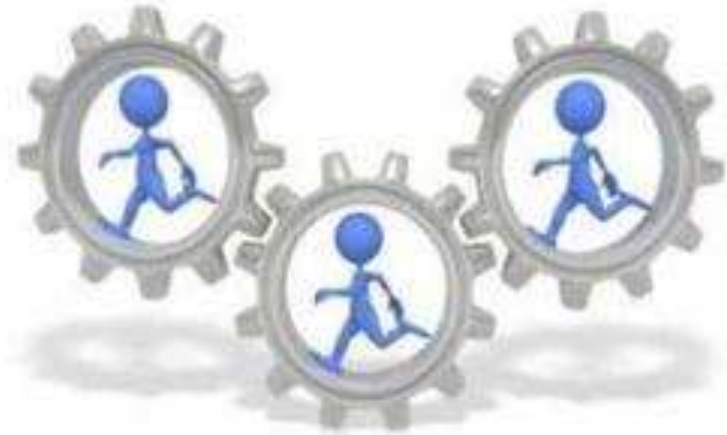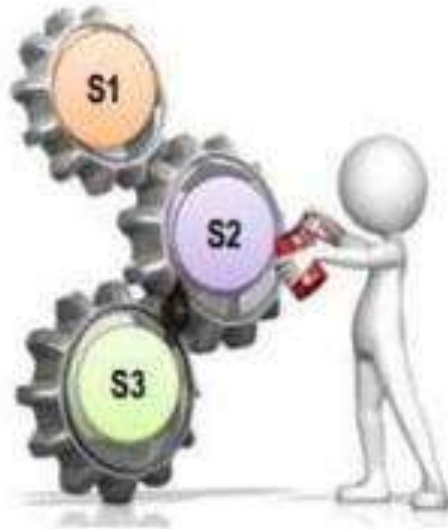
BEFORE

AFTER

S4: Standardize

- Maintain an environment where S1 to S3 are implemented in the same manner throughout the organization

- Give opportunities to employees to take active part in the development of these standards.

S1: Sort
S2: Set
S3: Shine
S4: Standardize
S5: Sustain

S4: Standardizing activities

Develop mechanism to standardize
S1-S3 implementation for continuation

Standardization will leads equalization of activities
= "Production leveling and smoothing"

Standardization is useful for;
* Easy implementation of S1 to S3 activities
* Equalization process output
* Everyone's participation

Example of "Standardize" activities

- Work instructions, Standard Operating Procedures (SOPs)
- Checklist development and regular usage for SOPs
- Mechanism and format development for ordering supplies, reporting etc
- Color coding for waste segregation
- Standardized common symbols
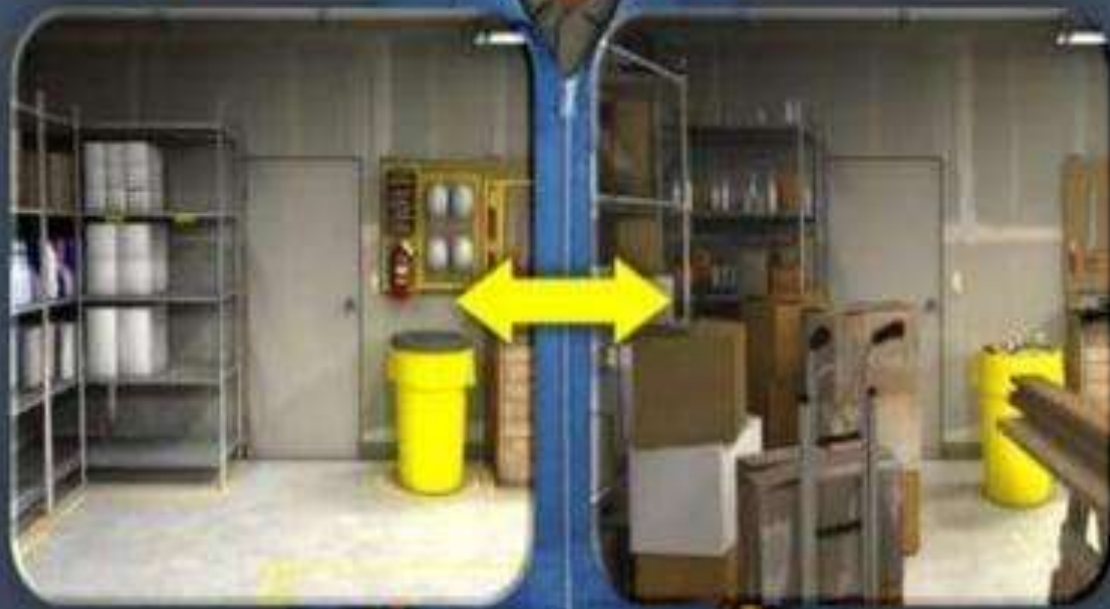
Example Standardize

Inspection station

Avalon parts   Camry parts
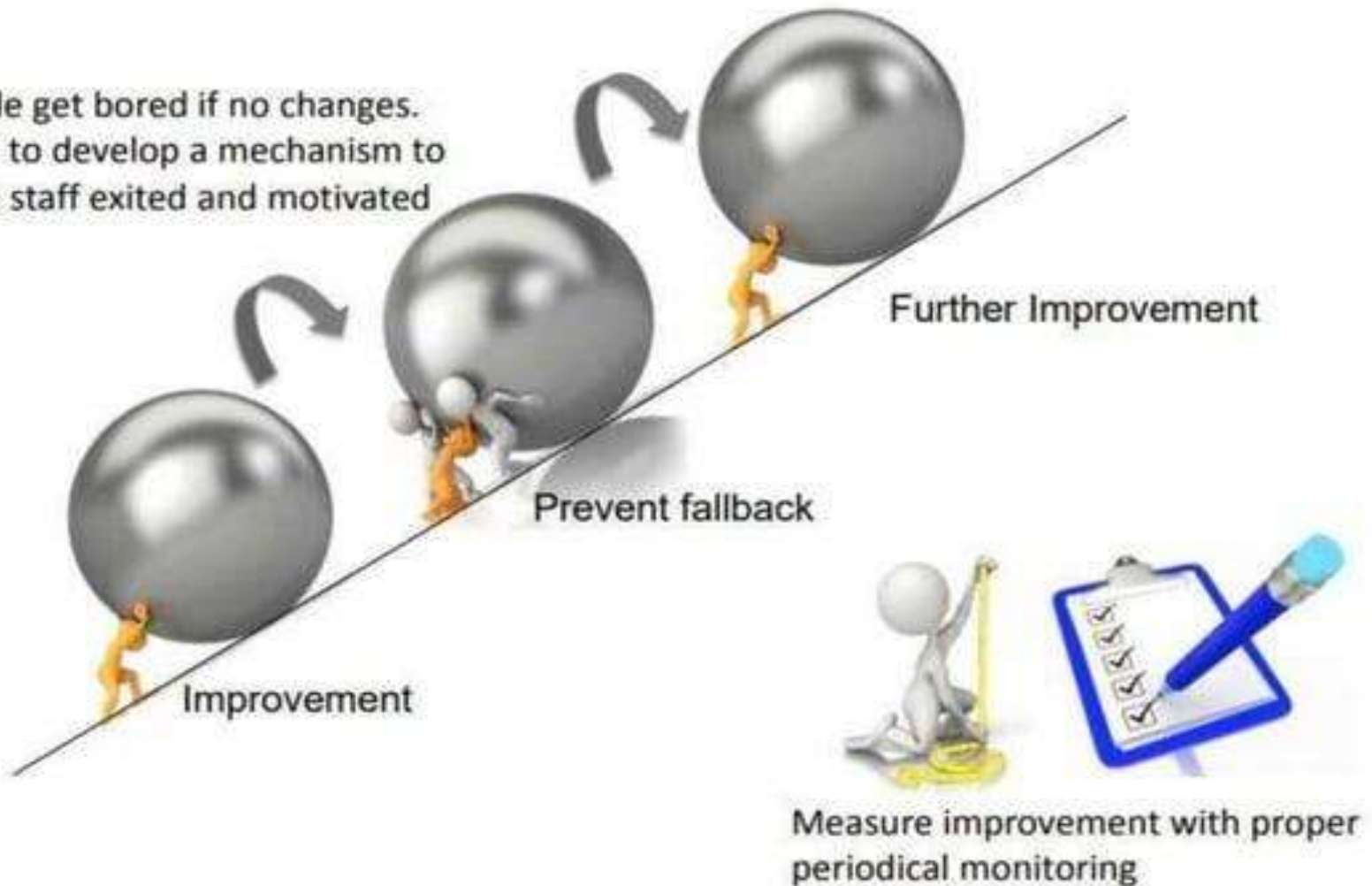
S5 : Sustain

- Maintain S1-S4 through discipline, commitment and empowerment

- It focuses on defining a new mindset and a standard in workplace

S5: Sustainability activities

People get bored if no changes. Need to develop a mechanism to make staff exited and motivated

Further Improvement

Prevent fallback

Improvement

Measure improvement with proper periodical monitoring

Example of "Sustain" activities

- Regular progress reporting
- Refresher training
- Periodical evaluation of 5S activities with proper advices for continuation and further improvements
- Appreciation, recognition and awarding on good 5S activities
- Reminder using 5S corner, new letters, good practice sheet etc.

5S Conceptual Framework
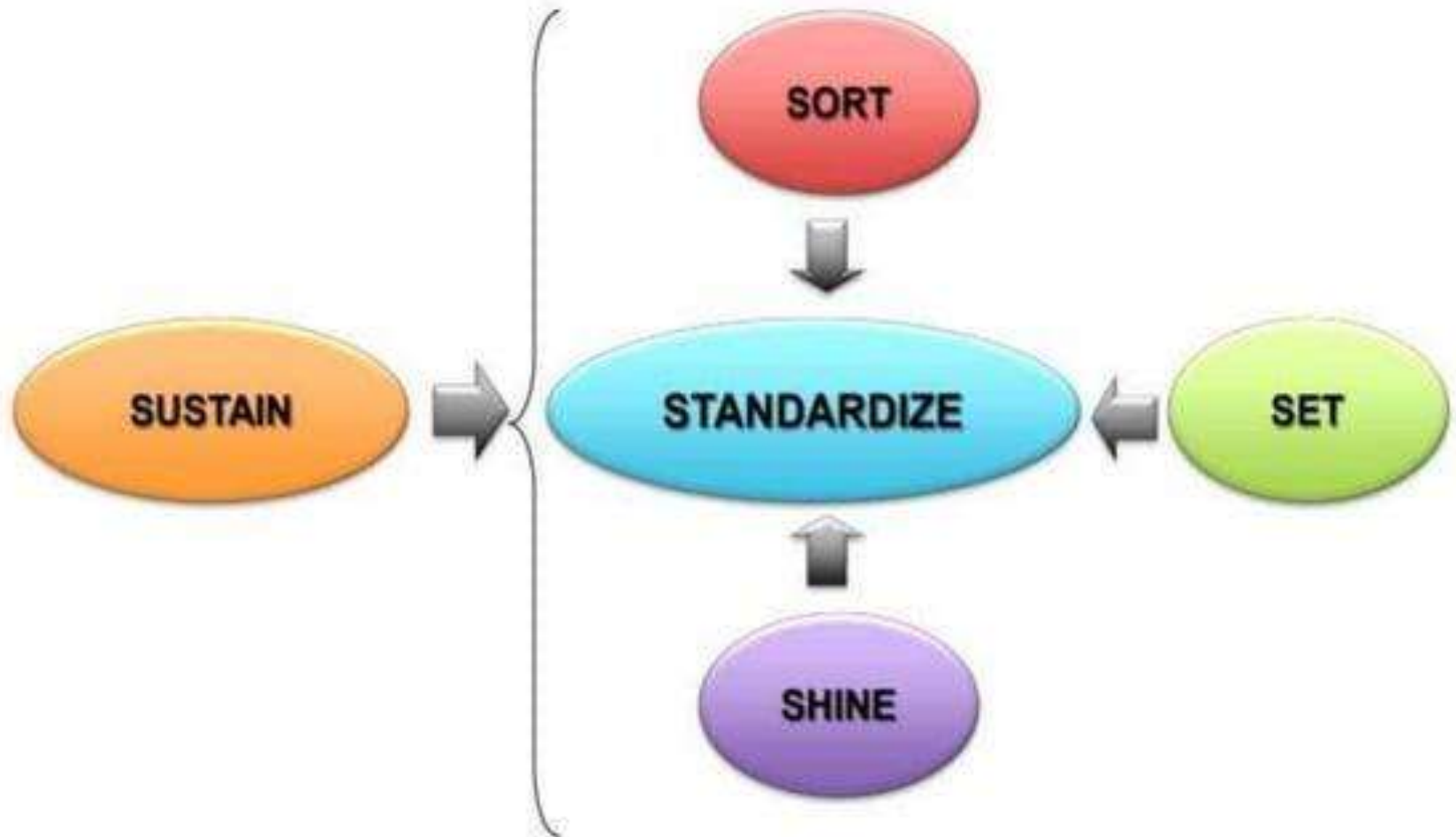
5S is becoming popular for seven solid reasons

1. Visible results enhance the generation of more and new ideas
2. The workplace gets cleaned up and better organized
3. Hospital and office operations become easier and safer
4. Results are visible to everyone - insiders and outsiders
5. People are naturally disciplined
6. People take pride in their clean and organized workplace
7. As a result the company's good image generates more better

Target of 5S

Targets of Five-S include:

✓ **Zero** defects leading to higher quality
✓ **Zero** waste leading to lower cost
✓ **Zero** delays leading to on time delivery
✓ **Zero** injuries promoting safety
✓ **Zero** breakdowns bringing better maintenance