



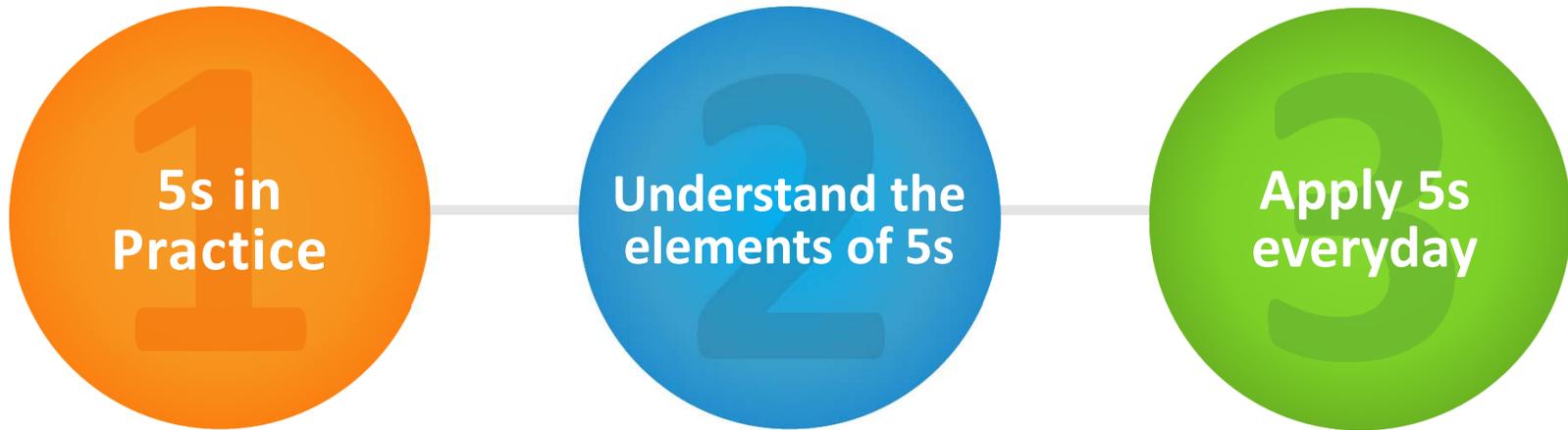
LEANOhio
SIMPLER • FASTER • BETTER • LESS COSTLY

introducing

The Power of 5s



Enhancing Your Work



every step of the way 





5s in Practice

Background and Use 



Introducing 5s

- **Sort** – Get rid of all the excess
“When in doubt throw it out!”
- **Straighten** – What must be kept; make visible and self explanatory so everyone knows where it goes
Create an atmosphere where abnormalities are easy to identify!
- **Shine** – Clean and organize daily
- **Standardize** – Create audits / standards for the area *Revisit the area frequently!*
- **Sustain** – Encourage everyone to take part with implementation
“Develop guidelines and stick with them”

Results Expected from 5s

1. Improved Work Flow

- Fewer interruptions
- Fewer lost items
- Less waiting
- Less movement

2. Reduced Waste

- Less lost time
- Fewer lost documents
- Less inventory

3. Maintain Quality

- No diminished quality of service delivery
- No trade-offs
- Don't pass problems to others

**Make things better for
customers, employees
and taxpayers**





Training consultant Nik Kellingley argues that productivity is directly affected by your ability to file and retrieve documents easily:

“I think tidy desks are probably more conducive for most people’s sanity and if you work in a job where bits of paper are really important then they can end up impacting on performance hugely.”



“If you spend ten minutes a day searching for something that was “just here a moment ago” then by the end of the year you’ll have wasted several working days looking for stuff.”



Purpose of 5s

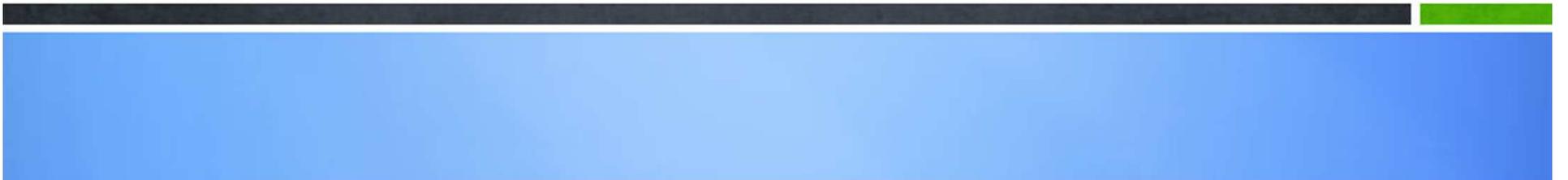
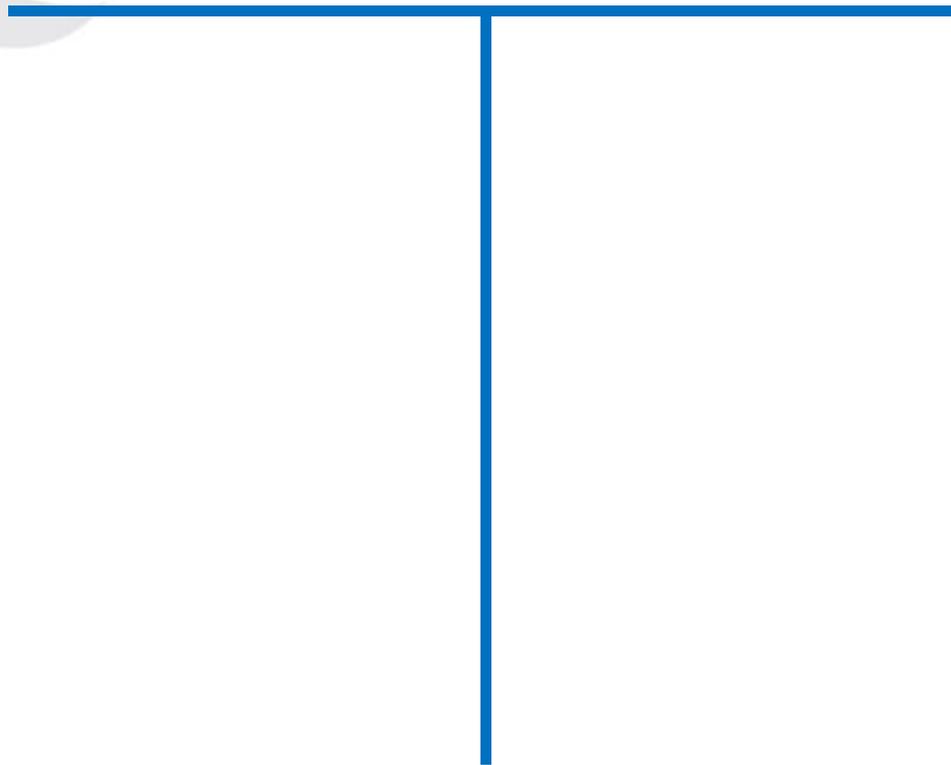
- To provide an on-going self-regulated system that instills a discipline to create, improve, and maintain a clean, well organized, and safe work environment.
- The cleaner, more organized, and more self-regulated, the better the quality, productivity, and safety.



What's Good – What's Not So Good ?

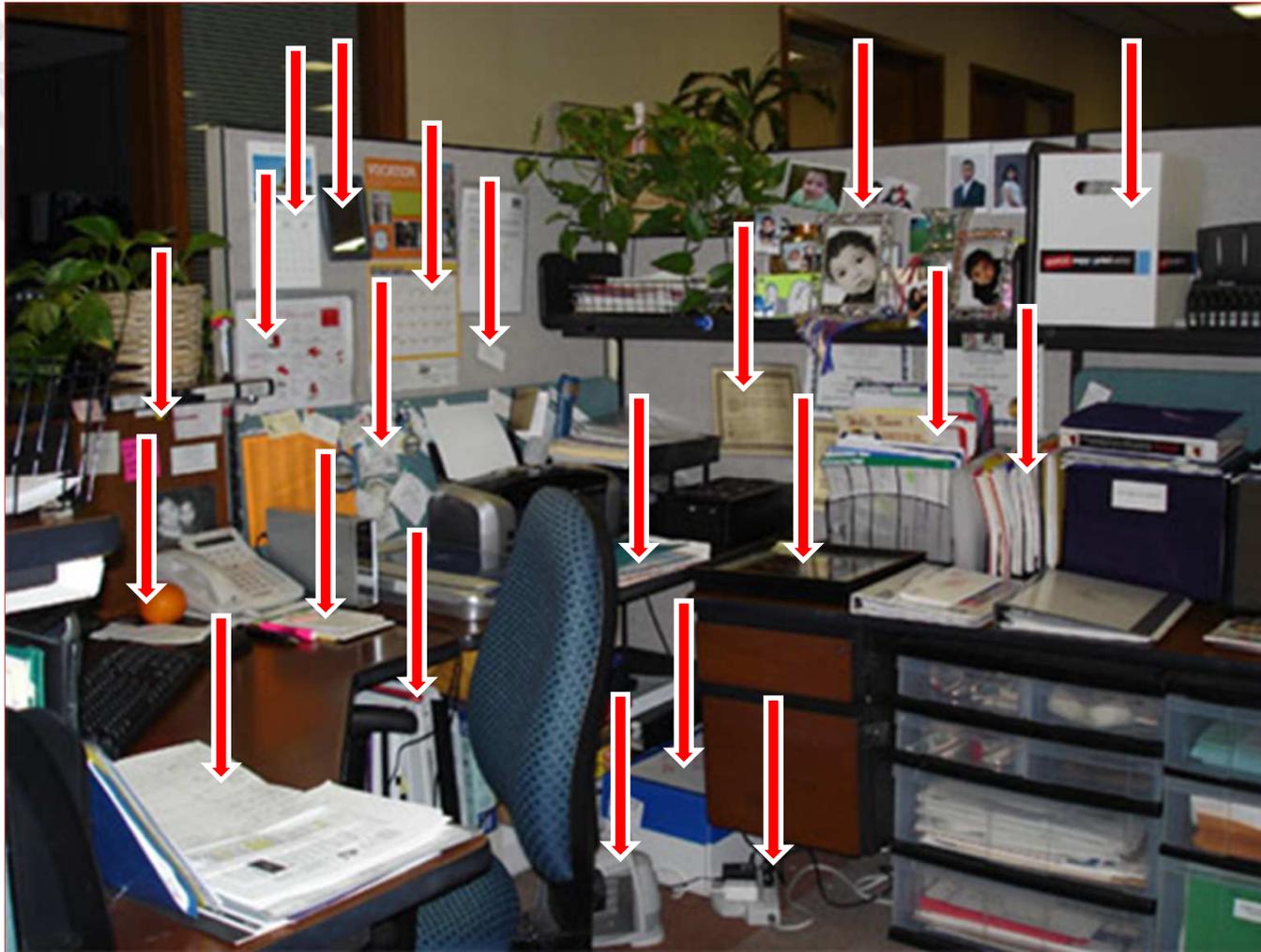
Good

Not Good





Not So Good



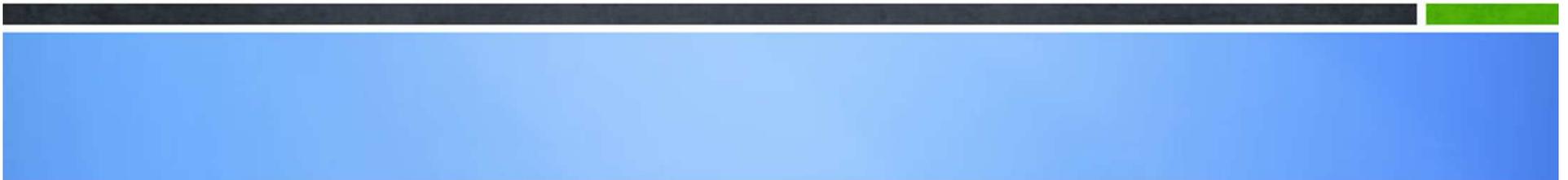
Good





Self Assessment

Group from same office – Audience Response System
Mixed Group – Paper Assessment



Real Life

<http://www.gembaacademy.com/promo/featured-video.html>





5s Computers

- **31%** of PC users have lost all of their files due to events beyond their control
- **60%** of companies that lose their data will shut down within 6 months of the disaster
- Every week **140,000** hard drives crash in the United States
- **40%** of USB memory sticks are lost



5s Documents

- According to PricewaterhouseCoopers, the average organization:
 - Makes 19 copies of each paper document
 - Spends \$20 to file each document
 - Loses one out of every 20 documents
 - Spends \$120 searching for a lost document
 - Wastes 25 hours recreating each lost document



Look Familiar?



Before



After





Understand Components of 5s

Sort, Straighten, Shine, Standardize, Sustain, 



Sort – Remove unnecessary things

Definition

- Remove all items from the workplace that are not needed for the job



Purpose

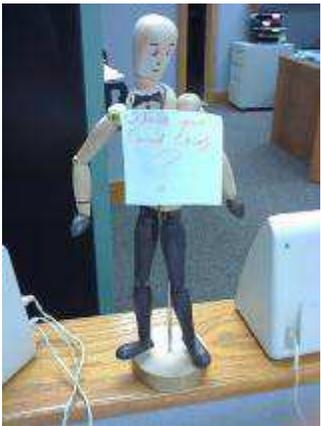
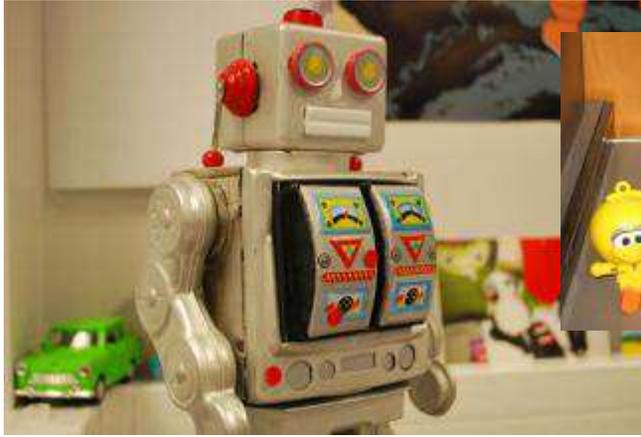
- 1S avoids the following problems:
 - Crowded, hard-to-work-in environment
 - Time wasted looking for correct items
 - Unneeded inventory/files costly to maintain
 - Excess inventory that hides problems
 - Unneeded items/equipment make it harder to improve processes

Visual of 1S

- Begin with clearing the clutter away from a given process... and not be distracted by the piles of non-relevant inventory, tools or accumulated waste

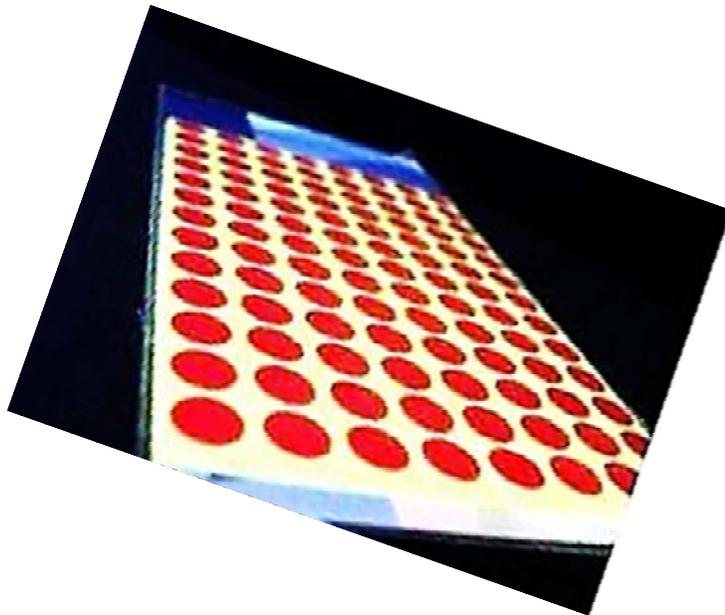
Sort – Remove unnecessary things

- Sort essential stuff from non-essential items
- Non-Essential “STUFF” includes
 - Not needed now
 - Not needed here
 - Not needed ever again
 - Not needed in the first place
 - Not needed any more



Sort – Remove unnecessary things

- Items that need to be removed but cannot be removed right away should be red tagged
- Fill out the red tag information and affix it to the item that needs to be removed



Red Tag No.	
Date	Person
Item Description	
Quantity	
Disposition <input type="checkbox"/> Move <input type="checkbox"/> Scrap <input type="checkbox"/> Return <input type="checkbox"/> Store Offsite <input type="checkbox"/> Other _____	
Comments	

Sort – Remove unnecessary things



BEFORE



AFTER

Sort – Remove unnecessary things

BEFORE



AFTER



- Deleted unused icons
- Removed unused programs
- Deleted old files or archived onto CD's

Straighten – Organize

Definition

- Arranging items so they are easy to use and labeling them so they are easy to find and put away



Purpose

- 2S avoids time wasted looking for correct items by promoting Visual Management

Visual of 2S

- Simply ensuring a place for everything and everything in its place...
- 2S is all about cutting the time spent looking for things
- Be able to get your hands on exactly what you need quickly

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Store room

Well labeled - Photographs



Without labels,
I could choose
wrong 9 times



Straighten – Organize

- Organize the necessary items so they can be used and returned easily
- Place all necessary items in the best location and visually organize the area
 - First decide where all items should be so that the organization is easy to use and understand
 - Choose proper storage methods that minimize inventory and promote visual management
 - Visually indicate locations so items in use can be returned and missing items are easily identified
 - Create visuals so anyone can understand the workplace

Straighten – Organize **ODOT Aircraft Maintenance**



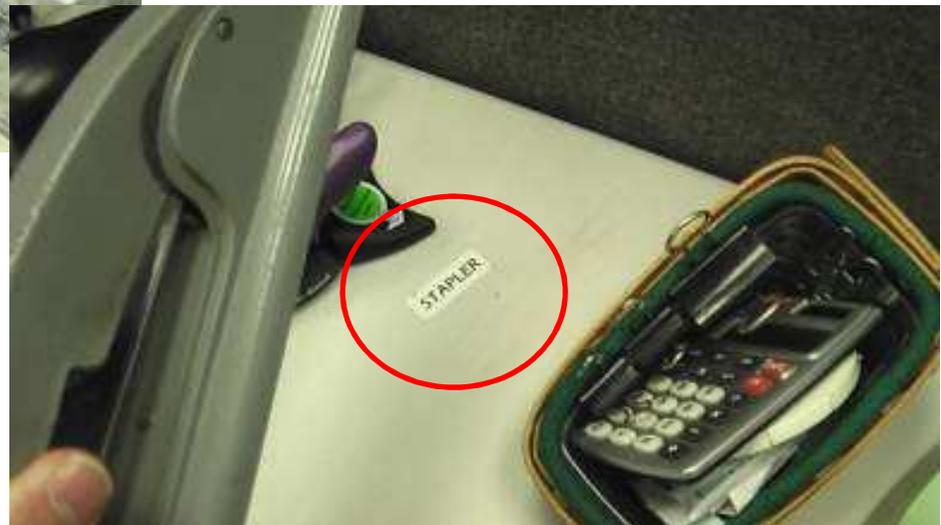
Straighten – Organize



Straighten – Organize



Straighten – Organize



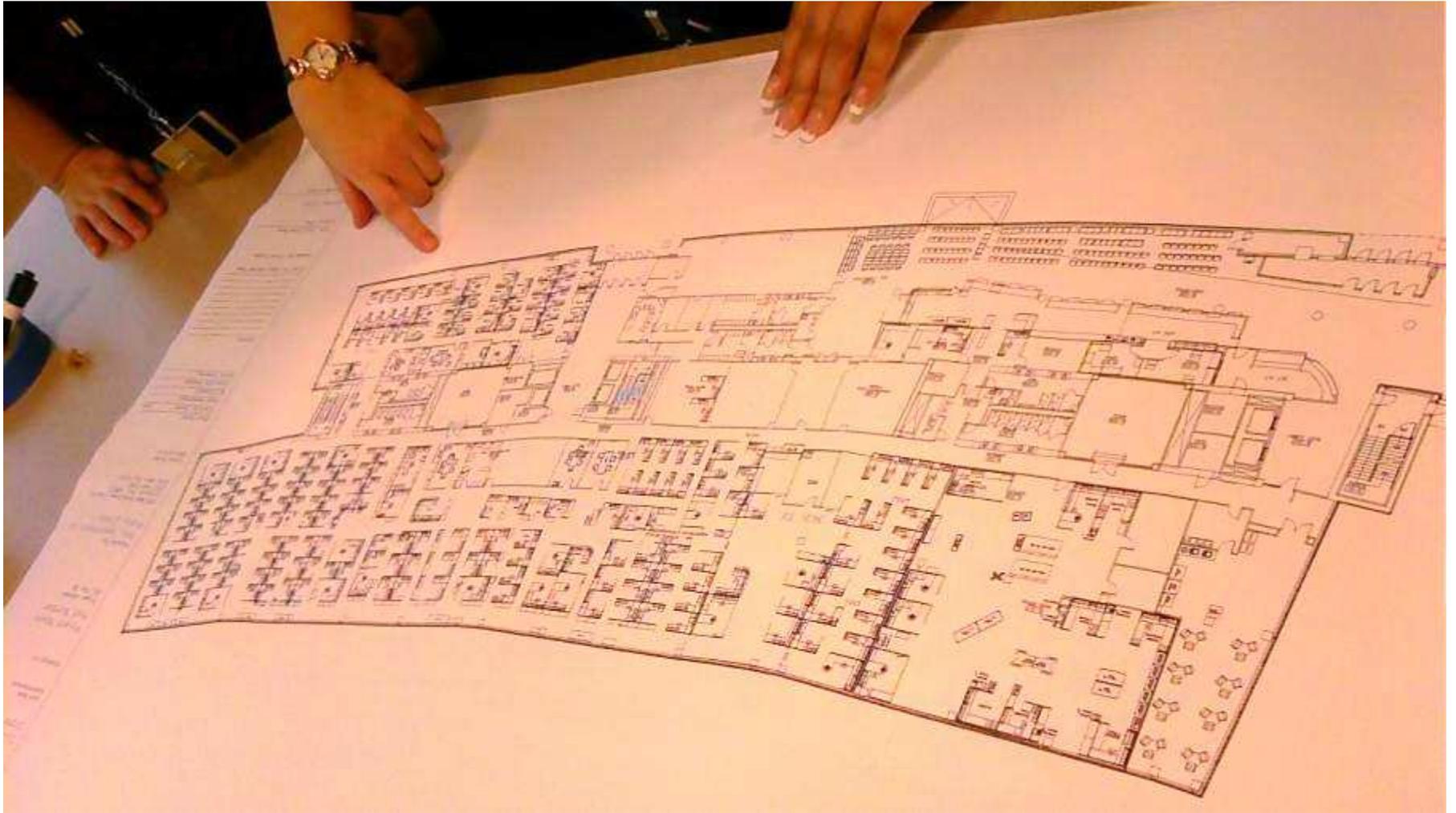
Straighten – Organize



Straighten – Organize



Straighten – Organize



Straighten – Organize



Shine – Clean

Definition

- Sweeping floors, wiping off machinery, & generally making sure everything in the facility stays clean

Purpose

- By ensuring everything is clean, it is easier to detect when and where there is a problem with a process or piece of equipment

Visual of 3S

- Concentrate on shining, cleaning, brightening and cleansing the area
- If you work in a “spic & span area, you are less likely to be distracted by dirt. People begin to respect their areas and office!



Shine – Clean

- Researchers find average desk harbors 400 times more bacteria than average toilet seat
- Phone, Water fountain handle, Microwave door handle and Keyboard are the top five most germ-contaminated spots in office. And take this figure, *on average, the area where you rest your hand on the desk has 10,000,000 bacteria*



Shine – Clean











Shine – Clean



Standardize – Define the best way

Definition

- Standardize processes, make things consistent
- Create rules for cleaning and maintenance

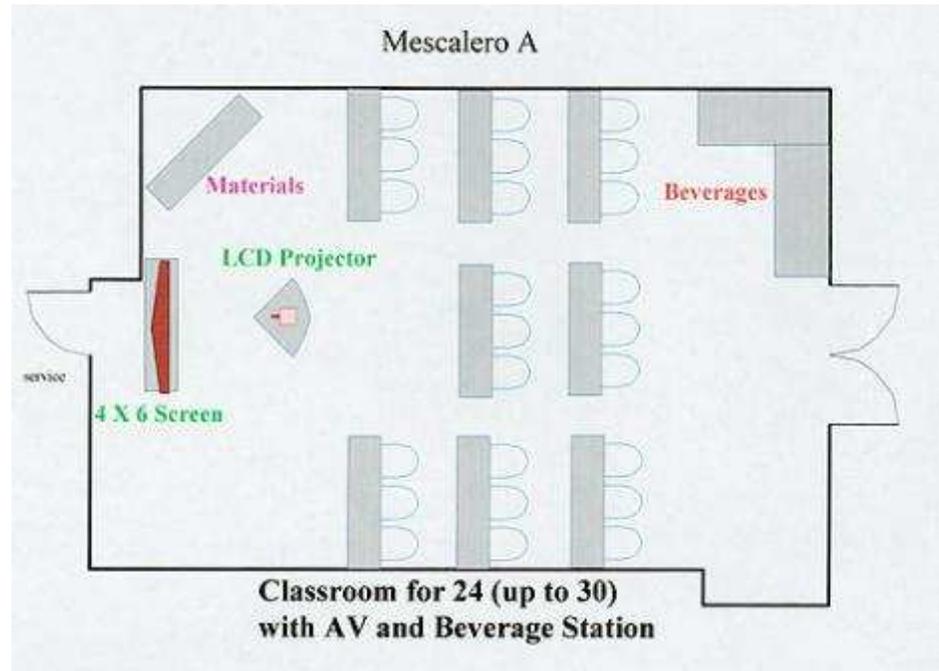
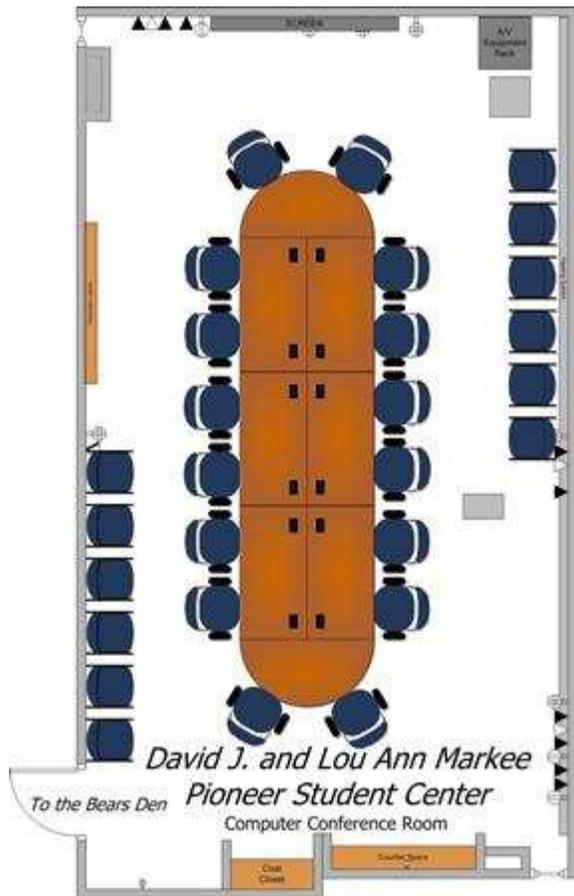


Purpose

- Make a habit of properly maintaining correct processes
- Moving into 4S or Standardization begins to change the event from one of “housekeeping” to true process transformation

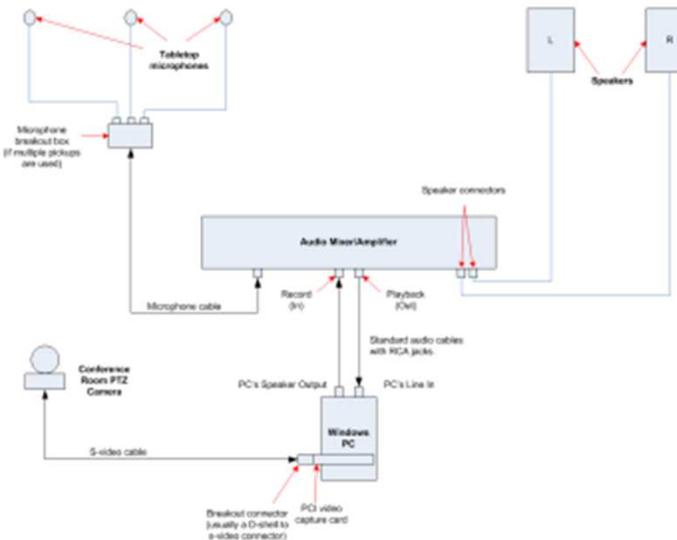
Visual of 4S

- Start tackling the issues of transforming the culture...
- It provides us with tools, standards, consistency, and, all the training, processes, audits & checklists necessary to make it understood and routine



General AV Wiring Diagram for Conference Room PCs

For conference rooms that do not use USB devices



Standardize – Define the best way and do it consistently



Everything is together
In one place



Labeled
No guesswork



Safety



Visual Management Considerations



EASY
to find

EASY
to put back

EASY
to notice
when
something is
missing

A CHECKLIST FOR CHECKLISTS

Development

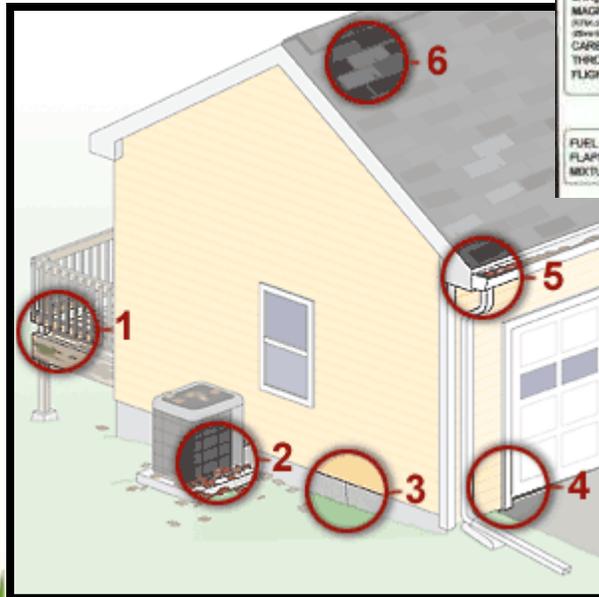
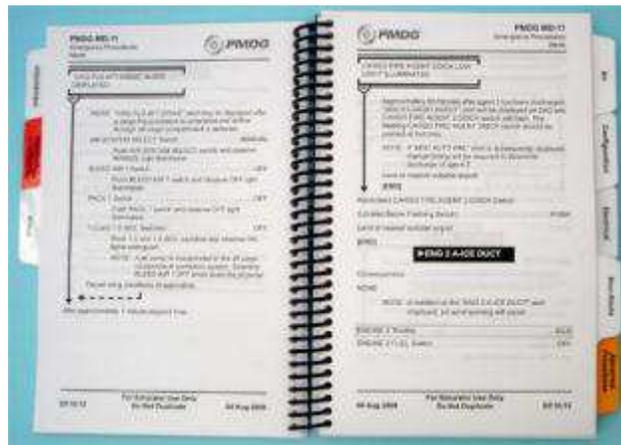
- Do you have clear, concise objectives for your checklist?
- Is each item:**
 - A critical safety step and in great danger of being missed?
 - Not adequately checked by other mechanisms?
 - Actionable, with a specific response required for each item?
 - Designed to be read aloud as a verbal check?
 - One that can be affected by the use of a checklist?
- Have you considered:**
 - Adding items that will improve communication among team members?
 - Involving all members of the team in the checklist creation process?

Drafting

- Does the Checklist:**
- Utilize natural breaks in workflow (pause points)?
 - Use simple sentence structure and basic language?
 - Have a title that reflects its objectives?
 - Have a simple, uncluttered, and logical format?
 - Fit on one page?
 - Minimize the use of color?
- Is the font:**
- Sans serif?
 - Upper and lower case text?
 - Large enough to be read easily?
 - Dark on a light background?
- Are there fewer than 10 items per pause point?
 - Is the date of creation (or revision) clearly marked?

Validation

- Have you:**
- Tried the checklist with front line users (either in a real or simulated situation)?
 - Modified the checklist in response to repeated trials?
- Does the checklist:**
- Fit the flow of work?
 - Detect errors at a time when they can still be corrected?
 - Can the checklist be completed in a reasonably brief period of time?
 - Have you made plans for future review and revision of the checklist?



1976 **CESSNA C-150M CHECKLIST** N-63365

<p>BEFORE STARTING</p> <p>PREFLIGHT INSPECTION _____ Complete SEATS, SEATBELT, HARNESS _____ Adjust & lock FUEL SHUTOFF VALVE _____ On RADIOS, & ELECTRICAL EQUIP _____ Off BRAKES _____ Test & set</p>	<p>TAKE-OFF Cont'd</p> <p>CARBURETOR HEAT _____ Cool TRANSPOUNDER _____ Set on ALT RUNWAY HEADING _____ Check Head Ind THROTTLE _____ Full open ALERONS _____ Into the wind ROTATE _____ 50 KIAS CLIMB SPEED _____ 90-70 KIAS</p>
<p>STARTING ENGINE</p> <p>MIXTURE _____ Rich CARBURETOR HEAT _____ Cool MASTER SWITCH _____ On PRIMER _____ As required, locked THROTTLE _____ Open 1/4" BEACON _____ On PROPELLER AREA _____ Clear IGNITION SWITCH _____ Start OIL PRESSURE _____ Check FLAPS _____ Up MIXTURE _____ Lean 1" for taxi RADIOS _____ On</p>	<p>CLIMB-OUT</p> <p>THROTTLE _____ Full Open MIXTURE _____ Full Rich LIGHTS _____ As required GALLAGES _____ Check V_R = 50 KIAS / V_X = 50 KIAS / Easelside climb = 80 TH KIAS</p>
<p>DURING TAXI</p> <p>BRANKSTEERING _____ Test MAGNETIC COMPASS _____ Checked GYRO INSTRUMENTS _____ Checked</p>	<p>CRUISE</p> <p>POWER _____ 2200 to 2700 RPM ELEVATOR TRIM _____ Adjust MIXTURE _____ Lean for max RPM</p>
<p>BEFORE TAKE-OFF</p> <p>PARKING BRAKE _____ Set DOORS & WINDOWS _____ Closed & locked FLIGHT CONTROLS _____ Free and Correct FUEL SELECTOR VALVE _____ Recheck - On ELEVATOR TRIM _____ Take-off Setting MIXTURE _____ Rich THROTTLE SETTING _____ 1700 RPM ENGINE INSTRUMENTS _____ Check AMPMETER _____ Check SUCTION GAUGE _____ Check H&I to 5.4g MAGNETOS _____ Check CARBURETOR HEAT _____ Check operation THROTTLE _____ 1000 RPM FLIGHT INSTRUMENTS _____ Check & set</p>	<p>DESCENT</p> <p>MIXTURE _____ Rich POWER _____ As Desired CARBURETOR HEAT _____ As Required</p>
<p>TAKE-OFF</p> <p>FUEL SELECTOR _____ On FLAPS _____ Up MIXTURE _____ Rich</p>	<p>BEFORE LANDING</p> <p>SEATS, BELTS, HARNESS _____ Adjust & lock PRIMER _____ In & locked FUEL SELECTOR VALVE _____ On CARBURETOR HEAT _____ Apply full heat MIXTURE _____ Rich FLAPS _____ As Desired AIRSPEED _____ 80 to 75 KIAS power</p>
	<p>AFTER LANDING</p> <p>CARBURETOR HEAT _____ Cool FLAPS _____ Retract STROBES & LANDING LIGHT _____ Off TRANSPOUNDER _____ Standby MIXTURE _____ Lean 1" for taxi</p>
	<p>SHUTDOWN & PARKING</p> <p>RADIO/ELECTRICAL _____ Off MIXTURE _____ Idle Cut-off IGNITION MASTER SWITCH _____ Off BEACON _____ Off</p>

Standardize – Define the best way and do it consistently



**Policies &
procedures**

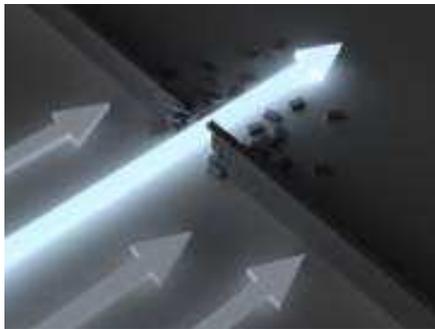
**Clear
Readable
Understandable**



Sustain – Define how to maintain the best way

Definition

- Create buy-in to hold the first 4S's together
- Develops good work habits that will continue over the long term



Purpose

- Make a habit of properly maintaining correct processes
- Culture change! 5S is quoted as one of the most important Lean Tools because it is the foundation of all other tools

Visual of 5S

- Focuses on getting the first 4S's to be welded into the culture of the organization
- The trick is to make the entire thinking process surrounding 5S part of the living, breathing, everyday mode of operation

Sustain – Make Habitual

- Monthly area review
- Cover in staff meeting
- Award/Reward areas
- Recognize Improvement
- Involve everybody
- Annual/Semi annual clean up day
- 5s Potluck





Creativity Applied

New and Better Ways to Accomplish Work



Creative Ideas from 5s

Cell work areas





What does an Emergency Room
Patient see more of than anything
else?



The Riverwood Middle School art students were invited to paint ceiling tiles to be hung in Memorial Hermann Northeast Hospital's emergency room. **Houston**





Yana Paskova for The New York Times



Post Office

- Very Good Home Delivery (Amazing)
- Counter Service (Not their specialty)
 - 16 people in line
 - 3 windows
 - Only two open (December)
 - Package to send – 9 questions
 - Package pick up – went in back 6 minutes
 - My visit 27 minutes



US Government



- Paper U.S. Savings Bonds aren't being sold at banks.
- The traditional sale of paper bonds was basically eliminated last January.
- Savers must go through a complicated online system to buy digital bonds.
- Sticking points: You must open an online account — and on top of that actually make sure the recipient takes the time to set up a TreasuryDirect account, too. Parents will need to set up TreasuryDirect minor-linked accounts for each child under age 18.
- Many folks are simply frustrated. "They're saying, 'I don't think so."

Creative Ideas from 5s

- UPS

- <http://www.youtube.com/watch?v=ak2GqmrUnVw>





But wait...
There's More!

Team Self Evaluation 



Hands-On-Site Evaluation

Level	Sort	Simplify	Shine	Standardize	Sustain
Baseline 0	Unsafe items in work area.	Placement of items causes unsafe conditions.	Spills, waste, trash, etc. produce unsafe conditions.	No work methods or procedures documented.	No routine review/correction of unsafe conditions.
Beginning 1	Needed items for work area.	Needed items are throughout workplace.	Work areas are not cleaned regularly.	Methods not completely documented.	Occasional 5S activities scheduled.
Basic 2	Needed items separated, un-needed items removed.	Needed items organized in an efficient manner.	Area and equipment cleaned consistently.	Methods documented consistently.	5S activities conducted on regular basis (Daily-Weekly).
Visual 3	Red tags created, all un-needed items removed.	Needed items have dedicated areas which are clearly marked.	Standardized layout posted and maintained.	Methods and consistency posted and some staff enforcement.	5S assessments conducted on occasional basis and results posted.
Systematic 4	List of needed items developed, maintained, and posted.	Needed items can be retrieved in seconds and limited inventory.	Daily inspection of work area.	Methods consistently followed by all staff.	5S assessments conducted on a regular basis and recurring problems are identified.
Success 5	Un-needed items are not allowed.	Standardized restocking for needed items. (Flag or inventory).	Root causes of dirt, grease & debris have been eliminated.	Methods regularly improved by team.	Root causes of problems revealed and eliminated through assessment.
Score					



Improvement

- Discussion of Issues Identified
- Improvement Teams
 1. Sort
 2. Simplify
 3. Shine
 4. Standardize
- Sustain – support the team decisions, reinforce those decisions, change of culture



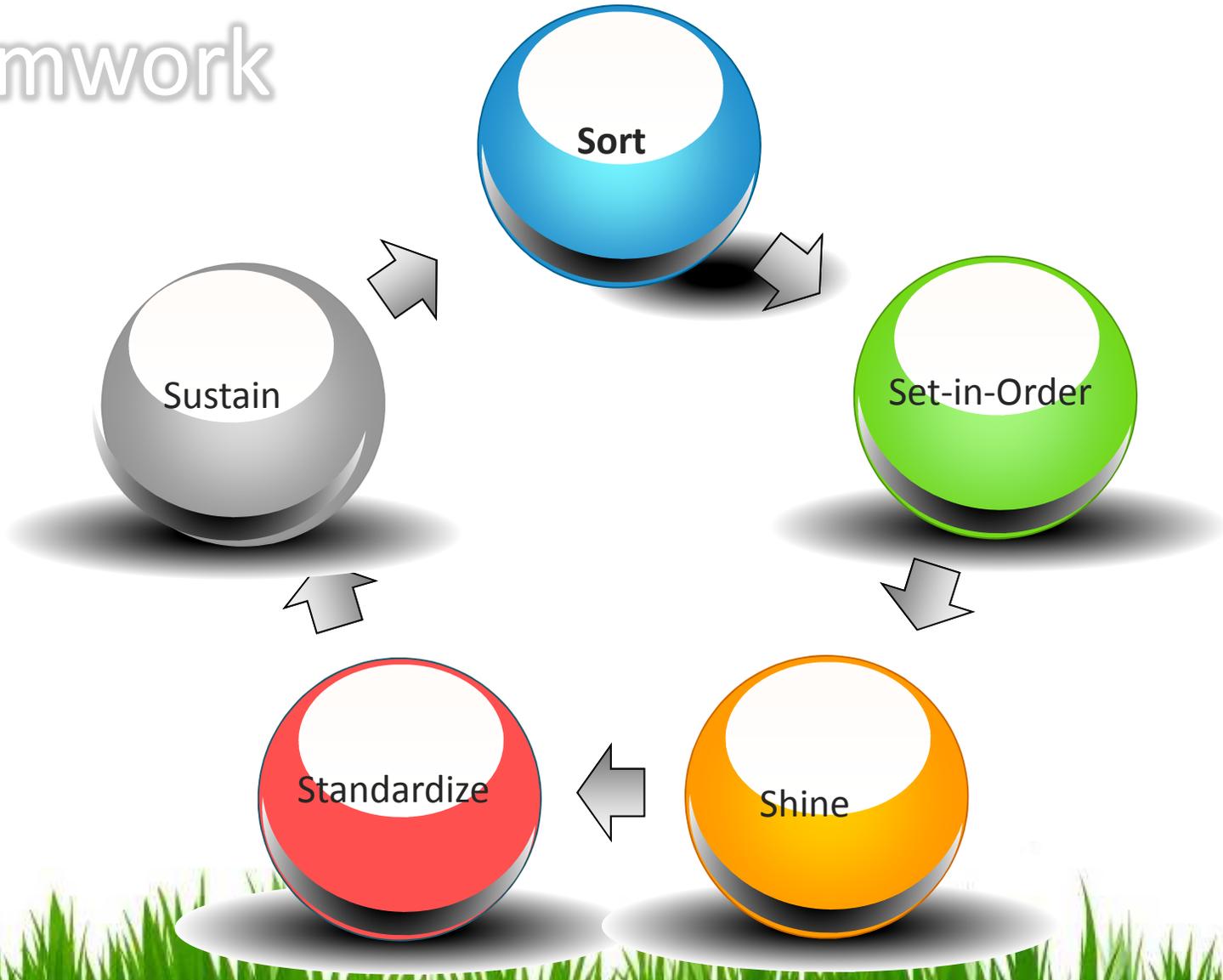
Improvement – *What/Who/When*

- Action Registers
 1. Sort
 1. Remove un-needed items
 2. Red tag
 3. Crowded, cluttered
 4. Excess inventory, supplies, piles
 2. Straighten
 1. Office flow
 2. Easy to find, visual
 3. Organized, in-place
 3. Shine
 1. Clean
 2. Stays clean
 3. Brighten
 4. Supplies
 4. Standardize
 1. Consistency
 2. Procedures/processes
 3. Maintenance/checklists
 4. New habits/culture

Each team will identify specific actions that are necessary and document that action along with the responsible person(s) and at minimum a start date



5S Takes Teamwork



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QUESTIONS

