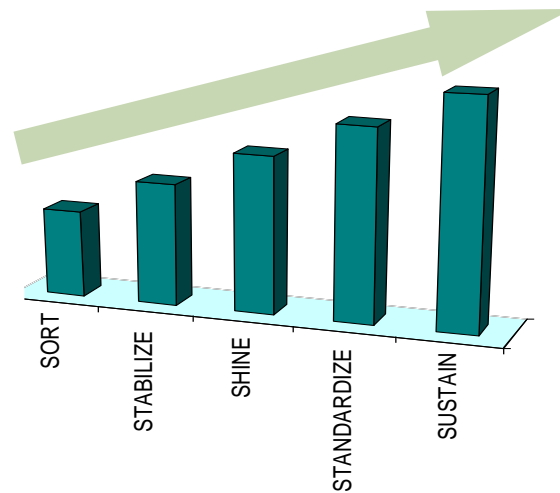# 5S METHOD

SORT STABILIZE SHINE STANDARDIZE SUSTAIN

5S METHOD

Project Title: Lean Learning Academies (LLA)

Project Number: 503663-LLP-1-2009-1-BE-ERASMUS-ECUE

Grant Agreement: 2009 – 3308 / 001 - 001

Sub-programme or KA: ERASMUS

LLA
★ ★ ★ ★ ★
LEAN LEARNING ACADEMY

Education and Culture DG

Lifelong Learning Programme

Education and Culture DG
Lifelong Learning Programme

Course content

1. What is 5S and why we want to implement it?
2. 5 steps of implementing 5S
3. Seven wastes in organisation
4. What we should to do to implement 5S?
5. 5S implementation – Step 1 – Sort
6. 5S implementation – Step 2 – Stabilize
7. 5S implementation – Step 3 – Shine
8. 5S implementation – Step 4 – Standardise
9. 5S implementation – Step 5 – Sustain
10. 5S audit
11. Benefits of introducing 5S
12. Results of introducing 5S
13. An example of 5S implementation on a work stand
14. Another examples

1. What is 5S and why we want to implement it?

SORT

Clearly distinguish needed items from unneeded and eliminate the later
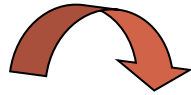
STABILIZE

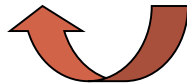Keep needed items in the correct place to allow for easy and immediate retrieval

SUSTAIN

Maintain established procedures

STANDARDIZE

The method by which Sort, Stabilize and Shine are made habitual

SHINE

Keep the workplace neat and clean

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1. What is 5S and why we want to implement it?

Does it have to be like this?

Does it have to be like this?

Does it have to be like this?

Does it have to be like this?
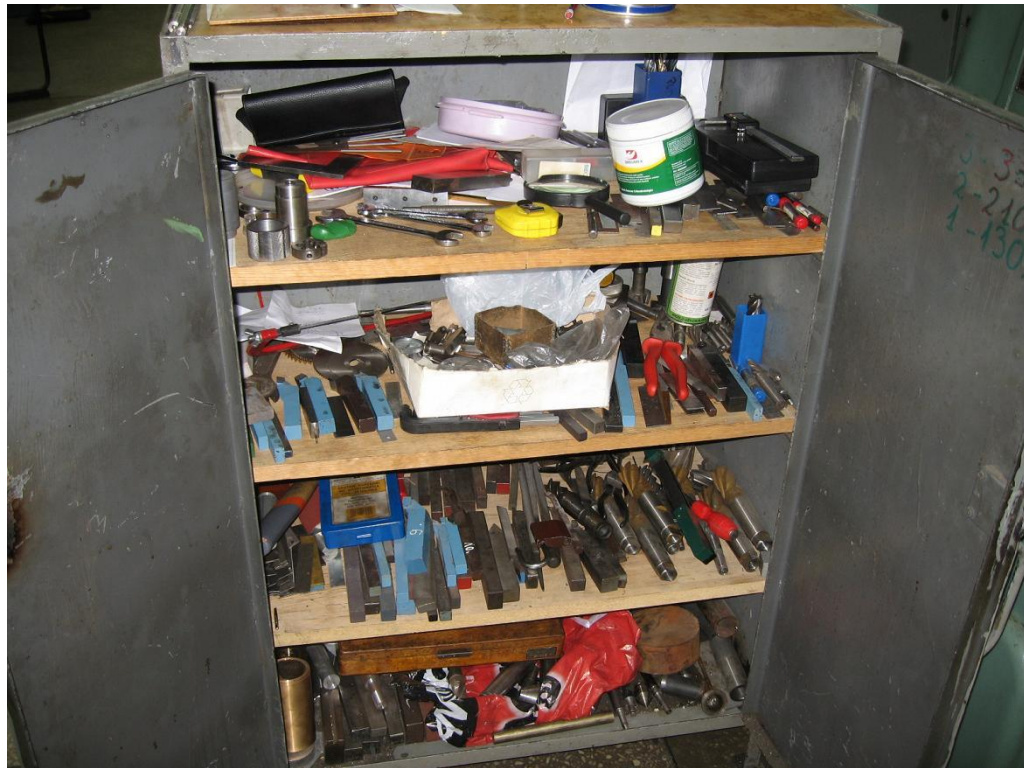
5S is a basis of KAIZEN, that is continual improvement

5S is a workplace, safe and free from risk

5S ensure that there is a place for everything and that everything is in its place – clean and ready to use

2. 5 STEPS of implementing 5S

STEP 1. **Sort –** classify things and eliminate useless things

STEP 2. **Stabilize (set in order) –** arrange things, which you still
  need in a systematic way

STEP 3. **Shine –** clean a work stand

STEP 4. **Standardize –** standardize normal work activities and develop work
  instructions

STEP 5. **Sustain –** sustain 5S as a work culture

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1. Overproduction is about producing a product or service before the customer wants it or about producing more than the customer ordered.

2. Waiting - idle time created when material, information, people, or equipment is not ready. Waiting occurs when a person or machine must wait to do assigned work.

3. Transportation waste occurs when materials, documents, supplies, etc. are moved from one location to another, when it is not really necessary.

4. Over processing is any operation or process step that does not add value from the customer's view (or over-processing beyond the customer's specifications).

5. Inventory - more supplies, material, or work on hand than is currently needed.

6. Motion - any unnecessary movement of a person that does not add value to the product or service is considered waste.

7. Defects - work that contains errors, rework, mistakes, or lacks something that is necessary.
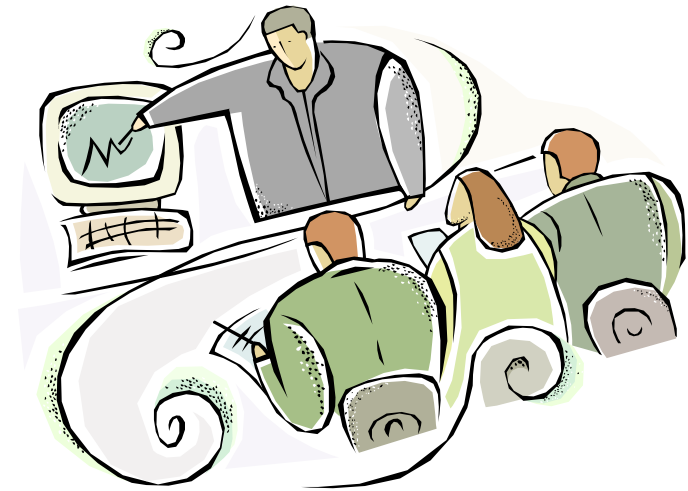
By implementing 5S we approach zero wastes

To implement 5S we should:

- train employees

- implement each step in a proper order

Train employees

During a training we should tell our employees:

- What are the goals of the 5S project?

- What the project depends on?

- Why we implement 5S?

- What advantages we expect to achieve?

- What are the basic rules for implementation?

Prepare to 5S implementation

- Show results of implementing 5S in other organisations (films, pictures)

- Provide literature

- Organize visits in companies, which implemented 5S

- Ensure management support (budget, recourses, involvement)

- Establish teams

- Establish goals for teams

Sort (serii) means separating needed tools and materials and eliminating everything, what is needless; means also careful identification of tools, parts and instructions, which are assigned to a certain stand

Sort results in:

- stores decreasing
- better use of the working place
- prevent the loss of things
- creating work places free from needless tools and materials

1. SORT

How to do it?

- Separate needed things from useless things

- Use red tags to identify valuable items that are not needed in the workplace and bring them to a red tag area

- Give back borrowed things; when you don't remember who you borrowed something from take that thing to a contact place

- Get rid of useless things

- When you hesitate – throw it out

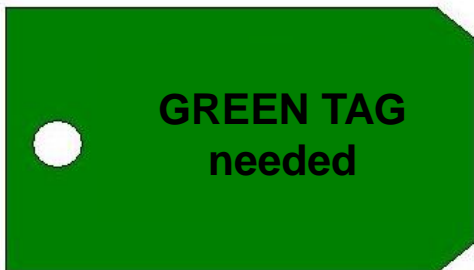- Divide needed things into groups depending on destination

STEP 1 - Sort

<u>Tags</u>

RED TAG
not needed

- We use red tags for items, which we don't need

YELLOW TAG
it may be needed

- We use yellow tags for items, we don't know if they will be needed or not

GREEN TAG
needed

- We use green tags for items, which are needed

	Tag No: .
5S RED TAG	

Name:	Date:

Item description:

Work area:

Category:

1) Raw material	7) Office Equipment
2) Work-in-process	8) Customers Files
3) Finished Goods	9) Unknown
4) Tools	10) Others
5) Customer Tools	
6) Surplus Equipment	

Red tag area

Red tag area logbook
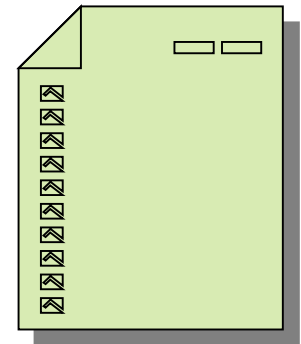
Where to search?

- On the floor

- In passages

- In work places

- In corners

- Under apparatus

- In small rooms

- In offices

- In store houses

- In cabinets

Look for useless equipment
- machines, tools...

Look for useless furniture

- chairs, tables, cabinets...

Search storing places

- lockers, shelves, hangers...

Search walls

- hooks, slogans, bulletins...

Look for useless materials

- damaged materials, out of order materials, obsolete materials, raw materials, products...

Look for useless things
- clothes, shoes, rubbish, sandwiches...

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Stabilize (seiton) means marking materials and tools and locating them in assigned places, which makes their utilization easy

Stabilize results in:
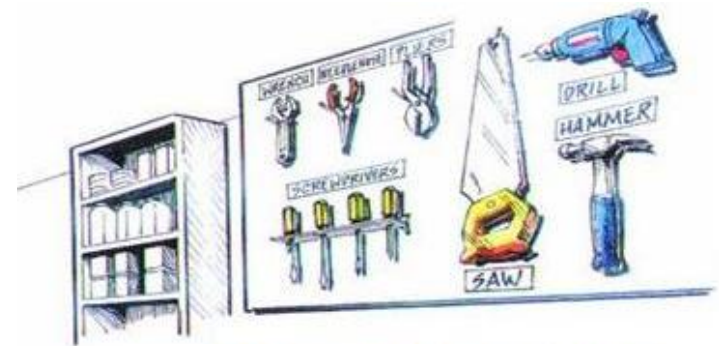
- shorten time to find needed things
- safety improvement
- easy detection of lost things

2. STABILIZE

- Make a plan to arrange things

- Provide cabinets, shelves, labels, hangers…

- Allocate each thing

- Plan arranging things depending
  on the frequency of their usage

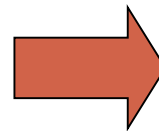- Use visual aids: lines, arrows,
  marks, colours…

FIND PLACES FOR:

- machines, instruments, tools, detergents...

- furniture, cabinets, shelves, chairs, bulletin boards, hangers, tables...

- materials, raw materials, semi-products, products in production, damaged parts, ready products...

- other things: pencils, rulers, documentation, charts, plans, cloths, personal things, rubbish,...
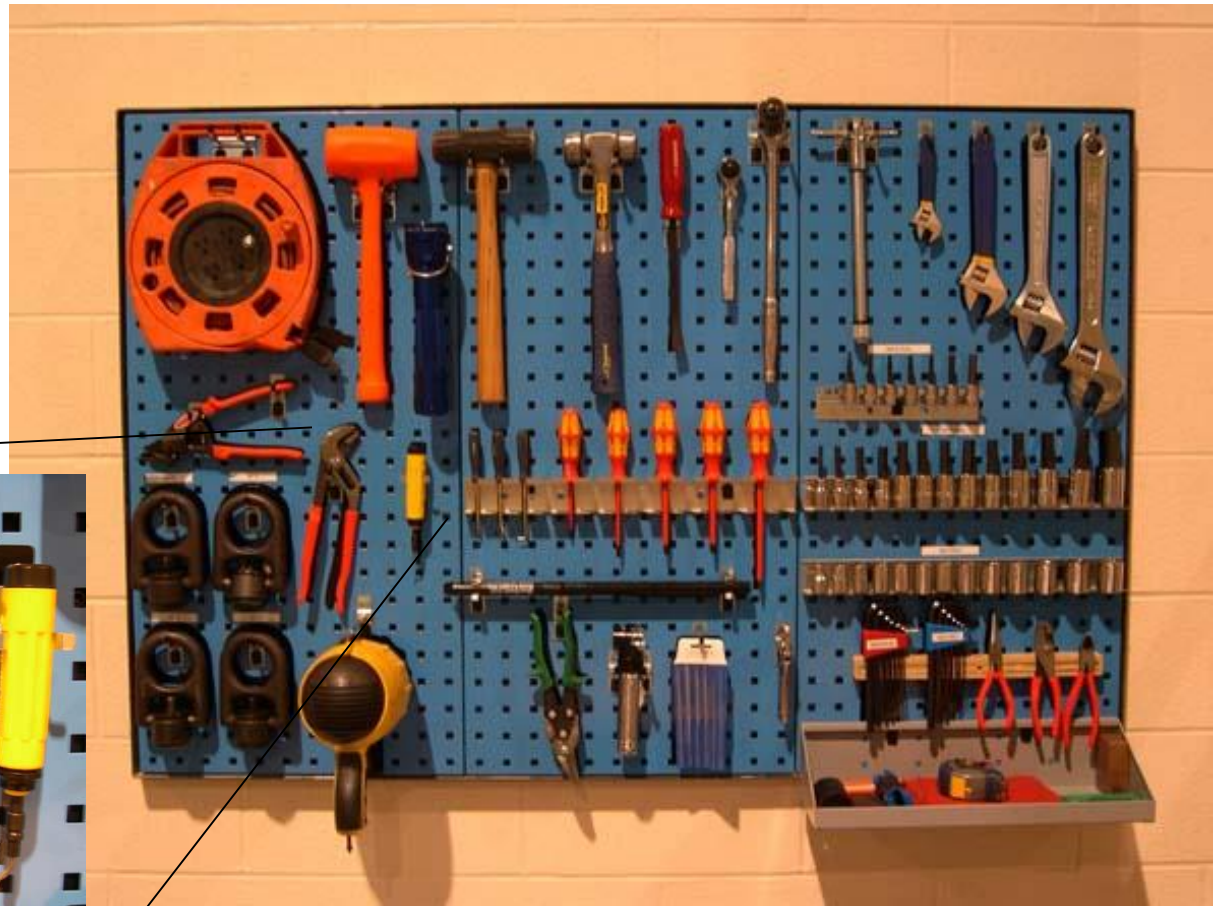
STEP 2 - Stabilize

STEP 2 - Stabilize

Use 5S method in…

SMED

Use markers
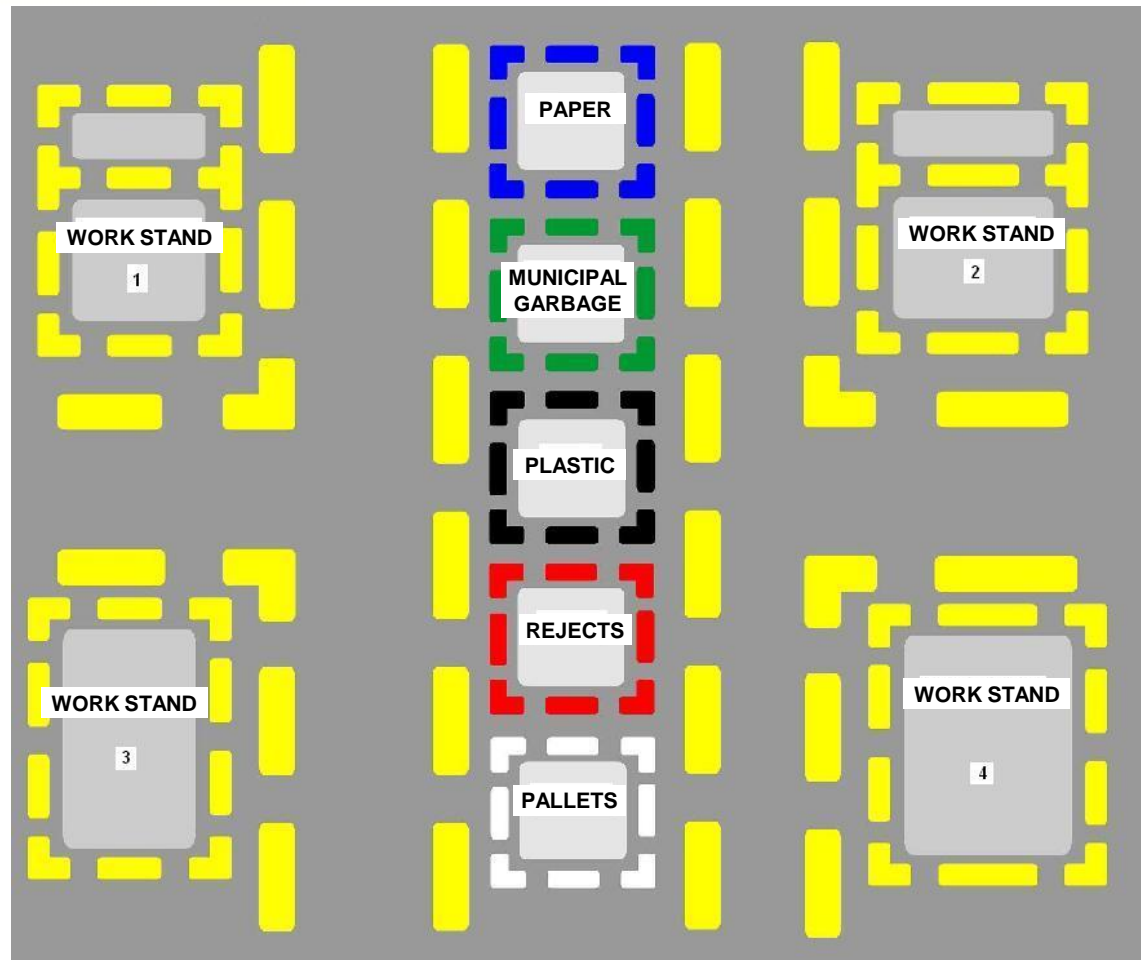
Shine (seiso) means eliminating dust, spoiled liquids and strange materials from work stands – it is a cleanness campaign

Shine results in:

- a clean stand,
  easy to check,

- nice place for the worker

- easy leakage detection

- easy detection of tools
  that need repair

- Make a plan and set in order actions, which should be done

- Divide cleaning tasks

- Provide detergents and find places for them

- Clean up and often clean equipment, work places and rooms

- Clean and repair tools, instruments, aids, machines...

- Protect stands and tools from pollution and damages

- Keep your work place in order and clean

- Care about the surroundings of your work place

Check list for cleaning

- machines, tools

- furniture: cabinets, drawers

- equipment

- walls, floors, ceilings, doors

- shelves, hangers

- waste basket...

- rooms

- work stands

- stores

- offices...

- computer screens, keyboards

- computer files

How to protect things from dust

Use 5S method in...

TPM

How should a room look like after you left it?

Standardize (seiketsu) means to keep ideal conditions in a work place; it also means introducing standards for keeping presented three S
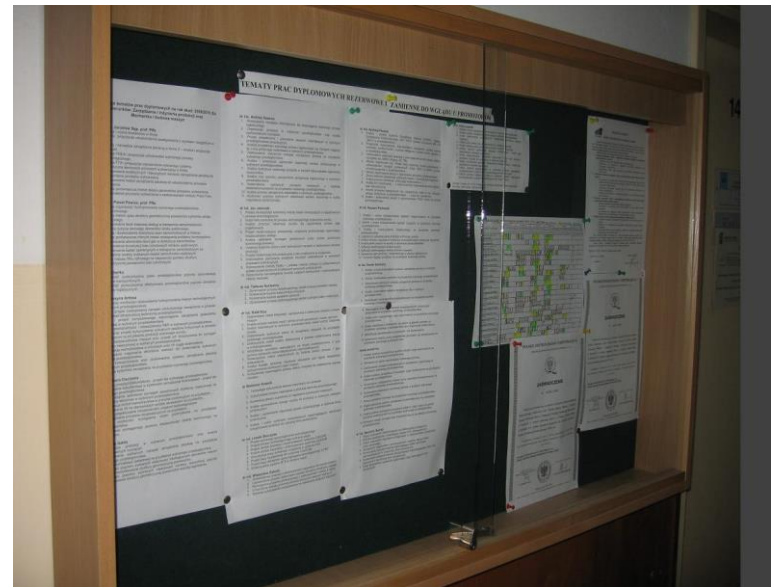
Standardize results in:

- improved work conditions

- elimination of accidents' causes

- Manage resources in a proper way

- Make schedules of tasks and work according to them

- Evaluate and ask others to evaluate you

Without standardization
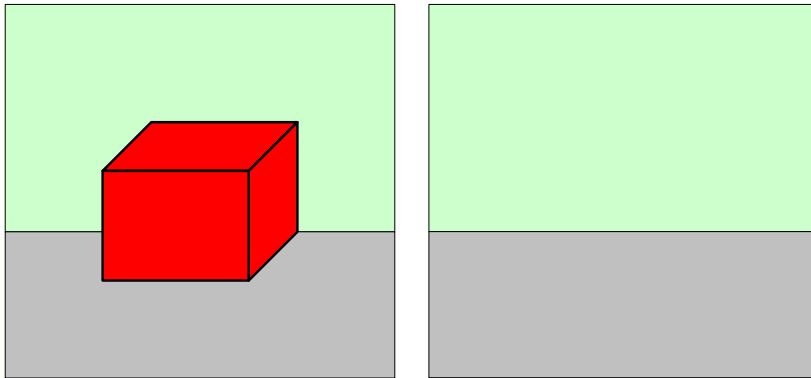
With standardization
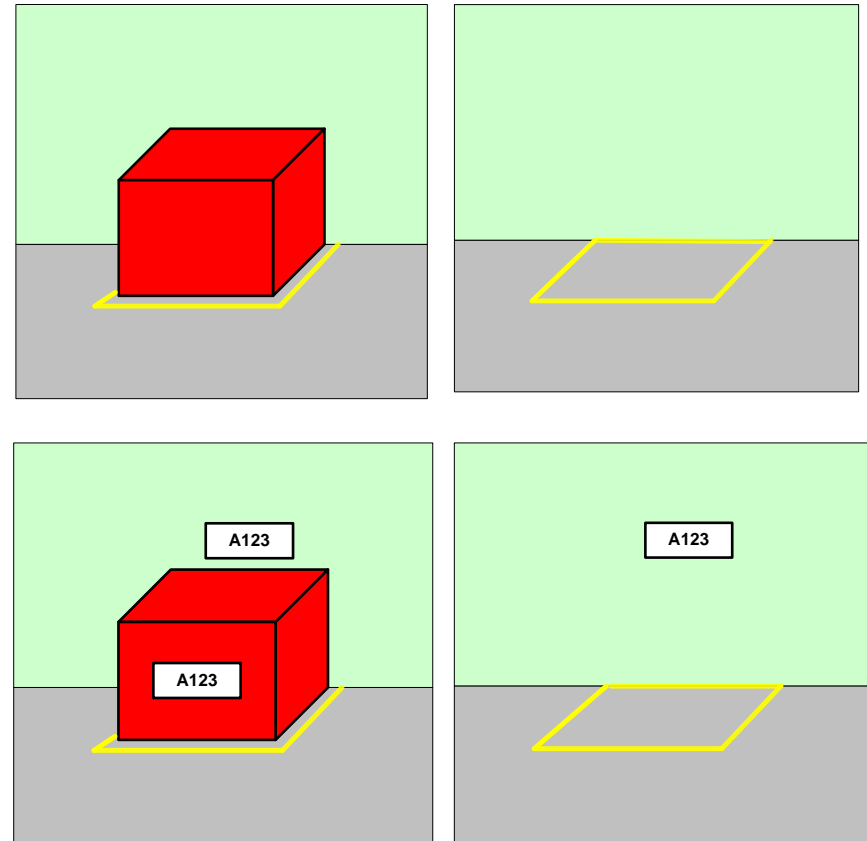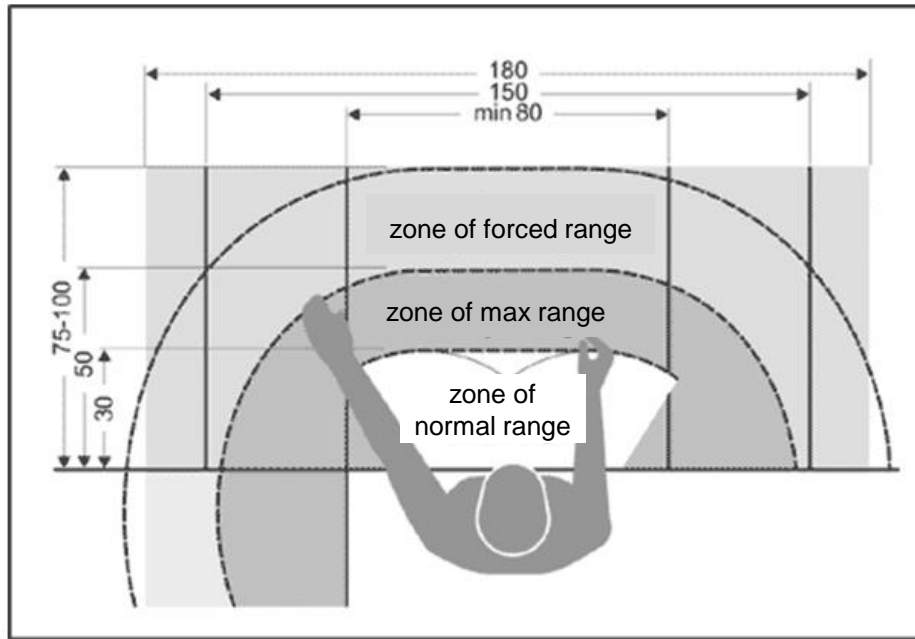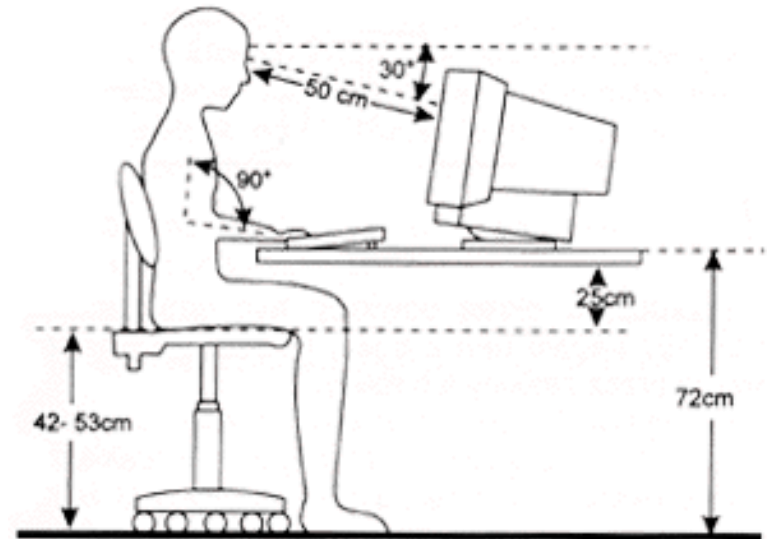
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From: http://www.i-slownik.pl/2,5,ergonomia,pracy,przy,komputerze,i,przygotowanie,stanowiska,pracy.html

Sustain (shitsuke) means that we should have a habit
to keep 5S
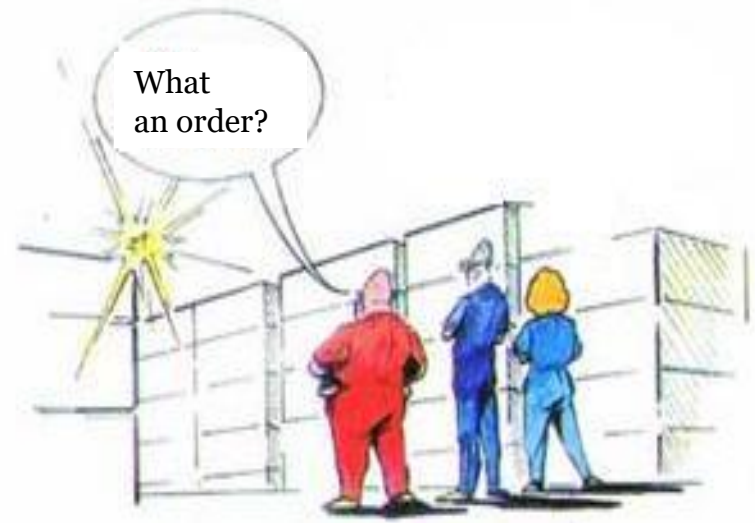
What
an order?

Sustain results in:

- decreased number of mistakes coming from inattention

- processing according to commands and decisions

- improved human relations

To check what are the results of 5S implementation and to maintain the positive results of 5S we can do 5S audit
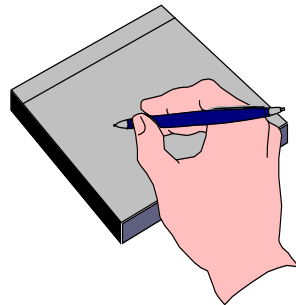
10. 5S audit

| AREA: | Work Area | | | | DATE: | 10.06.2010 |

SCORING GUIDELINES

0	1	2	3	3.5 (4)	4.5 (5)
ZERO EFFORT	SLIGHT EFFORT	MODERATE EFFORT	MINIMUM ACCEPTABLE LEVEL	ABOVE AVERAGE RESULTS (3 AUDITS)	OUTSTANDING RESULTS (6 AUDITS)

With the use of: leansolutions.info/library/documents/5s_auditchecklist.xls

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5S Scoring Guidelines

SCORE	CATEGORY	DESCRIPTION
0	Zero Effort	There has been no 5S activity in this work area related to this criteria.
1	Slight Effort	Any 5S effort is probably the work of 1-2 people. There is no organized effort and plenty of opportunity for improvement.
2	Moderate Effort	Some attempts have been made to implement 5S, but efforts are temporary and/or superficial.
3	Minimum Acceptable Level	The entire team is working on improving their 5S implementation. Previous improvements are becoming standardized.
3,5	Above Average Results	The level of 5S in the work area is excellent. Although there is still room for improvement, the workplace is becoming world-class.
4	Sustained Above Average Results (3 audits)	After 3 consecutive scores of 3.5, a score of 4 may be awarded.
4,5	Outstanding Results	The level of 5S in the work area is world-class, a showcase for the industry. 5S is fully institutionalized in the workplace.
5	Sustained Outstanding Results (6 audits)	After 6 consecutive scores of 4.5, a score of 5 may be awarded.

With the use of : leansolutions.info/library/documents/5s_auditchecklist.xls

5S AUDIT CHECKLIST

SORT ACTIVITY DESCRIPTIONS	SCORE
1) Only the required **spare parts, materials, WIP, etc.** are present at the workstation. Items not required to make the current product are removed from the workplace.	**1**
2) Only the required **tools** are present at the workstation. Items not required to make the current product are removed from the workplace.	**2**
3) Only the required **paperwork** is present at the workstation. Out-dated or otherwise unnecessary posters, memos, announcements, reports, etc. are removed from the workplace.	**3**
4) Only the required **equipment** is present at the workstation. All obsolete, broken or unnecessary equipment, shelves, lockers, workbenches, etc. not required to make the current product is removed from the workplace.	**1**
5) Only the required **furniture** is present at the workstation. All broken or unnecessary chairs, shelves, lockers, workbenches, etc. not required to make the current product is removed from the workplace.	**2**
6) **Tripping dangers** such as electrical cables, etc. are removed from standing/walking areas.	**2**

With the use of : leansolutions.info/library/documents/5s_auditchecklist.xls

5S AUDIT CHECKLIST

STABILIZE ACTIVITY DESCRIPTIONS	SCORE
7) Locations for **containers, boxes, bins, WIP, materials, etc.** is clearly defined by painted lines and properly labelled (part number, quantity, etc.)	2
8) **Tools** have a designated storage location that is within reach of the operator. The location is properly labelled and tools can easily be identified if absent	2
9) **Paperwork** is properly labelled and has a clearly defined and labelled location that is visible to the operators and away from work surface	0
10) **Equipment** is clearly identified (numbered, named, colour coded, etc.) and placed in a properly identified location. Critical maintenance points are clearly marked	1
11) **Furniture** is clearly identified (numbered, named, colour coded, etc.) and placed in a properly identified location	1
12) Work areas requiring **personal protective equipment** are clearly labelled.	0
13) **Stop switches and breakers** are highly visible and located for easy access in case of emergency	0
14) **Fire hoses, fire extinguishers** and other emergency equipment are prominently displayed and are unobstructed	1
15) Working conditions are **ergonomically friendly**. Tools are stored at appropriate heights, lift assist devices are provided where necessary, etc	1
16) The **workplace layout** accommodates easy exit in case of emergency	2
17) **Walkways** and vehicle paths are clearly identified and unobstructed. Exits are clearly labeled and unobstructed	2

With the use of : leansolutions.info/library/documents/5s_auditchecklist.xls

5S AUDIT CHECKLIST

SHINE ACTIVITY DESCRIPTIONS	SCORE
18) **Containers, boxes, bins, etc.** are clean and not cracked, torn, or otherwise damaged. They are neatly stacked.	1
19) **Tools** are kept clean and in good working order. Where possible, tools are stored in a manner to keep them clean and free from risk of damage.	2
20) **Paperwork** is not torn, kept clean and protected from dirt.	1
21) **Work surfaces** (machines, workbenches, dies, and other equipment including electrical boxes) are clean and painted.	1
22) **Floors** are free from dirt, debris, oil, parts, hardware, empty boxes, packaging material, etc. Drains (if required) are properly located and unclogged.	0
23) **Walls, partitions, railings, etc.** are painted and kept clean.	2
24) There is a **schedule** showing times, frequency and responsibilities to clean areas of the workplace such as windows, corners, walls, doors, top of cabinets, etc.	1
25) All **cleaning equipment** is neatly stored and is readily available when needed.	0
26) All **personal protective equipment** is maintained in sanitary and reliable condition and is properly stored in a easily accessible and labeled location when not in use.	2
27) **Equipment safety** concerns are clearly identified. Safety guards are painted, in good working condition and provide adequate protection.	1

With the use of : leansolutions.info/library/documents/5s_auditchecklist.xls

5S AUDIT CHECKLIST

STANDARDIZE ACTIVITY DESCRIPTIONS	SCORE
28) **Tools, equipment, paperwork, furniture, etc.** are stored neatly in designated areas and are returned immediately after each use.	1
29) **Documents** are labeled clearly as to contents and responsibility for control and revision. The date and revision number are clearly visible.	2
30) Equipment **maintenance records** are visible and clearly state when maintenance last occurred and when next maintenance is scheduled.	0
31) **Product waste** (e.g. shavings, containers, liquids, wrappers, etc.) is consistently and often cleaned up and removed from the workplace.	0
32) **Preventive measures** have been implemented to ensure the workplace meets 5S guidelines (e.g. systems that do not allow waste to accumulate such as containers to collect product debris from machines).	0
33) The **results of the previous audit** are posted and clearly visible to the entire team.	1
34) **Areas for improvement** identified during the previous audit have been completed.	1
35) The **work environment** satisfies the requirements of the work being performed. Lighting (brightness and color), air quality, temperature, etc.	0

With the use of : leansolutions.info/library/documents/5s_auditchecklist.xls
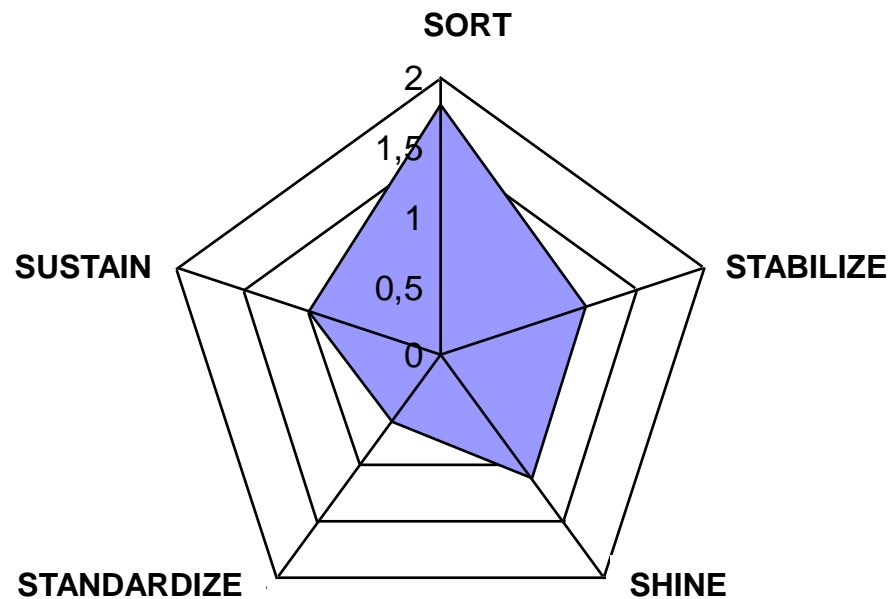
5S AUDIT CHECKLIST

SUSTAIN ACTIVITY DESCRIPTIONS	SCORE
36) A member of **Management** has participated in a 5S activity such as an audit or other activity within the past 3 audit periods.	1
37) **Recognition** is given to teams who get involved in 5S activities.	1
38) **Time and resources** are allocated to 5S activities (e.g. designated daily/weekly clean-up time, 5S team leader, etc.)	2
39) All operators, team leaders, supervisors, etc. are assigned **5S activities** to be completed at least once/week.	0
40) The team took the **initiative** to make improvements to the workplace that were *not* identified during the last 5S audit.	1

With the use of : leansolutions.info/library/documents/5s_auditchecklist.xls

Results of 5S audit

	SORT	STABILIZE	SHINE	STANDARDIZE	SUSTAIN	TOTAL
Total Score	11	12	11	5	5	**44**
No of Questions	6	11	10	8	5	**40**
Average Score	**1,8**	**1,1**	**1,1**	**0,6**	**1,0**	**1,1**

With the use of : leansolutions.info/library/documents/5s_auditchecklist.xls

11. Benefits of introducing 5S

Implementing 5S method in the plant would help the company:

- to reduce waste hidden in the plant

- improve the levels of quality

- improve the levels of safety

- reduce the lead time

- reduce the cost

- increase company's profit

- develop control through visibility

- identify problems more quickly
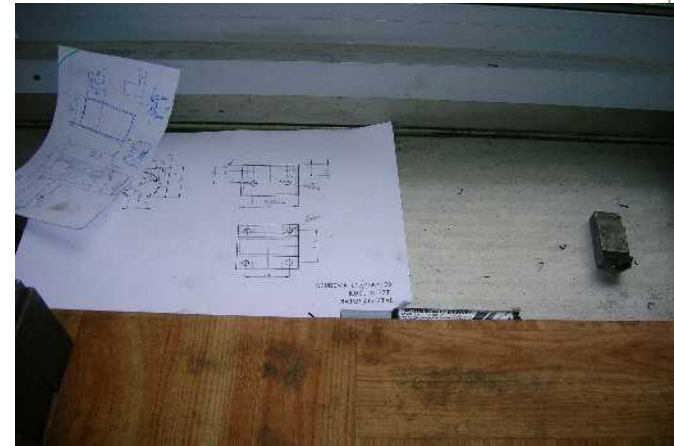
- raise employee morale

12. Results of introducing 5S

*"You will never have a chance
to do second first impression"*
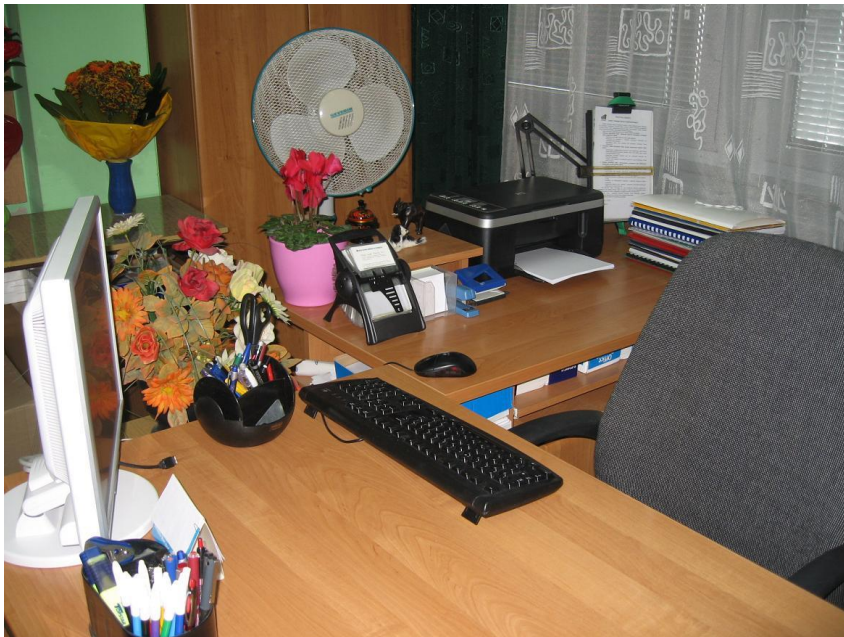
13. An example of 5S implementation on a work stand

Work stand before 5S action

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Items needed on the work stand

- Heads (8)
- Workshop aids (2)
- Holders (10)
- Fixing elements (30)
- Gauge blocks (1 kit)
- Detergents (3)

Number of items: **54**

Things needless

- Design (2)
- Marker
- Sparking plug
- Turning tool
- Turning tools holders (5)
- Sheet
- Saucer
- Rusty piece of pipe
- Plastic stopper (2)
- Personal things - bag
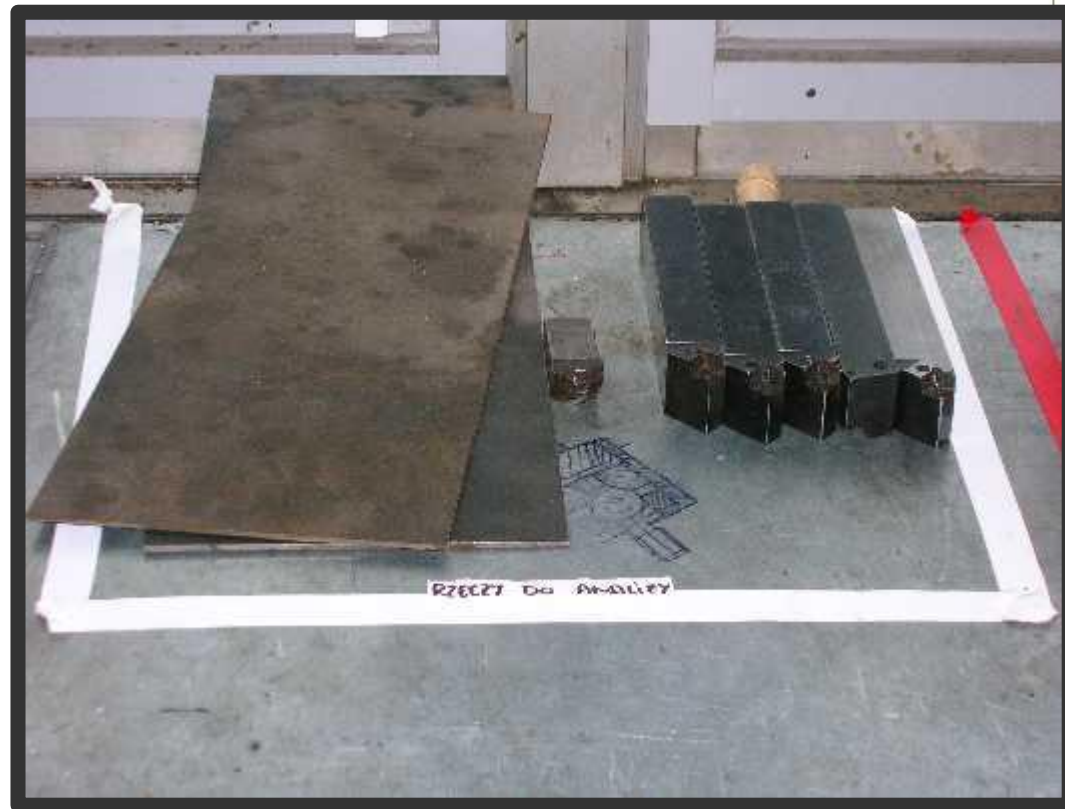- Box with „strange things" (2)

Number of items: 18

Things to analyze (can be used on other work stands)

- Piece of metal
- Piece of cooper sheet
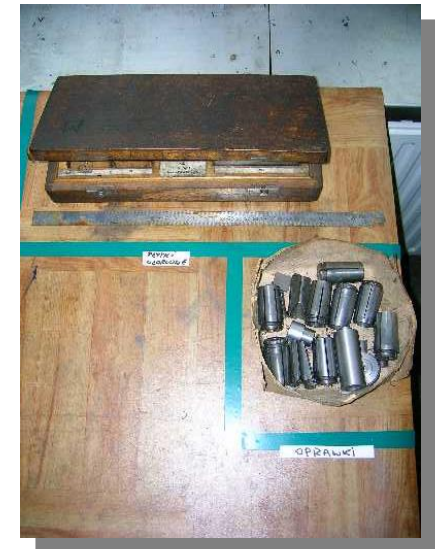- Pieces of sheets (2)
- Turning tools (5)

Number of items: 9

Needed things	Unneeded things	Things to analyze	Score
54	18	9	81
66,67%	22,22%	11,11%	100,00%

Unneeded things

Things to analyze

Needed things
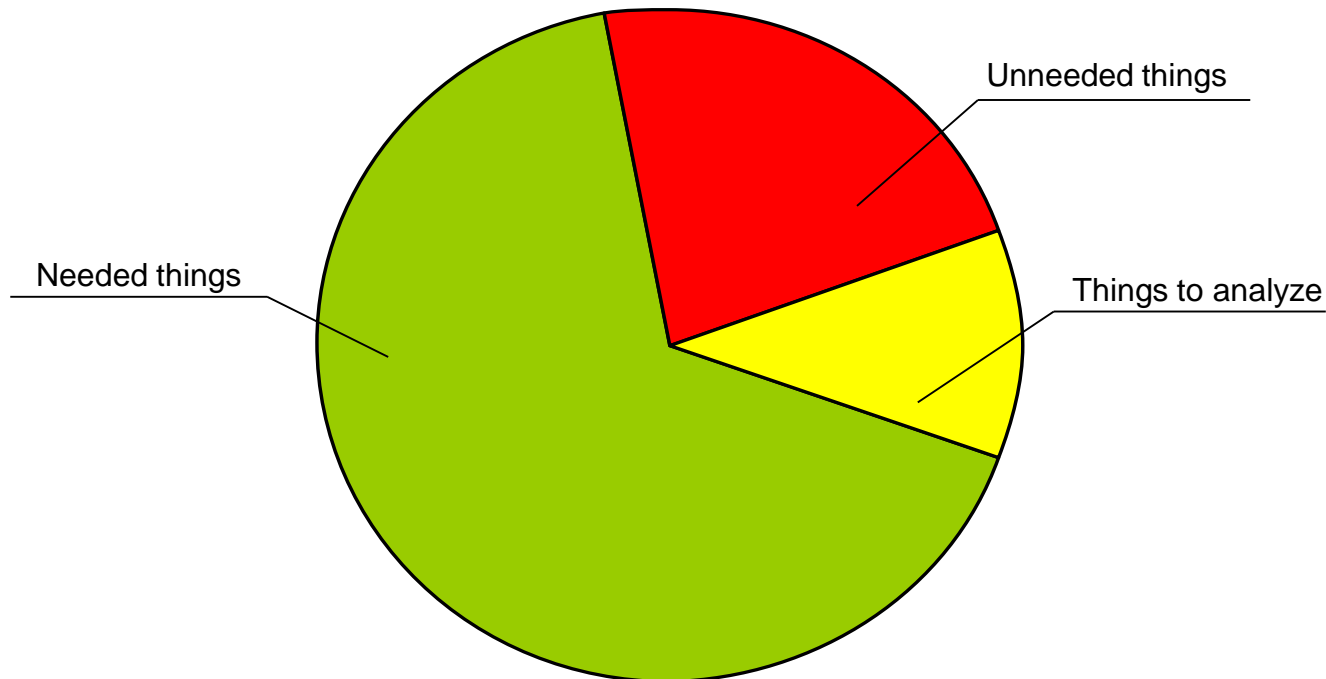
13. An example of 5S implementation on a work stand

Work stand after 5S action

BEFORE 5S

AFTER 5S

In a work stand...

BEFORE 5S

AFTER 5S
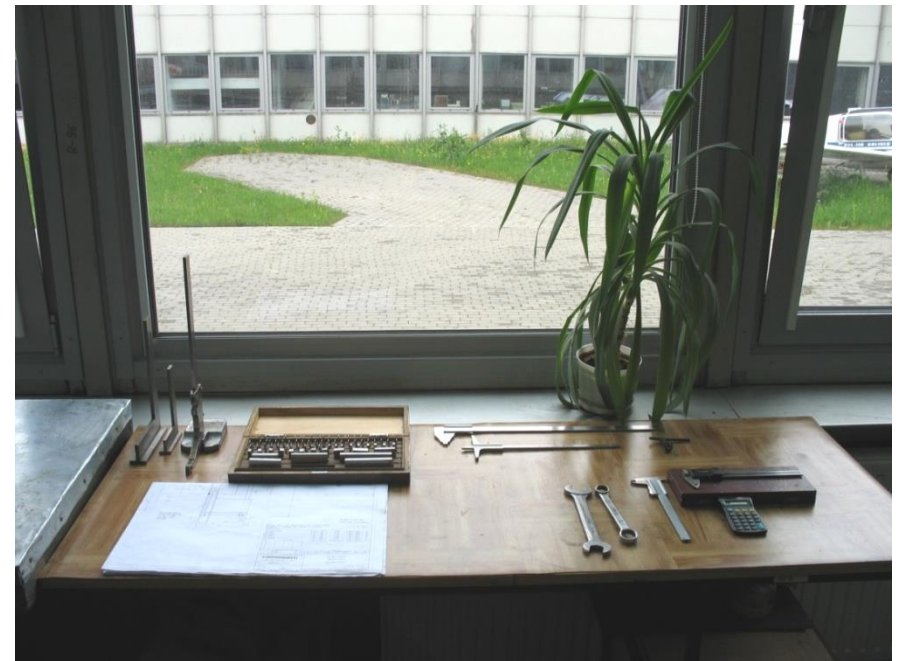
BEFORE 5S

AFTER 5S

END

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