



DAIRY PRODUCTION

Level -II

Learning Guide -07

**Unit of Competence: Standardize and sustain
3S**

**Module Title: Standardizing and sustaining
3S**

LG Code: AGR DRP2 M03 LO1 LG-07

TTLM Code: AGR DRP2 TTLM 1219v1

LO 1: prepare for work





Instruction Sheet	Learning Guide 07
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Using work instructions to determine job requirements
- Reading and interpreting Job specifications
- Observing OHS requirements
- Identifying and checking safety equipment and tools.
- Preparing and using tools and equipment.

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, upon completion of this Learning Guide, you will be able to –

- Use work instructions to determine job requirements
- Read and interpret Job specifications
- Observe OHS requirements
- Identify and check safety equipment and tools.
- Prepare and use tools and equipment.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 1 to 5.
3. Read the information written in the “Information Sheet **1-5**”.
4. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
5. Accomplish the “**Self-check 1- 5**” in page **5, 8,11,16 and 23** respectively





Information sheet 1	Using work instructions to determine job requirements
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Definition of Job: A piece of work, especially a specific task done as part of the routine of one's occupation or for an agreed price. A post of employment full-time or part-time position.

1.1. Job Requirements

The requirements for a job vary according to the nature of the job itself. However, a certain work ethic must be cultivated to succeed in any job and this is fundamental to an individual's sense of himself as a worker, as part of production relations and a fundamental economic being.

Basic requirements listed as follows

- **Discipline:** Nothing is possible without discipline. Any job requires a fundamental core of discipline from the worker or the employee and this is a quality which is independent of age, post, stature, job and so on. Discipline is absolutely indispensable and provides the impetus for work that can be strenuous, repetitive, boring and even unsatisfactory at times.
- **Enthusiasm:** Enthusiasm for work is also a pre-requisite for any job. An innate love for the job, which in modern parlance is known as job satisfaction, is a core requirement for any job. The drive to succeed, to innovate, to do well and to make one's profession into one's livelihood is a critical drive which needs to be present in the employee or cultivated as soon as possible. No job, however perfectly carried out, can evoke the feeling of satisfaction of a job well done without the instinct for success.





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- **Qualifications:** This is a more material, tactile need for a job which can be conveyed through degrees and certificates. However education is not limited to what is taught in colleges or vocational training courses. It is the burning desire to learn more, to reach the depths of knowledge about a particular field of interest, to complete the job and learn from it that marks the true enthusiast and the truly learned.
- **Soft Skills:** Soft skills include those skills which ensure that a job is executed well, and the employee can carry himself in the proper manner too. For example, good and smooth communication, computer skills, proficiency in language if needed, presentable appearance, the ability to manage crises are all soft skills which are fundamentally important in any job and which must be cultivated consciously.

Thus, the requirements of a job, though specific to it, cover also a general spectrum. These make for better employees and better individuals

1.2. Work Instruction

Work instruction is a description of the specific tasks and activities within an organization. In other words it is a document containing detailed instructions that specify exactly what steps to follow to carry out an activity

- **Information about the work**
 - ✓ Describe what workers need to be able to do on the job
 - Work functions
 - Key activities of each work function
 - Performance indicators
 - ✓ Describe what task to be done or work roles in a certain occupation





1.3. Procedure

Many people confuse “procedures” with “work instructions”. In fact, most people write work instructions and call them procedures. Knowing the differences of procedures vs work instructions can help you understand the documentation process much better and, therefore, procedure documentation.

Procedures describe a process, while a work instruction describes how to perform the conversion itself.

☞ **Kaizen targets or elements**

- ✓ P – Productivity
- ✓ Q – Quality
- ✓ C – Cost
- ✓ D – Delivery time
- ✓ S – Safety
- ✓ M – Moral
- ✓ E – Environment
- ✓ G – Gender Equality



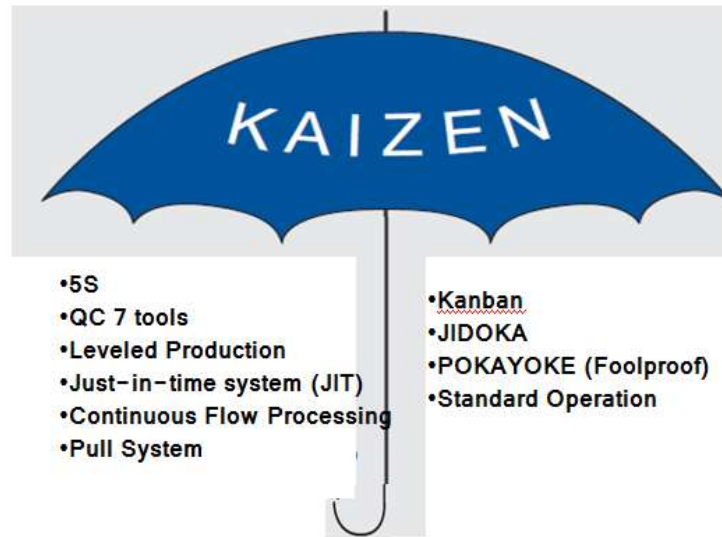


Fig. Some basic Kaizen techniques.

☞ **Communication**

Communication is critical to implementing and sustaining change. Good communication in the change management process allows us to:

- ✓ Share norms and values
- ✓ Develop trust and commitment to the project
- ✓ Share knowledge
- ✓ Generate emotional connections

Communications should take place regularly and should reach all who are affected by the proposed change - staff, consumers, as well as internal and external stakeholders (please see Health Quality Ontario's Voice of the Customer primer for more details).

Try new communication strategies over the course of the implementation process. To assist the QI team in planning when to communicate, what to communicate, and who to communicate to, the following points should be considered:

- ✓ The audience
- ✓ The objectives



- ✓ The message
- ✓ The means of delivering the message.

It is important to highlight the “what’s in it for me,” for everyone affected by the changes being made. Engaging staff and demonstrating how improvements are achieved are important to ensuring support for future changes.

Effective, early, and frequent communication will give those affected by the change some ownership of the project and a vested interest in its success.





Self-check -1	Written test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Define job (2 points)
2. Describe basic job requirements (3 points)?

Note: Satisfactory rating - 5points

Unsatisfactory - below 5points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____





Information sheet -2

Reading and interpreting Job specifications

Job Specification: is a written statement of educational qualifications, specific qualities, level of experience, physical, emotional, technical and communication skills required to perform a job, responsibilities involved in a job and other unusual sensory demands. A statement of employee/workers characteristics and qualifications required for satisfactory performance of defined duties and tasks comprising a specific job or function.

The creation of job specification is not an easy task because sometimes it seems difficult to classify that whether a particular requirement is compulsory or desirable. However, it helps to ascertain that, on what basis a person is recruited and examined. Some common specifications are as under:

- **Physical features:** Height, weight, vision, etc.
- **Demographic features:** Age, experience, gender, education, skills, abilities, etc.
- **Psychological features:** Mental ability, alertness, sharpness, aptitude, reasoning, etc.
- **Personal features:** Attitude, behavior, etiquette, manners etc.

The difference between job description and job specification can be drawn clearly on the following grounds:

1. Job Description is a descriptive statement that describes the role, responsibility, duties, and scope of a particular job. Job Specification states the minimum qualifications required for performing a particular job.
2. Job Description is the outcome of Job Analysis while Job specification is the result of Job Description.
3. Job Description describes jobs, but Job Specification describes job holders.





4. The job description is a summary of what an employee will do after getting selected. Conversely, Job Specification is a statement showing what a person must possess for getting selected.
5. Job Description contains designation, place of work, scope, working hours, responsibilities, reporting authority, salary range, etc. On the other hand, Job Specification contains educational qualifications, experience, skills, knowledge, age, abilities, work orientation factors, etc.

Table 1. Difference between job description and job specification

Basis for Comparison	Job Description	Job Specification
Meaning	Job Description is a concise written statement, explaining about what are the major requirements of a particular job.	The statement which explains the minimum eligibility requirements, for performing a particular job is known as Job Specification.
Lists out	Job title, duties, tasks and responsibilities involved in a job.	Employee's qualification, skills and abilities.
What is it?	It expresses what a prospective employee must do when he will get the placement	It expresses what an applicant must possess for getting selected.
Prepared from	Job Analysis	Job Description
Describes	Jobs	Job Holders
Comprises of	Designation, place of work, scope, salary range, working hours, responsibilities, reporting authority etc.	Educational qualifications, experience, skills, knowledge, age, abilities, work orientation factors, etc.





Self-check 2	Written test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Define job specification (2 points)
2. Write some of common job specifications criteria (4points)
3. List down the difference between job specification and job description (4points)

Note: Satisfactory rating - 10points Unsatisfactory - below 10points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____





Information sheet 3	Observing OHS requirements
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3.1. OHS requirements: is a multidisciplinary field concerned with the safety, health, and welfare of people at work. These terms also refer to the goals of this field, so their use in the sense of this article was originally an abbreviation of occupational safety and health program/department etc. The goal of occupational safety and health programs is to foster a safe and healthy work environment. OSH may also protect co-workers, family members, employers, customers, and many others who might be affected by the workplace environment

Are legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of firefighting equipment, enterprise first aid, hazard control and hazardous materials and substances.

Personal protective equipment includes those prescribed under legislation/regulations/codes of practice and workplace policies and practices. Safe operating procedures include the conduct of operational risk assessment and treatments associated with workplace organization. Emergency procedures include emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.

Occupational safety and health (OSH) also commonly referred to as occupational health and safety (OHS) or workplace health and safety (WHS) is an area concerned with the safety, health and welfare of people engaged in work or employment. The goals of occupational safety and health programs include fostering a safe and healthy work environment. OSH may also protect co-workers, family members, employers, customers, and many others who might





be affected by the workplace environment. In the United States the term occupational health and safety is referred to as occupational health and occupational and non-occupational safety and includes safety for activities outside work.

Occupational safety and health can be important for moral, legal, and financial reasons. In common-law jurisdictions, employers have a common law duty (reflecting an underlying moral obligation) to take reasonable care for the safety of their employees. Statute law may build upon this to impose additional general duties, introduce specific duties and create government bodies with powers to regulate workplace safety issues: details of this will vary from jurisdiction to jurisdiction. Good OSH practices can also reduce employee injury and illness related costs, including medical care, sick leave and disability benefit costs.





Self-check - 3	Written test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What do OHS represent? (2 point)
2. List some examples of OHS requirements in your work areas. (4 points)

Note: Satisfactory rating - 6points Unsatisfactory - below 6points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____





Information sheet 4

Identifying and checking safety equipment and tools.

Personal protective equipment (PPE) is protective clothing, helmets, goggles, or other garments or equipment designed to protect the workers body from injury or infection. The hazards addressed by protective equipment include physical, electrical, heat, chemicals, biohazards, and airborne particulate matter. Protective equipment may be worn for job-related occupational safety and health purposes, as well as for sports and other recreational activities. Personal protective equipment can be categorized by the area of the body protected, by the types of hazard, type of work being performed and by the type of garment or accessory.

Some of personal protective equipment may include, but not limited to:

- Overalls
- Gloves
- Ear protection
- Face masks
- Safety goggles
- Plastic boots/shoes
- Sunhats

Making the workplace safe includes providing instructions, procedures, training and supervision to encourage people to work safely and responsibly.

Even where engineering controls and safe systems of work have been applied, some hazards might remain. These include injuries to:



- ✓ the lungs, e.g. from breathing in contaminated air
- ✓ the head and feet, e.g. from falling materials
- ✓ the eyes, e.g. from flying particles or splashes of corrosive liquids
- ✓ the skin, e.g. from contact with corrosive materials



- ✓ the body, e.g. from extremes of heat or cold.

PPE is needed in these cases to reduce the risk.

Dermal PPE	Comments
 <p data-bbox="219 1276 587 1312">Chemical-resistant gloves</p>	<p data-bbox="803 569 1170 604">Chemical-resistant gloves</p> <ul data-bbox="824 611 1430 1003" style="list-style-type: none"> • Can include inner and outer gloves, plus sleeves • May be included as one element of a complete <u>protective ensemble</u> or purchased separately to complete an ensemble • If purchased separately, must be certified for wear with the chosen protective ensemble • Some standards require specific gloves be worn with certified ensembles.
	<p data-bbox="803 1346 1154 1381">Chemical-resistant boots</p> <ul data-bbox="824 1388 1430 1780" style="list-style-type: none"> • Can provide complete CBRN protection or additional chemical barrier protection as over boots • May be included as one element of a complete <u>protective ensemble</u> or purchased separately to complete an ensemble • If purchased separately, must be certified for wear with the chosen protective ensemble • Some standards require specific boots

<p>Chemical-resistant boots</p>	<p>be worn with certified ensembles</p>
	<p>Chemical-resistant boot covers</p>
 <p>Protective eyewear: safety goggles</p>	<p>Protective eyewear: safety goggles</p>


 <p>Protective eyewear: face shield</p>	<p>Protective eyewear: face shield</p>
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Fig. PPE



Self-check- 4	Written test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Mention importance of Personal protective equipment (3points)

Note: Satisfactory rating – 3 points Unsatisfactory - below 3 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____





Information sheet-5

Preparing and using tools and equipment.

As technology has advanced, material handling offerings have become more specialized. From traditional sit-down forklifts to stand-up riders and advanced warehousing equipment, it is more important than ever to make sure your equipment is appropriate for your work.

Tools and materials used to implement 3S

The following are some tools and materials

- ✓ Sponge
- ✓ Oil
- ✓ Broom
- ✓ Detergents
- ✓ Brush
- ✓ Spade
- ✓ Paint
- ✓ vacuum cleaner
- ✓ Bolts
- ✓ Garbage containers
- ✓ Floor scrubber cleaning Pads
- ✓ Screws.





Fig.1. Dustpan and brush



Fig.2. Hard broom and plastic dustpan.



Fig. 3.The Stable Master Shovel



Fig. 4.spade



Fig. 5. Stable and Yard Broom

Fig. 6. garbage containers



Fig. 7. Squizzo Floor Mop - Replacement Head

Fig.8. Floor scrubber cleaning Pads





Fig. 10. screw

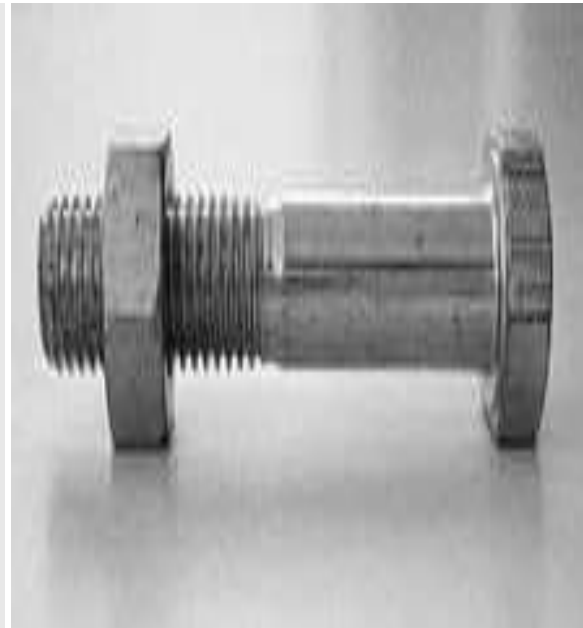


Fig. 11. Bolts



Fig. 12. detergents



Fig.13. Paint



Self-check-5	Written test
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1. List at least five tools and materials used in kaizen. (5 points)

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Short Answer Questions





List of Reference

1. <https://www.hse.gov.uk/toolbox/ppe.htm>
2. https://www.remm.nlm.gov/percutaneous_ppe.htm



DAIRY PRODUCTION

Level -II

Learning Guide - 08

**Unit of Competence: Standardize and sustain
3S**

**Module Title: Standardizing and sustaining
3S**

LG Code: AGR DRP2 M03 LO-2 LG-08

TTLM Code: AGR DRP2 TTLM 1219v1

LO 2: Standardize 3S



Instruction Sheet	Learning Guide 08
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Preparing and using plan
- Preparing and implementing tools and techniques to standardize 3S
- Following Checklists for standardize activities and reporting
- Keeping the workplace to specified standard
- Avoiding problems by standardizing activities

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Prepare and use plan
- Prepare and implement tools and techniques to standardize 3S
- Follow Checklists for standardize activities and report
- Keep the workplace to specified standard
- Avoid problems by standardizing activities

Learning Instructions:

6. Read the specific objectives of this Learning Guide.
7. Follow the instructions described in number 1 to 5.
8. Read the information written in the “Information Sheet (1 -5)
9. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
10. Accomplish the “**Self-check 1-5**” in page **4, 13, 15,18 and 21** respectively.

Information sheet 1

Preparing and using plan

Introduction

Standardize, the fourth pillar of our visual workplace, differs from Sort, Set in Order, and Shine. This is because it is the method- you use to maintain the first three pillars of 5S. Building on this definition, we may define Standardize the result that exists when the first three Pillars-Sort, set in order and Shine-are properly maintained.

Improvement is relative, so in order to know if your Kaizen event has been effective, you must set some benchmarks for improvement. That means taking some objective measurements of existing results and deciding how much better you expect them to be after the event. These key performance indicators might include metrics around quality, cost, resource utilization, customer satisfaction, space utilization, staff efficiency, or other results important to your business.

Provide Training

If your team has had lots of practice with Kaizen events, pre-event training might not be necessary. Otherwise, it is essential to take the time to provide guidance on what to expect during a Kaizen event and which improvement tools will be used. The team should be training on your improvement management technology and know how it will be used before, during, and after the event to support the effort and capture the knowledge generated. Everyone should be clear about their role and know how their performance will be measured.

Outline the event Schedule

Plan- stage involves analyzing the current situation, gathering data, and developing ways to make improvements.

Flexibility is important during a Kaizen event, but going in, you should have a general roadmap of what is expected to occur. Your exact needs may vary, but generally, we see a plan that looks like:

- Day 1: Map and measure the current process. Decide on the desired results.
- Day 2: Consider root causes and possible solutions. Achieve consensus on improvements to be implemented. Document resources needed to apply improvements.
- Day 3: Implement improvements.
- Day 4: Measure results and apply any necessary adjustments. Document new standard work.
- Day 5: Complete training on new standard work. Communicate the changes to the organization. Recognize and reward team members who contributed to success.

As you can see, much of the effort of a successful Kaizen event is front loaded. But careful planning is needed if you want to achieve significant results that last. If you follow each of these steps, you'll put yourself and the team in the best position to tackle even the trickiest of challenges.

The most critical stage of any kaizen event is the **preparation**. Yet properly defining the problem, goal and scope can be very challenging. Try this simple but effective approach. First, team leaders should ask the following:

- ✓ What is the purpose of the event?
- ✓ What process or value stream will be targeted?
- ✓ What are the desired outcomes?
- ✓ Who should be on the team?

Answering these questions helps **ensure planning and scoping are done properly, goals** and objectives are realistically determined, and the right people participate.

- ✓ Next, create a problem statement. Answer these questions to define the problem:
- ✓ What is or isn't occurring, and to what degree?
- ✓ Where in the process or product does it occur?

- ✓ Who does the problem affect?
- ✓ When did it occur, and has it occurred before?
- ✓ How much impact is there, and what is the magnitude in terms of frequency, cost, time and customer satisfaction?

Table. 2. Template for prepare plan

Activities	Timing							
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Training								
Meeting								
etc								



Self-Check -1	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are the questions helps to ensure planning and scoping done properly.(4 points)

2. Define plan. (1pt)

Note: Satisfactory rating – 5 points

Unsatisfactory - below 5 points

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____



Information Sheet-2	Preparing and implementing tools and techniques to standardize 3S
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2.1 common Tools and Techniques to standardize 3S are:

- ✓ 5S Job Cycle Charts
- ✓ Visual 5S
- ✓ The Five Minute 5S
- ✓ Standardization level checklist
- ✓ 5S checklist
- ✓ The five Whys and one How approach(5W1H)
- ✓ Suspension
- ✓ Incorporation
- ✓ Use Elimination

2.2. Steps to make the 3S Activities a Habit/Standardize

2.2.1. Assign 3S Responsibilities

When it comes to maintaining three pillar conditions, everyone must know exactly what they are responsible for doing and exactly when, where and how to do it. If people are not given clear 3S job assignments based on their own workplaces, the Sort, Set in Order, and Shine activities will not have much meaning. Similarly, clear 3S instructions must be given to the people who deliver goods from outside suppliers. The delivery sites should be clearly marked and a 5S Map posted to show where each supplier's goods are to be unloaded. At each unloading site, signboards should make it clear whose things go where and in what amount. The suppliers should be made responsible for maintaining 3S conditions at their own unloading sites and encouraged to join in full 5S implementation.

2.2.2. Integrate 3S Duties into Regular Work Duties

If people carry out three pillar maintenance duties only when they see three pillar conditions slipping, then the five pillar implementation has not yet taken root. Maintenance must become a natural part of everyone's regular work duties. In other words, the five pillars -centered on maintaining 3S conditions-must be part of the normal work flow. We sometimes refer to this as "5S line integration" or establishing a five pillars flow. Visual 5S and Five-Minute 5S are two approaches that help make maintenance work part of the everyday work routine.

➤ Visual 5S

The Visual 5S approach makes the level of five pillar conditions obvious at a glance. This is particularly helpful in factories that handle a great variety and number of materials.

The main point of Visual 5S is that anyone should be able to distinguish between abnormal and normal conditions at a glance. As a factory example, consider a drill-press process where Set in order has been applied so that the position and amount of each finished work piece is clearly indicated. As an additional visual aid, the place where the last batch item goes can be marked with a thick red line to indicate that it is time to stop and send the batch to the next process

➤ Five-Minute 5S

When using the Visual 5S approach, instant visibility can act as a trigger for taking immediate three pillar action (Sort, Set in Order, and Shine activities) against the discovered abnormalities (i.e., overproduction, disorder, and contamination). We must also deal with the question of how skillfully and efficiently these actions are carried out. Instead of following two hours for removing all of the cutting shavings from the floor, we can set up a half-hour or a one-hour Shine procedure that accomplishes the same task. The term "Five-Minute 5S" is a loose one-the actual time can be three minutes, six

minutes, or whatever is appropriate. The point is to make the five pillar work brief, efficient, and habitual. In figure below shows a signboard that was made as part of a Five-Minute 5 campaign

➤ **Check on 3S Maintenance Level**

After we have assigned the three pillar jobs and have incorporated the three pillar maintenance into the everyday work routine, we need to evaluate how well the three pillars are being maintained. For this, we can use a Standardization-level Checklist as shown in the figure below

To evaluate the effectiveness of the maintenance activities, the evaluator ranks the Sort, Set in order, and Shine levels on a scale of 1 to 5. Such checklists can be made for specific workshop and/or production processes. One example is shown in the Figure below. 5S Checklists like the one in the figure are used to check five pillar levels in the factory as a whole. When a company implements 5S Month of intensive activities, 5S Checklists should be used to make weekly evaluation of five pillar conditions

➤ **The Concept of Prevention**

When we find that tools have not been put back correctly, we immediately take care of them. When we find an oil puddle on the floor, we immediately mop it up. Making these actions habit is the foundation of Standardize. However, when the same problems keep on happening over and over again, it is time to take the concept of Standardize to the next level: prevention.

To take this pillar to a higher level, we must ask "why?" Why do unneeded items accumulate (despite Sort procedures)? Why do tools get put back incorrectly (despite Set in order procedure)? Why do floors get dirty (despite Shine procedures)? When we ask "why" repeatedly, we eventually find the source of the problem and can address that source with a fundamental improvement. Such improvements can help us develop Unbreakable standardization, which means:

- ✓ Unbreakable sorting
- ✓ Unbreakable setting in order



✓ Unbreakable setting shining

Unbreakable Standardization = Unbreakable Sorting
+ Unbreakable Set in order
+ Unbreakable Shining

Prevent unneeded items from Accumulating (Preventive Sort Procedures)

The Red-Tag Strategy described sorting out unneeded items. This strategy is a visual control method that enables anyone to see at a glance which items are no longer needed. However, we should note that the Red-Tag Strategy is an after-the-fact approach that deals with unneeded items that have accumulated. No matter how often we implement this strategy, unneeded items will accumulate in the interim.

Nowadays, smart companies are shifting from this type of "alter the-fact" sorting to preventive sorting. Preventive sorting means that instead of waiting until unneeded items accumulate; we find ways to prevent their accumulation. We could also call this approach "unbreakable" sorting because once sort procedures have been implemented, having only needed items in the workplace becomes an "unbreakable" condition.

To achieve unbreakable sorting we must prevent unneeded items from even entering the workplace. These words- «only what is needed" -have a familiar ring to anyone acquainted with the just-in- time (JIT) philosophy and program. To prevent the accumulation of unneeded inventory, we must find a way to procure and produce only those materials that are needed, only when they are needed, and only in the amount needed.

For example, suppose your company is scheduled to produce a certain number of units of a product during a particular month. Ideally, at the beginning of this month, only the



parts needed to produce the scheduled number of units would be delivered to you from your suppliers. For any given part, your company might even receive the part in several deliveries, depending on the type of part and the delivery considerations.

Receiving parts just-in-time for production rather than storing large quantities of parts in advance eliminates many of the potential costs associated with maintaining inventory. As well, receiving parts just-in-time is a preventive measure that avoids the accumulation of parts that needed to be sorted.

☞ **Prevent Things from Having to Be Put Back (Preventive Set in Order Procedures)**

Preventive setting in order means keeping set in order procedure from breaking down. To achieve preventive setting in order, we must somehow prevent the inefficiency that results from the lack of orderly control of any specific item.

There are two ways to do this:

- (1) make it difficult to put things in the wrong place and
- (2) make it impossible to put things in the wrong place.

The first method relies heavily on discipline and visual controls. Clearly marked storage sites show at a glance what goes where and in what amount. When it is obvious what goes where and in what amount. When it is also obvious that things are not put back properly. As people practice returning things, such visual setting in order becomes habitual. This condition supports setting in order that is difficult to break. However, there is still a big difference between setting in order that is difficult to break and setting in order that is unbreakable. 'Why settle for the first when the second is possible? But how we achieve unbreakable setting in order?

☞ **The 5 Whys and 1How (5W1H) Approach**

We begin by asking "why?" until we identify the underlying causes- for every answer we get we must ask "why" again. Usually we ask "why" at least five times to get to the root

of the problem. When we do find the underlying cause, we ask "how" we call fix it. Accordingly, this method is called the "5W1H" approach.

When we ask "why" setting in order is breakable, we find that one answer is because people make mistakes putting things back. At this point, we need to identify what types of items are not being returned correctly. Once we identify this, the question is how to achieve unbreakable setting in order by making it impossible to return them to the wrong place. If we can somehow eliminate the need to return items at all, we can achieve unbreakable setting in order.

Three techniques for doing this are:

- ✓ Suspension
- ✓ Incorporation
- ✓ Use elimination.

➤ **Suspension**

In the Suspension technique, tools are literally suspended from above, just within reach of the user. Figure above shows this method in practice. Here a weighted pulley device is used to suspend tools from an overhead rack. When the operator finishes using the tool, he merely releases it and it automatically returns to its proper storage place.

While this technique does not eliminate the need to return items to a specific place, it does effectively eliminate the need for people to return them. People may make mistakes in returning things, but suspension devices do not. This technique achieves unbreakable setting in Order.

➤ **corporation**

Incorporation means creating a flow of goods or operations in a factory process in which (1) jigs, tools, and measuring instruments are smoothly integrated into the process and (2) such devices are stored where they are used and therefore do not have to be returned after use. The figure below shows an example where a measuring gate has been incorporated into a cutting process for an automobile part. The measuring gate catches any pieces that have not been machined to the correct height. This measuring procedure is an example of "mistake-proofing" (or poka-yoke). The incorporation of the

measuring gate into the cutting process means that its storage place is also its place of use. It is therefore used (for full-lot inspection) without having to be put back anywhere.

➤ **Use Elimination**

Suspending or incorporating jigs, tools, or measuring instruments effectively eliminates the need to return them after each use. However, these items are still being used. The question is whether there is some way to serve the function of the tool without using the jig, tool or measuring instrument. A set in or eliminates the use of a particular jig, tool or measuring instrument is in fact unbreakable setting in order.

There are three techniques for eliminating the use of certain tools:

- ✓ Tool unification
- ✓ Tool substitution
- ✓ Method substitution

➤ **Tool unification**

Tool unification means combining the functions of two or more tools into a single tool. It is an approach that usually reaches back to the design stage. For example, we can reduce the variety of die designs to unify dies or make all fasteners that require a screw-driver conform to the same kind of screw-driver, flat-tip or Phillips.

➤ **Tool substitution**

Tool substitution means using something other than a tool to serve the tool's function, thereby eliminating the tool. For example, it is sometimes possible to replace wrench-turned bolt with hand-turned butterfly-grip bolts, thereby eliminating the need for a wrench.

➤ **Method substitution**

If we substitute ordinary wrench-turned bolts with hand-turned butterfly-grip bolts, we have eliminated the wrench, but we have not eliminated the method (bolt fastening). Bolt fastening is just one way to fasten things. Fastening pins, clamps and cylinders can also be used for this purpose. We may find we can improve efficiency even more by replacing one method with another. This is "method substitution."

Prevent Things from Getting Dirty (Preventive Shine Procedures)

Preventive shine Procedures will prevent things from getting dirty to begin with. Anyone who has participated in 5S implementation can tell you that the initial cleanup is very hard work. To minimize the drudgery of cleaning up, the key is to treat contamination problems at their source. The 5Why approach can be applied to figure out why dirt is being generated, and how this problem can be fixed.

For example, instead of mopping up oil puddles, figure out where the oil is leaking from and repair the leak.

1. Question: Why mop the floor every day?

Answer: Because oil collects on the floor.

2. Question: Does oil collect on the floor every day?

Answer: Because there's a leak from the drill press machine

3. Question: Why is there a leak from the drill press machine?

Answer: Because oil is leaking from a valve.

4. Question: Why is oil leaking from a valve?

Answer: Because it's broken.

5. Question: Why hasn't the valve been replaced?

Answer: Because we didn't notice it was broken

6. Question: How can we coordinate getting the valve fixed?

Answer: The maintenance team will order the part and the operator will replace it.



Self-Check -2	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write techniques for eliminating the use of certain tools? (4 points)
2. List at least five tools and techniques used to standardize 3S? (4 points)

Note: Satisfactory rating - 8 points

Unsatisfactory – below 8 points

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____



Information Sheet-3	Following Checklists for standardize activities and report
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3.1 Checklists for standardized activity

A checklist is a tool for identifying the presence or absence of conceptual knowledge, skills, or behaviors. Checklists are used for identifying whether key tasks in a procedure, process, or activity have been completed. The tasks may be a sequence of steps or include items to verify that the correct sequence was followed. You may need to observe the tasks being followed because, in general, you cannot judge what tasks the learner did from the end product. Remember that some attitudes may be indirectly observed. For example, safety attitudes can be observed by seeing if safety equipment is worn. A checklist may also be given to students to follow in completing a procedure (e.g., in a shop or lab). A checklist itemizes task descriptions in one column and provides a space beside each item in a second column to check off the completion of the task.

3.1.1. Characteristics of checklists

Checklists should:

- ✓ Have criteria for success based on expected outcomes
- ✓ Be short enough to be practical (e.g., one sheet of paper)
- ✓ have tasks chunked into logical sections or flow from start to finish
- ✓ Highlight critical tasks
- ✓ Have sign-off points that prevent students from proceeding without approval, if needed
- ✓ Be written with clear, detailed wording to minimize the risk of misinterpretation
- ✓ Have space for other information such as the student's name, date, course, examiner, and overall result



Self-Check -3	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write Characteristics of checklists? (4 points)
2. Define checklist. (1pt)

Note: Satisfactory rating - 5 points

Unsatisfactory – below 5 points

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____



Information sheet 4

Keeping the workplace to specified standard.

4.1. Sort

Sort means to get rid of all unnecessary items. Companies sell them, recycle them, or throw them away. And the best companies do this on an ongoing basis. Once you've gotten rid of all the crap by sorting, the next relevant activity is to sweep.

4.2. Sweep

Some people call this shine instead of Sweep. Sweep means to keep your workplace clean and tidy. It removes dirt, debris, oil, and grime and anything else. But the real heart of Sweep is inspection. Cleaning the workplace regularly gives you an ongoing opportunity to find problems and to address the sources of mess generators in your workplace. For example, instead of vacuuming up shavings from a table saw every day you might find opportunity to install a vacuum permanently onto the table saw with automatic turn on and shut off. That way the wood shavings never create a mess on the floor in the first place. But observations like this only happen when inspecting while you sweep.

4.3. Standardize

The last activity of 3S is to Standardize. Standardization comes in many formats and some depend on the nature of your business and industry. This could be a document standard or a physical standard. It could be a work instruction, visual aid, form, or other document. Or it could be a physical label, a color coding system, a method or best practice, training, a set number, location, or layout of tools, or any other number of things.

I actually didn't see or understand the true value of standardization when I first learned about Lean. But it is actually incredibly important. You've got to learn to rapidly Standardize your incremental improvements if you're going to get anywhere with lean. If you don't standardize your improvements, they never get any traction in your organization. They have no sticking power and don't get implemented. So



standardization is huge. And it's a job that is too big for management to carry out alone. It's the duty of every employee to be constantly updating the standard way to do their work.

So one more time, 3S describes three activities of lean. Sort is to get rid of the crap that is cluttering your workspace. Sweep is to keep it clean and tidy, and really to inspect things for potential problems. And Standardize is to keep your work standards current and updated; it's the key to successful implementation and sustainment.





Self-Check -4	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Define sweep, sort and standardize. (3 points)

Note: Satisfactory rating - 3 points

Unsatisfactory – below 3 points

Answer sheet

Name: _____

Date: _____

1 _____



Information Sheet-5	Avoiding problems by standardizing activities
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Standardization promotes productivity by eliminating inefficiency. This is the result of eliminating ambiguity and providing quality control: tasks are completed in a more efficient manner, and there are fewer quality control issues from tasks that were not completed correctly the first time around.

Standardization is the way in which businesses can reduce their costs (whether financial or time). It is the way an organization which aims to ensure clear, visualized and safe working environment. With proper implementation of standards prevents defects in production and at the same time constitute procedures to prevent the occurrence of other errors that could have an impact on production. It is therefore desirable to standardize all processes carried out in the manufacturing sector. Standardization is a key element of lean manufacturing. The standardization process is considered the basis for continuous improvement (Kaizen). Improving standardized work is a never-ending process.

Every improvement and change in the manufacturing process is completed the development of standards. Without standards, there is improvement and management. The standards define best practices for the implementation of the work. The aim is to do the job right the first time without error, without negative effects on humans and the surroundings. If you improve the standard, the new standard becomes the basis for further improvements etc.

Benefits of standardization

- ✓ Reductions in variability
- ✓ Easier training of new operators



- ✓ Reductions in injuries and strain (ensuring safety for internal / external clients)
- ✓ Baseline for improvement activities
- ✓ The reduction of variation and error correction,
- ✓ Improved safety,
- ✓ Facilitate communication,
- ✓ Visibility problems,
- ✓ Assistance in training and education,
- ✓ Increasing labor discipline,
- ✓ Facilitating the response to the challenges,
- ✓ Clarification of the working procedures.





Self-Check -5	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. list down the benefits of standardization? (4 points)

Note: Satisfactory rating - 4 points

Unsatisfactory – below 4 points

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____



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DAIRY PRODUCTION

Level -II

Learning Guide -9

**Unit of Competence: Standardize and sustain
3S**

Module Title: Standardizing and sustaining 3S

LG Code: AGR DRP2 M03 LO3-LG-09

TTLM Code: AGR DRP2 TTLM 1219v1

LO 3: Sustain 3S



Instruction Sheet	Learning Guide # 09
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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Preparing and following plan.
- Discussing, preparing and implementing tools and techniques.
- Inspecting workplace.
- Cleaning up workplace.
- Identifying situations and taking actions.
- Recommending Improvements.
- Following checklists and reporting.
- Avoiding Problems by sustaining activities.

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, upon completion of this Learning Guide, you will be able to –

- Prepare plan is and followed to standardize 3S activities.
- Discuss, prepare and implement tools and techniques to sustain 3S
- Inspect workplace regularly for compliance to specified standard
- Clean up workplace after completion of job and before commencing next job or end of shift.
- Identify situations where compliance to standards is unlikely and actions specified in procedures are taken.
- Recommend Improvements to lift the level of compliance in the workplace.
- Follow checklists to sustain activities and report to relevant personnel.
- Avoid problems by sustaining activities

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 4.
3. Read the information written in the information “Sheet 1-8”.
4. Accomplish the “Self-check 1-8” in **page -5, 10, 13,16,20,23,27, and 30** respectively. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1 and 2 in **page -31 and 32 respectively.**
5. Do the “LAP test” in page – 33 (if you are ready).

Information Sheet-1	Preparing and following plan
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The fifth pillar is Sustain. In the context of the five pillars, to sustain means to make a habit of properly maintaining correct procedures. In your life in general, what do you mean when you talk about sustaining something? Usually, you think of it as drawing on something from inside yourself in order to maintain a course of action-even when forces in your life challenge in this effort.

Plans

Sustainability is achieved when the new ways of working and the resulting improved outcomes become the norm. Not only have the processes and outcomes changed, but the thinking and attitudes behind them are fundamentally altered. In other words, the change has been integrated into the day-to-day, rather than something ‘added on.’

Table.1. Sample of plan

Date of issue: Issued by 5S Committee																												
Overall Plan for 5S Promotion																												
Item	1st month				2nd month				3rd month				4th month				5th month				6th month				Progress (%)			
	1w	2w	3w	4w	1w	2w	3w	4w	1w	2w	3w	4w	1w	2w	3w	4w	1w	2w	3w	4w	1w	2w	3w	4w	25	50	75	##
Basic plan	Preparation												Sort				Set-in-Order				Shine				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
													Sustain				Standardise								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
																									<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
																									<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preparing necessary tools	The tools common to the activities can be prepared in advance.																								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preparing textbook for 5S education	The tools common to the activities can be prepared in advance.																								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Providing 5S introductory education	Provide comprehensive 5S education.																								<input type="checkbox"/>			
Providing 5S education	Provide 5S education prior to the start of each 5S activity.																											
Photo-shooting	Take photographs before and after each activity.																											
																									Achievement reviews will be conducted in the later term of each 5S activity to choose the best 5S activity results.			

1.1. Creating Conditions to Sustain Your Plans

The implementation of the sustain pillar is different from that of the sort, set in order, shine, or standardize pillars in that the results are not visible and cannot be measured. Commitment to it exists in people's hearts and minds and only that have shown its presence. Because of this it cannot exactly be “implemented” like a technique, However, we can create conditions that encourage the implementation of the sustain pillar.

For instance, going back to our exercise program example, how could you create conditions in your own life that would encourage sustaining your plan to work out at a gym three time a week? You might:

- ✓ Join a gym with a friend so you can work out together and encourage each other (see Figure above).
- ✓ Create a workout schedule with your friend.
- ✓ Make a plan with your spouse to eat dinner later three nights a we so you can go to the gym after work.
- ✓ Get extra sleep on the nights before you work out, so that you will not be too tired by the end of the day to follow through with your exercise plan.

These conditions would make it easier for you to sustain your schedule for exercising at the gym three times a week.

Similarly, you and your company can create conditions or structure that will help sustain to the five pillars.

The types of conditions that are most useful for this are:

- ✓ **Awareness.** You and your coworkers need to understand what the five pillars are and how important it is to sustain them.
- ✓ **Time.** You need to have or make enough time in your work schedule to perform 5S implementation.
- ✓ **Structure.** You need to have a structure for how and when 5S activities will be implemented.
- ✓ **Support.** You need to ha e support for your efforts from management in terms of acknowledgement, leadership, and resource
- ✓ **Rewards and Recognition.** Your efforts need to be rewarded.

- ✓ **Satisfaction and Excitement.** The implementation of the five pillars needs to be fun and satisfying for you and the company. This excitement and satisfaction gets communicated from person to person, allowing 5S implementation to build as it involves more people.0

☞ **Roles in Implementation of plan**

In order to sustain 5S implementation in your company, both you and the company management have important roles to play. Part of this role involves creating the conditions that sustain 5S activities. The other part involves demonstrating a commitment to 5S yourself.

☞ **The Role of Management**

The supervisors and managers in your company have a major role to play in ensuring the success of the five pillars by creating conditions that help sustain 5S activities.

This role includes:

- ✓ educating you and your coworkers about 5S concepts, tools, and techniques;
- ✓ creating team for implementation
- ✓ allowing time for implementation and creating schedules for this work
- ✓ Providing resources for 5S implementation. such as supplies-s
- ✓ acknowledging and supporting 5S efforts
- ✓ Encouraging creative involvement by all workers, listening to their ideas, and acting on them.
- ✓ creating both tangible and intangible rewards for 5S efforts
- ✓ promoting ongoing 5S efforts

Your supervisors and managers also have an important role to play in implementing the fifth pillar in their own work. When they sustain the first four pillars, they perform three very important functions.

- improving the quality and efficiency of their own work
- teaching by example
- demonstrating the company's commitment to 5 implementations

☞ **Yours Role**

Similarly, you have an important role to play in creating the conditions that Sustain 5S activities. This role includes:

- ✓ continuing to learn more about 5S implementation

- ✓ helping to educate your coworkers about the 5S
- ✓ being enthusiastic about 5S implementation
- ✓ helping to promote 5S implementation efforts

You also have an important role to play in order to sustain 5S activities in your own work. This role includes:

- ✓ taking the initiative to figure out ways to implement the five pillars in your work on a daily basis
- ✓ asking your supervisor or manager for the support or resources you need to implement the five pillars
- ✓ participating fully in company 5S implementation efforts
- ✓ bringing to your supervisor or manager your creative ideas for promoting or implementing the five pillars
- ✓ participating fully in company 5S promotion efforts

Self-Check 1	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Define the fifth pillar of 5S? (2 point)
2. Explain how to implement sustain? (3points)
3. What are the roles of you and your management in implementation of sustain kaizen? (5points)

Note: Satisfactory rating - 10 points

Unsatisfactory - below 10 points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Information Sheet-2

Tools and techniques to sustain 5s

2. Common Tools and techniques to sustain 5s are:

There are many tools and techniques your company can use to help sustain commitment to 5S implementation. We offer these below so you will be aware of them. At some point in your 5S implementation work, you may be called upon to use or even coordinate the use of these techniques. These are:

- ✓ 5S slogans
- ✓ 5S posters
- ✓ 5S photo exhibits & storyboards
- ✓ 5S newsletter
- ✓ 5S maps
- ✓ 5S pocket manuals
- ✓ 5S department/benchmarking tours
- ✓ 5S months
- ✓ 5S audit
- ✓ Big cleaning day

Patrolling system: -

- ✓ Top management Patrol
- ✓ 5S Committee members and Promotion Office Patrol
- ✓ Mutual patrol
- ✓ Self-patrol
- ✓ Checklist patrol
- ✓ Camera patrol

5S Slogans

5S Slogans communicate the themes of the five pillar campaign in your company. They are most effective when they are suggested by you and your coworkers.

They can be displayed on buttons, stickers, flags, or posters.

- It encourages all the participants.

Samples of slogan

- ✓ “Refresh yourself and workplaces by 5S activity.”
- ✓ “Let’s maintain current 5S activity and KAIZEN for tomorrow”
- ✓ “We polish “Our Minds” as well as our factories”

5S Posters

Posters displaying 5S Slogans or descriptions of 5S activities can be posted throughout the workplace. They can serve to remind everyone of the importance of the five pillars, or to communicate the results or status of 5S activities.



Fig.1. Samples of poster

5S Photo Exhibits and Storyboards

When it comes to communication about 5S implementation, the old saying that a "picture is worth a thousand words" is definitely true. Photo Exhibits and Story boards showing the before and after of 5S implementation activities are powerful tools for promoting the five pillars. Photos and Storyboards can also communicate the status of five pillar activities.

5S Newsletters

5S Newsletters are in-house news bulletins centered on five pillar topics. They carry factory reports on 5S conditions and activities. 5S Newsletters are most effective when issued on a regular basis, perhaps once or twice a month and at staff meetings.

5S Maps

5S Maps can also be used to get employees involved in five pillar improvement on an ongoing basis. 5S improvement Maps should be hung in a central location with suggestion cards attached so anyone can suggest improvements.

5S Pocket Manuals

A 5S Pocket Manual can be created that contains five pillar definitions and descriptions, and is small enough to fit into the pocket of work clothes. Shop floor workers, supervisors, and managers can all use 5S Pocket Manuals for easy reference to the 5S essentials.

5S Department Tours

When one department in a company has implemented the five pillars successfully, it can serve as a model area for other departments to come visit. Since "seeing is believing," this technique is extremely effective for promoting 5S implementation throughout a company.

5S Months

Companies should designate two, three, or four months every year as "5S Months." During these months, various activities such as 5S seminars, field trips, and contests can be carried out to further promote 5S implementation in the company.

5s Audit

- ✓ The purpose of this audit is to outline an approach making 5S a success in industrial as well as our working areas.



- ✓ Enable 5S teams to design and establish a simple, effective and visual workplace organization, which creates a professional workplace and culture that is effective, organized and disciplined.
- ✓ Continual Improvement internal audit program enhance excellent service delivery
- ✓ Audit findings can be used to identify trends and the key issues.



Self-Check 2	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write at least five Common Tools and techniques to sustain(5pts)
2. Write two example of 5S slogan. (2pts)

Note: Satisfactory rating - 7 points

Unsatisfactory - below 7 points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Information Sheet-3	Inspecting the workplace
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An inspection involves checking something, i.e., examining and assessing something. We may inspect a building or organization to make sure that it meets specific standards. The inspectors need to ensure that nothing is faulty and that nobody is breaking any laws. They also have to make sure that whatever they are inspecting is safe.

In the world of business, inspection is the critical appraisal of materials, items, or systems involving examination, testing, and gauging. Inspectors take measurements and make comparisons. Inspections are formal evaluations or organized examination exercises.

The inspectors determine whether the item or material is in proper condition and of the right quantity. They also determine whether it conforms to the company's, industry's, local, or national rules and regulations.

The frequency of inspections will depend on the nature of the work. Inspections may be less often, for example, if the work environment is low risk like in a predominantly administrative office. But if there are certain areas of a workplace or specific activities that are high risk or changing rapidly, more frequent inspection may be justified, for example on a construction project.

☞ **Good practice**

- ✓ Plan a programme of inspections - you and your representatives can plan a programme of inspections in advance...
- ✓ Agree the number of representatives - agree the number of representatives taking part in any one formal inspection...
- ✓ Co-ordinate inspections - plan inspections if there is more than one representative, because they can then co-ordinate their inspections to avoid unnecessary duplication.
- ✓ Inspect together - it will help your relationship with the representatives if you inspect together...
- ✓ Consult specialists - if there is a safety officer or specialist advisers...

- ✓ Break down tasks - for larger workplaces, it may not be practical to conduct a formal inspection of the entire workplace in a single session...

☞ **Following-up after an inspection**

After an inspection:

- ✓ Explain the reasons for any follow-up action you decide to take to your representatives.
- ✓ Let the representative who notified you of the inspection have the opportunity to inspect again so they can check if the issues raised got appropriate attention, and record their views.
- ✓ Share the follow-up action taken throughout the workplace and other relevant parts of the business, including the health and safety committee where there is one.

There may be times when action may not be appropriate, you may not be able to act within a reasonable period of time, or when the action you take is not acceptable to your safety representatives. It is advisable to explain the reasons for the action you have decided to take in writing to your representatives.

Self-Check 3	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Define inspection. (2pts)
2. What are the good practices during inspection? (4pts).

Note: Satisfactory rating - 6 points

Unsatisfactory - below 6 points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Information Sheet-4

Cleaning work place

To some people, the word “housekeeping” calls to mind cleaning floors and surfaces, removing dust, and organizing clutter. But in a work setting, it means much more. Housekeeping is crucial to safe workplaces. It also can help an employer avoid potential fines for non-compliance.

The practice extends from traditional offices to industrial workplaces, including factories, warehouses and manufacturing plants that present special challenges such as hazardous materials, combustible dust and other flammables. Experts agree that all workplace safety programs should incorporate housekeeping, and every worker should play a part.

Everyone thinks they know what housekeeping is, but it's one of the easiest things to overlook, especially when work gets busy. The Shine stage of 5S focuses on cleaning up the work area, which means sweeping, mopping, dusting, wiping down surfaces, putting tools and materials away, etc.

In addition to basic cleaning, Shine also involves performing regular maintenance on equipment and machinery. Planning for maintenance ahead of time means businesses can catch problems and prevent breakdowns. That means less wasted time and no loss of profits related to work stoppages.

Cleaning the workplace might not sound exciting, but it's important. And it shouldn't just be left up to the janitorial staff. In 5S, everyone takes responsibility for cleaning up their workspace, ideally on a daily basis. Doing so makes people take ownership of the space, which in the long run means people will be more invested in their work and in the company.

The third S is to thoroughly clean the work area. Daily follow-up cleaning is absolutely necessary to maintain a clutter-free workplace and a desirable environment. **SHINE** speaks for itself. Everyone enjoys working in a clean environment which raises morale and increases productivity.

The key word in this description is keeping the workplace and everything in it clean and in good functional condition. **This is achieved through the combination of the cleaning function and defect detection.**

- ✓ Higher quality work and products.
- ✓ More comfortable and safer work environment
- ✓ Greater visibility and reduced retrieval time
- ✓ Lower maintenance cost
- ✓ Creates positive impression on during customer inspections

Self-Check 4	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write the use of cleaning work place (2pts)

Note: Satisfactory rating - 2 points

Unsatisfactory - below 2 points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Information Sheet-5

Identifying situations and taking actions

When a new employee joins a team that uses 5S, one of the best things to do is let current employees carry out the new employee's training. Teaching someone else how to accomplish a task requires one to evaluate his or her own knowledge, and workers can easily spot gaps that they may have questions about. Doing this also helps reinforce the ideas they are teaching, especially if workers have grown sloppy over time or deviated from the original expectations.

Measure, don't just guess. Sustaining is about making adequate progress. The ultimate goal of 5S is to increase efficiency. The actual organizational steps taken on the way are components of this goal and shouldn't overshadow the larger endeavor. It is imperative to keep accurate tabs on whether or not the 5S effort has helped workers cut down on production times, accident rates, missing equipment costs, etc. over time. Use actual numbers and do not overlook the facts, even if they are not as impressive as hoped for.

Properly sustaining 5S is about carrying out the task or concept time and time again until it becomes second nature. This can be a frustrating phase for both managers and employees, so it is important to ensure communication is open, factual, and constructive, while being free of accusations.

Each employee in the manufacturing facility is taught which 5S tasks to perform as part of his or her daily work, and this makes the system sustainable over the long term.

Visual Management

Visual management is a set of techniques that make operation standards visible so that people can easily follow them. These techniques expose waste so that it can be prevented and eliminated. Visual management provides information readily, thereby reducing “information deficits.”

An example of visual management is visual control. Visual controls include colour coding, floor markings, signage, indicator cards and labels. Care must be taken that

visual controls or indicators are standardized in the organization to avoid confusion. Combined with standard work, it becomes a tool where all see, all know and all act with a common purpose.

Visual Management allows you to:

- ✓ See the work in progress
- ✓ Recognize work-flow stoppers
- ✓ Adhere to standard work
- ✓ Assess inventory levels
- ✓ Identify defects
- ✓ See deviations from the standard
- ✓ Enable interventions

Identify Common Misconceptions

As with many other Lean strategies, the practice and implementation of 5S also features some common misconceptions. In other words, employees and staff often confuse or misconstrue certain information and tactics related to 5S. This is very common, but can have a direct negative impact on 5S efforts and results. The below statements are some common misconceptions associated with 5S. Because there are many misconceptions out there about the processes and tasks involved in 5S, it is important to not lose track of the basics.

☞ **Misconception:** Areas involved in 5S should be set up in ways those involved in the 5S process believe most suitable.

Truth: Work areas should ALWAYS be set up and organized for those who will be actually using the areas.

☞ **Misconception: 5S just means "throwing out expensive stuff" without rhyme or reason.**

Truth: When it comes to 5S, there is often a big understanding gap of what's actually worth keeping. Items and equipment should not be kept simply because they have value to the outside world. Things should only be kept if they are of value to the organization.

☞ **Misconception: 5S is "just a tool."**

Truth: 5S is a tool, but it is not "just a tool." It is a comprehensive framework that emphasizes the use of a specific mindset and tools to create efficiency and value. Everything from organization to cleanliness is looked at. In addition, it also emphasizes the practice of being proactive versus reactive.

☞ **Misconception: 5S is "easy."**

Truth: Even though the practice of 5S is usually one of the most basic and one of the first Lean tools attempted by many businesses, that does not mean it is "easy." There are many steps that need to be taken before 5S is even considered. In addition, employee involvement is key. Employees need to "buy-in" and be willing to learn and participate as well.

☞ **Misconception: Put up some safety signs and floor tape and you have implemented 5S.**

Truth: 5S is so much more than applying some floor tape or adding some labeling to shelving units. "At its most fundamental definition, we care about 5s because it allows for the abnormal to be detected. An area that has been 5s'd and is utilizing additional Visual Control techniques, "speaks" to the individual/manager/observer of the workspace. Do we have what we need? Is something amiss? Is that gauge operating in a desired region? Does an operator/technician need supervisory support? Has the correct reagent been placed at the correct location of the synthesizer? If you need to verbalize these questions, you have opportunities for Visual Control, of which 5S is an element."

☞ **Misconception: 5s is just a Japanese way of beautifying things.**

Truth: 5S is not just a beautifying technique to make work areas simply look better. Instead, it is more of a problem-solving approach, which utilizes the help of various techniques and is a practical way to assist in increasing value.

☞ **Misconception: 5S is all about cleaning;** it is basically housekeeping on steroids.

Truth: Cleaning is a very minuscule component of 5S. The practice of 5S is multifaceted and interweaves a mindset with a practical process to assist in creating both culture and discipline.

Self-Check 5	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Identify Common Misconceptions of 5S(5pts)

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Information Sheet-6	Recommending Improvements.
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Improvement is not a one-time event. There is no shortage of techniques, tools and software that present themselves as the solution to all of your problems, but real-world business environments are never that simple. Lasting change happens in increments, over time, each new improvement building on the one before. Today we'll look at how applying the Japanese concept of Kaizen brings continuous improvement to your business practices, increases productivity and improves team morale.

Check

Evaluating the results and data collected during the do phase. Is the new output an improvement from the baseline? Were the outcomes the same as expected? Did they Do phase cause any unintended changes?

Act

Did the check phase show that the implemented plan has been successful? Then the company acts to make this the new standard. If no improvement is observed, no change is made. Unsuccessful, unexpected and unclear results can lead to multiple iterations of the PDCA cycle.

Continuous improvement will work if you do three things and stick to them. First, begin with a goal for 1 percent improvement, whatever that might mean in the process you're trying to improve. Second, decide how often you're going to work toward that goal and stick with the plan, whatever it is. You can keep your grand goal, if you have one, in the back of your mind, but don't focus on it. Focus on achieving that 1 percent improvement. Once you've solidly accomplished that, pick your next 1 percent goal and keep going. Keep repeating this process, and you'll soon find you've accomplished major changes, whether you started out to or not.

☞ **Here are some areas that may be amenable to recommend continuous improvement:**

- ✓ Improving work flow by placing materials in easy reach, or adding a ramp to move outputs
- ✓ Improving safety by placing guards or two-hand switches on presses
- ✓ Improving quality with poka-yoke ("foolproof") methods, such as jigs to ensure parts can only be placed correctly before assembly
- ✓ Designating a five-minute cleanup or maintenance step as the end of each shift at each machine
- ✓ Adding a customer feedback opportunity to each web page, sales contract or telephone script

Self-Check 6	Written Test
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Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. How we recommend improvement in kaizen? (5pts)

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Information Sheet-7

Following checklists and reporting.

Performing review and report depending on checklist

1. All 5S auditors gather at the meeting room ½ hour before audit
2. Briefing by 5S audit chairman: -
 - ✓ Activities of the day
 - ✓ Highlight any new criteria to be checked
 - ✓ Action date on sticker (2 weeks from audit date)
 - ✓ Time to report back
3. Wearing 5S auditor tag
4. Every auditor is only allowed to use up to 3 stickers at each audit to each 5S zone. It is purposely not put burden to 5S team to make improvement in very drastic manner.
5. Previous audit summary report will be distributed to the auditors' team as a reference in order to avoid in consistency auditing.

☞ During Review

1. Bring all audit materials e.g. checklist, stickers, file holder & audit summary report
2. Get the KPT leader or facilitator to accompany auditor
3. Good public Relation
4. Check outstanding matter from the previous audit summary report
5. Proper issue of stickers & justified
6. Propose idea for improvement and justified.
7. Close matter when action has been taken. Remove sticker
8. Issue new sticker when action is not fully satisfied (old sticker still remain) and also for new matter noted
9. Take photo as an example in case of the 5S team has shown very creative idea to make the 5S initiative significantly effective, safe work place, cost saving
10. Only use maximum 3 stickers of each type for each working area / zone

11. Listen to the feedback given by workers
12. Provide positive suggestion for improvement if stickers is not appropriate
13. Prepare audit report of each working area on the Audit summary
14. Document must be signed by auditor & team leader
15. Audit to the next area
16. You may take 10 – 15 minutes for one zone.

Table. 2a. Format of 5Scheck list

Location		Check Item	Check Description	Year and month:					
				1	2	3	4	5	T
Outdoors (overall)	Are storage areas clearly determined?	Areas for paring, pallets, temporary materials storage, delivered goods reception, trash processing, and boxes	0	2	0	2	0	4	
	Have paths been clearly defined?	Have white and yellow lines been laid down?	0	2	0	2	0	4	
		Are traffic signs used?	0	3	0	3	0	6	
		Are there any exposed wires or pipes?	1	3	1	3	1	9	
	Are outdoor areas kept clean?	Are ashtrays, trash cans, gardens, entrance areas, windows, and paths kept clean?	1	3	1	3	1	9	
	Are there any unneeded items?	Are signboards, copy machines, and pathways arranged properly?	1	1	1	1	1	5	
Clerical (overall)	Have temp storage areas been clearly defined?	Have fire-extinguishing equipment and emergency exits been established?	2	3	2				
	Are office areas kept clean?	Are the walls dirty?							

Scoring: 3 = Very good
2 = Good
1 = OK
0 = Not good

Table.2b check list for reviewing and reporting format.

Develop 5S Evaluation Criteria & Guidelines

1. Set up audit checklist criteria according to area of 5S team

ASPECTS	N O	AUDITED ASPECT	SCORE					REMARKS
			5	4	3	2	1	
FLOOR	1	NO DUST ON THE FLOOR						
	2							
	3							
EQUIPMENTS ARRANGEMENT	4	TIDY AND WELL ARRANGED						
	5							
	6							
EQUIPMENTS AND TOOLS	7	IN GOOD CONDITION AND BEING USED						
	8							
	9							

Self-Check 7

Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write down at least five focal points 5S auditors should examine (5pts)
2. What are the activities performed during preparation of audit and during audit (4 points)

Note: Satisfactory rating - 9 points

Unsatisfactory - below 9points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Information Sheet-8

Avoiding Problems by sustaining activities.

☞ **Problems Avoided by Implementing Sustain**

Here are some of the things that happen in a company when Commitment to the five pillars is not sustained.

1. Unneeded items begin piling up as soon as sorting is completed
2. No matter how well Set in Order is planned and implemented, tools and jigs do not get returned to their designated place after use.
3. No matter how dirty equipment becomes, little or nothing is done to clean it.
4. Terms are left protruding into walkways, causing people to trip and get injured.
5. Dirty machines start to malfunction and produce defective goods.
6. Dark, dirty, disorganized workplaces lower workers' morale.

So, by sustaining the above problems encountered will be avoided. These 5S related problems and others are likely to occur in any factory or office that lacks a commitment to sustain the five pillar gains over time.

☞ **Why Sustain Is Important**

Usually you commit yourself to sustain a particular course of action because the rewards for keeping to the course of action are greater than the rewards for departing from it. Viewed another way, the consequences of not keeping to the course of action may be greater than the consequences of keeping to it. For example, suppose you want to start an exercise program –say you decide you want to work out at a gym three times a week. You probably have difficulty sustaining this course of action. This is because forces in your life, such as limits on your time and energy as well as the power of inertia, challenge this plan. However, if the rewards of sticking to your exercise program (for example, feeling and looking better) are greater than the rewards of not sticking to it (for example, having more time for other things that you need to do), your commitment will increase and you will probably sustain this program over time.

The same principle applies in your 5S implementation. Without your commitment to sustain the benefits of the 5S activities, implementation of the first four pillars quickly falls apart. However, if the rewards of implementing the first four pillars are greater for you than the rewards of not implementing them, sustaining them through the fifth pillar should be something you take to naturally.

So, what are the rewards for you of implementing the first four pillars? You've probably discovered them for yourself at this point. Implementation of the first four pillars should make your workplace more pleasant to work in, your job more satisfying and communication with your coworkers easier. It should also make your work more efficient and of better quality, which will hopefully lead to reward of your efforts by your company. It's true that the five pillars take time to implement, but this investment of time will bring a great return, for both you and your company.

Self-Check 8

Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are things that happen in a company when Commitment to the five pillars is not sustained? (5pts)

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Operation Sheet 1	Cleaning work place
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To successfully implement the cleaning as a daily value-adding activity, the following steps must be practiced.

Step 1: Delegate Cleaning Assignments.

Step 2: Determine what to be cleaned.

Step 3: Determine the Methods to be used.

Step 4: Prepare the Cleaning Tools and Materials.

Step 5: Implement Cleanliness.

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Operation Sheet 2	Sustaining
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Step 1 - Maintain 5-S awareness

- ✓ We need to be continually motivated to improve the company and promote the 5-S program.
- ✓ Distribute a 5-S newsletter, 5-S posters, 5-S awards, 5-S motto, 5-S Day — always continuing to inspire fresh, new enthusiasm
- ✓ Develop a trigger for implementing Improvement activities

Step 2 - Create opportunities to improve the 5-S

Group tools to use are:

- ✓ 5-S observation tours
- ✓ Continuing Kaizen workshops
- ✓ Team and Management Audits using Workplace Organization Tool

Step 3 - Create motivation for 5-S

- ✓ Motivation at the workshop level
- ✓ To what level has our company progressed in the 5-S program? What is our goal?
- ✓ Promote the idea of how much more the 5-S level of the company as a whole need to improve to pass our competitors
- ✓ Take a video/pictures of our area every 6 months and compare to see improvements.

LAP Test	Practical Demonstration
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Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 1hr.

Task 1. Clean work place/ equipments

Task 2. Sustaining 3S

References

1. https://www.creativesafetysupply.com/content/education_research/5S/index.html.
2. https://www.jica.go.jp/.../case_materials_tanzania.
3. <https://in.kaizen.com/blog/post/2013/12/05/standardization.html>.



Trainers prepared the TTLM with their full address

No	Name of trainer d	TVET Represent	Occupation	E-mail	
1	Addisu Desta	W/Sodo ATVET College	Animal and range science(B.sc)	0913270120	addiserahe12701@gmail
2	Ayele Mengesha	Holeta Poly tech. College	An. Nutr.(MSc)	0911802467	ayelemengesha@ymail.com
3	Sead Taha	Agarfa ATVET College	Animal science(Bsc)	0920356174	tahasead@gmail.com
4	Sisay Fekadu	Gewane ATVET College	An. Production (MSc)	0913115358	sisrobel09@gmail.com
5	Tesfahun Kebede	Alage ATVET College	Animal breeding & Genetic (MSc)	0910618584	praiselord21@gmail.com
6	Ybrah Weliyergs	Michew ATVET College	Livestock production & pastoral Dev't (MSc)	0910569723	ybrahababa@gmail.com
7	Sintayehu Belina	Assossa ATVET College	Animal Science Bsc	0953307311	Sintayehubelina@yahoo.com
8	Tesfu Abtie	Burie Poly TVET college	Animal Science	0910162233	tawe2111@gmail.com
9	Tamirat Chanyalew	Bako ATVET College	Animal and Range science(Bsc.)	0942922400/ 0917819403	tamiratgeletac@yahoo.com

