Logistics and Distribution Curriculum



Background

The Logistics and Distribution Curriculum was conceived to provide adult literacy instructors and learners an introduction to employment in the fast-growing logistics and warehouse sector.

Employers responsible for hiring in the logistics sector were consulted to identify the core content useful for all new employees. The material has been designed to be straightforward and provide material that can be used for a wide-range of settings ranging from 1-to-1 tutoring to small classes. The supplemental activities provided in each unit are intended to account for multiple learning styles and focus on kinesthetic and 'hands-on' activities. Each unit can be delivered a 'standalone' workshop, but the overall content was originally structured to allow for a workshop of approximately 12 hours:

Session 1: Units 1 & 2 Session 2: Unit 3 Session 3: Units 4 & 5 Session 4: Units 6 & 7

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What is Logistics?

This is the act of getting, producing and distributing material and products to the proper place in proper quantities.

What is a Supply Chain?

This refers to the whole process. If a company makes a product from parts purchased from suppliers and then sells the product to customers, the process is called a 'supply chain'. A supply chain is a network of places that buy materials, use them to make parts for products or finished products, then distribute what they produce to other companies to sell to customers.

Logistics management?

This is the part of the supply chain that plans, implements and controls the efficient movement and storage of goods and services between where the goods came from and where they are consumed. This is all done in order to meet customer needs or demands.

What is the Difference?

Transforming raw materials into products and getting it to the customer is the supply chain. The movement of materials in the whole supply chain is logistics.

History

The origin of logistics dates from the Greek and Roman empires when military officers named 'Logistikas' supplied and distributed resources for the army. This meant soldiers could be provided equipment quickly, fed better, and be able to move more efficiently. It also involved damaging the enemy's supplies while safeguarding their own supplies. This was sometimes the difference between victory and defeat.



3 Phases of Modern Logistics

Phase 1:

In the earliest phase, logistics was mainly concerned with departments



within an organization, such as Purchasing, Production or Sales. The goal was to better run these departments. This meant that the impacts on other departments was not often considered. For example, the Purchasing Department might order huge amounts of an item in order to find volume discounts and save money. This might create large amounts of stock that would cost money to maintain and cause problems in the warehouses. The warehouse and shipping departments would then suffer increased costs for storing the items and keeping track of them.

Phase 2:

This phase of logistics focused more on linking production with the marketing or distribution parts of business. Companies tried to ensure their departments were working together and to work with other companies they did business with in an effort to improve efficiency. This approach was still based on improving the links between departments. It also meant that companies would focus on improving the links between their company and the next company in the supply chain. For example, the Purchasing Department might order a large amount of an item for cost savings, but it would contact shippers to make sure that items were shipped in a schedule that the warehouse department would be able to handle. The shipping company would then need to work with its suppliers to make sure the items were available at the schedule needed by the Purchasing Department.

Phase 3:

The third phase is what we call Supply Chain Management. In this case all parts of the whole logistical chain should work as one team with benefits and problems shared with the partners in this chain. This phase saw the role of logistics as one of the most important to businesses. It was clear that logistics could give an added value to an organization and help in the products' success and a company's profitability.

Logistics was once the last thing considered by many companies, but now it is central to many industries. This has led to well organized supply chains equipped to deal with faster-changing product life-cycles. The customer is better able to decide what, when and where a product will be made and delivered. Flexibility, accuracy, and speed are the key ideas in thinking about logistics.

Why is Logistics Important?



Today, efficient logistics and transportation systems are important for the overall economy. It is not enough to offer a product that meets customers' requirements, but the way it is delivered is also very important. Delivering goods with speed and precision can help businesses operate more efficiently, reduce costs and gain new customers.

Logistics has now become a critical part of every business. Raw materials and finished products have always needed to be moved. As people began to move from rural to urban areas distances between where things were made and where they were consumed increased. Over time the goal became to increase the speed of travel of the goods over the increased distance.

Seven **R**'s of Logistics:

Getting the **R**ight **Product**

in the Right Quantity,

in the **R**ight **Condition**

to the **R**ight **Place**

at the Right Time

to the **R**ight **Customer**

Companies used to develop a product line, plan where they would ship it, create the marketing and deliver the finished product to the sellers themselves. It is different now; logistics has become much more complex. As a result, global logistics operations have increased in size and number. Logistics Workers need to understand that they are in an industry that is vital for the success of their employer and its customers. Its important because of how big a role logistics plays. Remember the Seven R's of Logistics to help you understand the importance of logistics.

Inbound and Outbound Logistics

Inbound Logistics

These are the activities of receiving, storing and distributing raw materials for use in

production. It is very important for manufacturing businesses. Inbound logistics covers all activities required to bring goods from the start location to a warehouse or production plant. This will include transportation, inventory, warehousing and material handling.

Material Handling:

Short distance movement of goods in a building such as a warehouse, often using special equipment like forklifts and pallet drivers.

Receiving and storing raw materials is an important responsibility for manufacturers. Big companies may have separate facilities for storing raw materials. Smaller companies often bring in materials direct to a receiving area within the manufacturing plant.

It is important that this process be well organized because it directly affects efficiency in the plant. Delays in moving materials to the right location can delay or stop production. This costs the company money and may lose it business.

Many large companies will use 'Just in Time' shipping. This means that their raw materials will be scheduled to arrive 'just in time' for them to be used. This saves the companies money but requires excellent logistics.

Outbound Logistics

This is the processes related to the storage and movement of the final product from the end of the production line to the end user (the customer). Outbound logistics focusses on distribution. Shipping, freight and warehousing all fall under this category. This also includes communication with customers and the companies that carry the items.

Outbound logistics helps to increase value by reducing transit time, getting rid of unnecessary stock and increasing customer satisfaction. Benefits to customers include the following:

It costs companies money to store things. Items that are not moving to customers lead to lower profits.

- Quality control before shipping (making sure that the merchandise purchased is in the right condition and quantity the customer wanted);
- Making sure that orders are sent and received correctly
- Doing the paperwork to ensure that orders can go through different countries

'Paperwork' may include export documentation, letters of credit, providing directions to transport operations, and pre-shipment inspection, amongst other things.

Reverse Logistics

Customers sometimes wish to return items that they bought. The return of goods is called reverse logistics. The goal is to take the product back to the supplier or to regain value from the item. This can be done by refurbishing or repackaging the product or reselling it as surplus. Sometimes items are recycled to regain raw materials. Any materials or items that have not been recovered must be properly disposed. In all these cases the items must be transported correctly and moved to their final point. Reverse logistics plans this process.

Inbound, Outbound, and Reverse logistics have many of the same activities. They all require transportation, inventory, warehousing, and handling of materials.

New Technology

Customers now demand online cargo tracking. This means that customers want to know where their items are at all times through transportation. This means that each worker has a role in this process. Most workers will use scanners and computer screens to help the company and customer track the orders.

Overall Supply Chain Logistics

There are many areas within logistics that work together to make the whole supply chain: Supply Chain



1) Transportation

Many modes of transportation help move goods through supply chains by air, rail, road, water or pipeline. Picking the most efficient mode improves the value created for customers

2) Warehousing

When inventory is not moving between locations, it may have to spend some time in a warehouse. Warehousing is the activities related to receiving, storing and shipping materials to and from where they are produced and where the customer resides

3) Third-Party Logistics

Third-party logistics providers manage one or more logistics services for another company. Many of the logistics jobs in your region are likely with this type of company.

4) Reverse Logistics

A way to handle the return, reuse, recycling and disposal of products that make the reverse journey from the customer to the supplier.

Logistics Cost and Service Value

The point of logistics is to provide customer satisfaction at the lowest cost. For people working in logistics there is always a balance between the cost of running the company and the level of customers service.

Service maximization and cost minimization are two key ideas in grasping how logistics companies understand value. This means that companies want to offer the fastest and most accurate service at the lowest cost. Maximization means to make something as great or large as possible.

Minimization means to make something as small as possible.

This often means that workers' pay is related to incentives based on speed and accuracy. Workers who maximize service speed and minimize costs by being efficient are often given rewards.

Logistics Goals

The overall goal:

- Respond quickly to changes in customers needs and orders
- Keep changes to service at a minimum. Customers want to know when their items will arrive
- Keep only the inventory you need to reduce costs. Do not store 'extra'
- Move as much product as profitable at one time by grouping shipments
- 5) Keep quality high and always try to make improvements
- 6) The reverse logistics supply chain must always be considered because things will be returned



Learner Activity #1: Comprehension

Write an answer to the questions below. Use complete sentences:

- 1) In your own words, why is logistics important?
- 2) In teams or individually, complete an online search of a local logistics company. Using your own words describe what the logistics company does?
- 3) What happens when you make an online order? What are the steps to get the items to your door?
- 4) What are the 7 R's of logistics?
- 5) Why do you think it is important to know the Seven R's?
- 6) Using your own words, define what is a product life-cycle. Why is it important?

Unit 2 Logistics and Warehouse Employment



Warehouse Logistics

Logistics is the control and tracking of materials and information between the manufacturer and the final consumer. In a warehouse, materials are received, stored, and then shipped out to another location. The tracking of what has been received, where it came from, and where it is going is critical.

Warehouse employment is growing around the world, as the expansion of a global economy has created a need to manage the flow of materials around the world. A wellrun warehouse can increase a company's efficiency, maximize profits, and increase its competitiveness.

Warehouse employment offers a range of positions, from pallet driver to manager. The education and skills required are as varied as the jobs themselves. To get started in warehouse employment, look for an entry-level position in a warehouse.



General Work Conditions

Work in a logistics warehouse is often fast-paced and time sensitive. Many jobs require physical movement, lifting, and are generally labour intensive. Other jobs in the warehouse may be less physical but also are fast paced. Many warehouses require shiftwork and it is often expected that workers learn multiple jobs. This means the work can be varied, and it often gives workers many opportunities to learn. In all the jobs high energy and a strong attention to detail are required. Decision-making and strong communication skills are required since every job relies on others to be successful.

Each warehouse and company will have its own specific ways of operating. Different companies may call each job or position by a different name, but there are generally five stages to the movement of goods in a warehouse. Each stage will have different jobs available. Many of these jobs will be entry level positions.

Fundamental Principle

All the jobs in logistics and distribution are completed under the principle of First In/First Out. This means that all goods coming are processed in the order in which they arrive.

FIFO means that what comes in first will be handled first, what comes in next waits until the first one is finished.

The use of expiry dates is very common in the

items being shipped. Goods such as milk and other groceries, cosmetics, and car parts are all examples of items that can have expiry dates.

When processing orders the expiry dates must be tracked with movement of the goods throughout the warehouse. Order selectors must rotate out the oldest materials first. This also means that boxes and bins must be rotated from the top shelves to the ground so the selectors can reach them.

The principle of FIFO is also followed for goods without an expiry date. In these cases, the goods that arrive at the warehouse first will be the first to be used to fill orders that will be shipped out.

FIFO is also one of the core concerns of quality control. There are many controls in place to make sure the FIFO standard is kept. Many workplaces will have training and policies related to FIFO and it is always expected to be followed.



FIFO is so important that many HR Managers ask about it during job interviews. Knowing about FIFO and what it means can help you.

Warehouse Layout

When goods are shipped they must be stored several times before they get to the final customer. Logistics jobs are often the transportation and storage of items to and from warehouses.

The basic idea of a warehouse is to have goods received at one end of the building, stored in the middle, and then shipped to its next destination at the other end. Of course, this can get complicated.

Most warehouses will have different temperature areas ranging from a freezer to



room temperature. This will mean that workers may have to wear warm clothing to keep warm no matter what time of year it is outside. Each warehouse will have shelves, which are called racking, which will reach to the top of the building. This racking will be organized in many aisles and shelves for the storage and selection of items. When people imagine large warehouses they often think of the aisles and racking systems.

Watch this video to see how this may look in a warehouse.

https://youtu.be/w-xoT2riUV0

Stages of Warehouse Logistics

Stage 1: Product In

The products or goods arrive at the warehouse to be organized and re-shipped to other customers. The first step is to unload. This includes:

- Unloading from the trucks or shipping containers
- Checking the orders
- Making sure material and items on pallets match the order
- Creating tracking and/or barcode stickers for the pallet

Stage 2: Product Placed in Correct Warehouse Location

Pallet Drivers (in some companies they may call them Pallet Runners) use specialized equipment to move pallets of goods throughout the warehouse. These pallets are then placed into the racking (shelving) systems by special equipment called Reach Trucks. This stage includes the following tasks:



- Ensure pallets are ready for movement
- Check labels to find the locations of goods in the warehouse
- Move items to specific areas of the warehouse
- Ensure items are in the correct temperature-controlled section of the warehouse
- Prepare for the Reach Trucks to place goods into the racking

Stage 3: Order Selection

This is when orders are filled for customers. This job is usually done manually and involves workers putting together the orders on a pallet following the list created by the customer's order. *This job requires high attention to detail*:

- Selectors must match barcodes on boxes with the order number
- Selectors need to double-check the information on the box matches information on the order
- Selectors must pick the correct boxes and place them on the order pallet
- Sometimes a selector will need to move a full pallet from the racks to be added to an order
- Each box will require the addition of new stickers/barcodes to ensure proper tracking of goods
- Pallets will need to be stacked in the correct manner to ensure safety and ease of scanning

• Selectors must prepare order pallets by wrapping them and setting them for pallet runners to take to the loader

Stage 4: Loading

Using specialized equipment, Loaders move orders onto trucks for distribution. Loaders:

• Ensure that the correct pallets are matched with the correct order



- Make sure that the correct pallets are loaded onto the proper truck trailers
- Load pallets correctly and safely onto trucks

Stage 5: Distribution

Once the orders are loaded on the truck trailers, they follow a shipping route in delivering goods to customers. This could be done by another distribution company delivering the goods to the end customer. Distribution requires the following tasks:

- Double-check items are loaded correctly
- Match order numbers with items lists
- Ensure that goods are delivered safely and effectively
- Many of the jobs require AZ licensing (trailer truck license)



Additional Jobs

In all stages of the warehousing there are specialized jobs, such as unloading, pallet driving, selecting, and loading. Other jobs are found throughout the various stages.

Quality Control/Quality Assurance

These jobs are to help the company make sure that the correct products are leaving the warehouse for the correct destination. They also:

- Check for damaged goods or boxes
- Make sure best- before dates are not outdated
- Ensure accuracy of orders: the right order must go to the right customer
- Decrease returns from customers due to mistakes
- Find problems and solutions quickly

Performing quality control before shipping a product helps to reduce costs and losses and improves speed and accuracy of delivery to customers.

Clerical Positions

These are the many jobs throughout the different stages of warehouse logistics. These jobs are especially important for any international shipments or movement of hazardous goods. This might include positions that:

- Print orders
- Allocate trailers to loading docks and ensure that the correct pallets are assigned to the proper trailers
- Make sure the correct paperwork is completed for orders

Quality control is important for all jobs in a warehouse. Pallet Drivers and Selectors are also expected to check to make sure they are accurate and to identify any mislabeled item. Quality is everyone's job.

- Perform inventory control to make sure goods are stored in the correct location (aisle, row, shelf, etc.)
- Work with suppliers to make sure a good number of items are available without being understocked or overstocked

Management Positions

These are responsible for the operation of the facility, maximizing space usage and staff management. There are several layers of management opportunities, ranging from floor supervisors to multi-location managers. A manager needs to provide:

- Leadership
- Clear direction
- Support staff in their roles.
- Many managers start in the position of selector or pallet driver.

Important Skills for All Positions

There are several key skills needed for most positions in a logistics and distribution company. The most important is communication. These jobs require working with diverse people with different backgrounds, jobs and skills. Working in this



type of job requires many speaking, listening, and problem-solving skills. In a fast-paced workplace, workers need to communicate their needs quickly and clearly.

All workers in the logistics sector need to be comfortable learning. Cross-training, where a worker is trained in more than one job, is common to these types of jobs. That means if a worker is hired as a selector, she or he may also receive training as a pallet driver. Technology related to these jobs is often upgraded and workers must adapt effectively to these changes. Learning about bar codes, scanners and hand scanners, and using computer screens may be part of any position.

Overall, employers want to hire people with high energy who have skills in teamwork, communication, and trainability. Being comfortable reading numbers, date sequences and number sequences accurately are additional skills that are essential daily.

Career Growth

Logistics and distribution are areas that see significant career growth. The number of logistics and distribution jobs available is growing throughout Canada. The increase in the number of regional distribution centres means that many jobs are available in entry level positions.

It may be useful to have certificates, such as WHIMIS or a forklift license, before being hired, but most employers will provide their own training. This is to make sure that all their employees are at the same standard and learn in their warehouse.

These positions can lead to many opportunities. It is common in the industry to promote from within. Some selectors and pallet drivers become supervisors. Some people are offered training to become certified AZ truck drivers and become part of the distribution team.

Incentive Pay

Many companies will hire people for a position and pay them a competitive rate per hour. Since moving boxes and bins quickly is very important, most companies offer incentives to workers who receive, move, select, or load quickly. This is very common in the industry. The incentives will be added to your base pay. The company tracks the movement of

goods during all steps of the warehouse process. From this they create measurements (called metrics) to track your progress. For example, it might be the number of boxes you have selected and placed on a pallet or how many cases per hour were loaded. Each metric will be different based on the kind of job that you do.

'Metrics' means the measurement used to track efficiency, performance, and progress. For example, the number of tasks done every hour is a metric.

www.businessdictionary.com/definition/metrics.html

The purpose of incentives is to base a worker's wage on how well the work is done. The pay is not based on experience or education. Incentive and base pay will vary from company to company. It will also vary depending on whether workers at a company are unionized.

Learner Activity #1: Perceptions vs Reality

Make a list of what people think it is like to work in a distribution warehouse. Think about images that you may have seen in TV shows or movies? What kinds of workers do they show? What are the jobs like?

Next, make a list of what it really like to work in a distribution warehouse. Are the two lists different or similar? Are there any skills on the second list that were unexpected or surprising?

Learner Activity #2: Videos

Watch one or all the following videos. Give a presentation to the group or another student on the types of jobs displayed in the video. What skills did the employees need?

Warehouse <u>https://youtu.be/PoBw6jH91-I</u> Selector <u>https://youtu.be/pwwUclAWyK8</u> Packers: <u>https://youtu.be/Cuf9JdfYiYY</u> Transportation job <u>https://youtu.be/c8Y717E3fqE</u> Equipment: <u>https://youtu.be/9lKPneNqK6s</u>

Learner Activity #3: Comprehension

Please answer these questions in your own words:

- 1) What is the common perception of warehouse work? Do you believe it is accurate?
- 2) What does FIFO mean? Why is this important for jobs in logistics?
- 3) Why do you think diversity and communication are important skills for a logistics job?

Communication in the Logistics Sector

Unit 3



Why Communication is Important?

Communication skills are essential when working in any position in logistics. Every job position in a warehouse relies on other people to make it successful. To make sure that goods continue to move from one stage of the process to another each person needs to work well with everyone with whom they come in contact. This means that clearly communicating with others includes stating what is needed, identifying problems that come up, problem-solving with others, and offering solutions.

Strong communication skills at work help us to:

- Know what we need to do and how we need to do it
- Better understand our coworkers and their roles
- Seamlessly work together
- Work out differences and build trust
- Get work done more effectively and safely
- Create a positive workplace

Good communication skills require a high level of self-awareness. By understanding how you communicate you can focus on becoming a better communicator. Self-awareness is being aware of your personality and characteristics as an individual. It lets you evaluate yourself in relation to others.

There are many different forms of communication, including verbal, written, non-verbal or combinations of these. The important thing to remember is that communication is not just one-way. Speaking to someone is not communication. It is only communication when they respond in some fashion and indicate that they understand.

Communication requires someone to send the message and someone who is receiving the message. It is a process that goes two ways: you send the message using your voice and non-verbal cues. The other person listens, interpreting and personalizing the message, and gives feedback verbally and nonverbally. Meanwhile, you are listening to the verbal feedback and attending to the nonverbal cues in order to gauge how your message was received and to understand the other person's response.

Communication Must Be Tailored to its Intended Audience

Things to think about:

- Am I speaking or writing to one person or to more people?
- What are their job titles or areas of responsibility?
- What do they already know about the specific situation?
- Why do they need this information?
- What do I want them to do as a result of receiving this information?
- What factors might influence their response?

The Flow of Communication at Work

In a workplace, communication may depend on the positions of those who are communicating. For example, if you are a selector, you will need to consider whether you are speaking to a supervisor, a pallet driver, another selector of the distribution driver. Both how you speak and what you say will depend on who you are speaking to.

Upward Communication: This means that you are communicating with your supervisor or boss. Often this means speaking a bit more formally and with more focus on work. You want to speak in a positive, confident manner.

Lateral Communication: This means speaking with your coworkers who are in the same position or similar jobs as you. You can often be less formal and talk more about general topics related to your life. You want to remain positive and friendly.

Downward Communication: Often you will need to speak to other colleagues who may report to you or you need direction from you. You always want to speak in a clear and confident voice. It is important to be polite and be clear about what is needed in the situation. You should avoid speaking too informally. Outward: This direction of communication is when you are speaking to the public or customers. You should always strive for friendly professional communication. It is important not to be too informal. You want to present a positive image for you and your company.

Good Workplace Conversations

Having occasional friendly conversations with coworkers is fine. If you can chat easily with people from work, it shows you are friendly and likeable. Being social and able to talk to others is something that employers look for in a new employee. Positive conversations build the relationships that improve teamwork and workplace morale.

Too much talking, however, can have a negative result. It is important to know your boundaries. Talking becomes a problem if:

- It interferes with your work or the work of people around you
- It disrupts the flow of work especially in a fast-paced environment like a warehouse
- It affects your pay or your coworkers' pay because it causes you or your coworkers to miss incentive bonuses
- It negatively affects your career goals

At the right time there are many topics that you may wish to talk about, such as:

- Weather
- Food, cooking, recipes, and good restaurants
- Personal hobbies and activities like sports and travel
- Music
- Movies and books
- Topical news that is not political or religious
- Positive news in your life

Subjects you want to avoid:

- Health problems. You may need to discuss this with your supervisor if it affects your job or you need time off. This should be discussed directly with them and with few details
- Money issues
- Personal issues or family issues
- Do not gossip about others, especially your coworkers.
- Political, religious, or other deeply personal issues

Inappropriate Communication

Statements, jokes or conversation that are sexist, racist, or derogatory have no place in the workplace. These can:

- Makes your coworkers feel intimidated, teased, or even bullied which could result in a harassment complaint against you
- Change how others see you and ruin your reputation
- Make it more difficult to get a raise or promotion

Your workplace will have formal policies in place about harassment. You should read and understand these policies.

If you see other people who are clearly communicating inappropriately tell your supervisor. You should also know your rights if you are a victim of harassment. The law requires employers to have a system to deal with workplace harassment that includes:

- Procedures for workers to safely report any workplace harassment
- An outline of how the employer will deal with complaints of workplace harassment

Communication Blocks

There are many ways to communicate and people share many ideas and thoughts everyday. It is natural that some messages are not understood exactly or not as clearly as the speaker had planned. This is often the case in a large warehouse or where there are many jobs happening at the same time. These misunderstandings cause confusion or frustration and can lead to workplace difficulties. Some of the obstacles to good communication include:

- Physical barriers: Loud machines, people shouting, loud noise can get in the way of verbal communication. Poor writing, stickers misprinted and mixed up paperwork can cause confusion with written materials.
- 2) Biases: Seeing the world through your own experiences, interests, upbringing and backgrounds can sometimes cause miscommunication.
- 3) Emotional barriers: Communication is affected when the people communicating are feeling strong emotions such as anxiety, stress, anger, excitement, etc. This is often worse in busy and loud places like a warehouse. Often people react before thinking about how to communicate.
- 4) Language barriers: Language differences, speech problems, and strong accents are just some examples of how language can block good communication. Use of slang, 'inside' references, the use of short forms, and incorrect grammar can all block communication.
- 5) Assumptions: Many times, people assume they know what the other person is communicating and do not confirm. This is often the case when communicating emotional thoughts or ideas. In tense interactions or conflict this can lead to many misunderstandings.

Are You Speaking Clearly?

Sometimes we think others are not listening, but we can also help others hear us better and maybe avoid misunderstandings. There are some simple ways to improve your speaking and be better heard:

- Slow down your speed. Most people need to go slower when speaking
- Articulate your words as well as you can to be clear. Try not to mumble or use many words like um, or like
- Be polite. This will help you to remain calm if you are frustrated. Keep speaking at a slow pace, even if you are frustrated
- Do not yell unless it is to overcome a physical barrier to communication like loud machinery
- Use direct precise language
- Be confident when speaking
- Don't talk "at" people. Make sure that they are part of the conversation



The Listening Process

Listening is one of the most important skills you can have. How well you listen has a major impact on your job effectiveness, and on the quality of your relationships with others. It is a skill that requires work and can be improved.

We listen for many reasons, including:

- Sharing information and directions
- Understanding new or different ideas
- For enjoyment
- To learn new things

It is an important and worthwhile skill to practice.

"We have two ears and one mouth so that we can listen twice as much as we speak"

Epictetus

The Process of Listening can be divided into 4 main areas:

1) Hearing

Hearing involves picking up sounds of the speaker by performing these actions:

- Allowing the other person to talk
- Avoiding interruptions
- Focusing on the speaker maintaining eye contact
- Encouraging the speaker to elaborate on what is being said through verbal and nonverbal cues
- Listening to what is said and not how it is said
- Mirroring the speaker's physical behaviour to encourage further talking
- Observing nonverbal behaviour as well as what is said
- Using open-ended questions to encourage the speaker to continue to talk
- 2) Clarifying

Often, what is said is not completely or accurately heard. The speaker has some responsibility to ensure that what he or she has said is understood. The listener must make an effort too. Here are some steps to help clarify what was said.

• Ask open ended questions to get more detail

- Avoid leading questions that are just looking for a particular response
- Do not make conclusions before the speaker is done
- Keep your questions relevant
- Look at the speaker's body language to see how it fits with what is being said
- Paraphrase what was said to check accuracy, "...what I heard you say was..."

3) Interpreting

After clarifying what the speaker has said, be ready to interpret the message. This requires you to think about the credibility of what the speaker is saying and to understand what is said.

- Look at body language and the feeling of what is being said, along with the plain meaning of the words
- Sometimes what is said by the speaker and the body language can be different. This can cause misunderstanding. A good example would be smiling while saying angry things.
- Tell the speaker your interpretation of what was said and check its accuracy
- Focus on facts and data, not how you think things are
- Identify the main ideas
- Separate assumptions the speaker is making from facts and data

4) Responding

Sometimes we need to respond to what the speaker says. Of the four steps of the listening process, this one is sometimes optional. Here are some steps to respond effectively:

- Be sincere
- Respond to what the speaker actually said, not what you assumed they said
- Follow-up on any questions or requests by the speaker

- Respond using body language and with some emotion (don't be a robot)
- Exhibit empathy rather than sympathy
- Exhibit verbal and nonverbal cues that build bridges rather than walls between you and speaker.
- Seek feedback on your response

Characteristics of Active Listening

As you see from the picture of the listening process, there is a connection between the listener and speaker that is going in both ways. To show that you are part of the communication and to improve your listening remember the mnemonic LISTEN:

L	Look Interested
Ι	Involve yourself
S	Stay on target
Т	Test your understanding
Ε	Evaluate the message
Ν	Neutralize your feelings

You should remain focused on the speaker and what they are saying. By looking at the speaker and looking interested it will be easier to focus on what is being said. You can involve yourself with the speaker by using body language like nodding and using verbal cues like making noises of agreement. This will make a stronger connection between you and the speaker.

You will also need remain undistracted during the communication. Focus on what the speaker is saying. Ask questions to test your understanding. Actively think about what is being said. This will help you to stay on target with the topic and with what is being discussed.

It is often necessary to slow or stop our immediate emotional response. Sometimes we want to listen through our emotions. This often happens if we are angry or upset. Consider what the person is saying and her or his body language. Do not make assumptions.

Non-Verbal Signs of Active Listening

There are many signs that we give to the speaker that someone is connecting with them. These can include:

- Listening
- Eye Contact
- Posture
- Mirroring
- Not being distracted

Mirroring is when a person imitates the gesture or speech pattern of another. We often do this when listening.

Be aware that it is perfectly possible to learn and mimic non-verbal signs of active listening and not actually be listening at all. It is more difficult to mimic verbal signs of listening and comprehension.

Verbal Signs of Active Listening

When you are listening actively you should also use verbal cues. These will help you to better understand what the speaker is saying. It will also help the speaker make their ideas clearer. If you are uncertain about what they meant, then question and clarification are needed. Do not assume you understand everything that is said. Specific verbal signs of active listening include:

- Positive Reinforcement
- Remembering
- Questioning
- Reflection

- Clarification
- Summarization

Why Few People Listen Well?

- Listening sometimes does not come easily.
- Often people are willing to listen but lack good listening skills
- People tend to see the world from their perspective or in only one way. They find it hard to see ideas and pictures that are very different from their own experience.

10 Steps to Effective Listening:

Step 1: Face the speaker and maintain eye contact

Step 2: Be attentive, but relaxed

Step 3: Keep an open mind

- Step 4: Listen to the words and try to picture what the speaker is saying
- Step 5: Don't interrupt and don't impose your "solutions"
- Step 6: Wait for the speaker to pause to ask clarifying questions

Step 7: Ask questions only to ensure understanding

Step 8: Try to feel what the speaker is feeling

Step 9: Give the speaker regular feedback

Step 10: Pay attention to what *isn't* said—to nonverbal cues

What's Your Communication Style?

We all communicate in different ways. Some methods are more effective than others. If your way of communicating is not working, then you can learn to change it. By changing how you communicate you will have more win-win situations. Consider some common ways of communicating. Which one best reflects your style (be honest!)

Passive

A passive communication style is basically NOT communicating. When someone is a passive communicator, they avoid stating their ideas or thoughts. They are often agreeable, pleasant, and always say "yes" to other people's requests.

Passive communicators struggle to express themselves. This is very often the case when they are trying to communicate negative thoughts and feelings, such as anger. They often hide their negative feelings. This also causes frustration that is not communicated. This makes it hard for others to meet their needs. This type of communication often makes it a challenge to achieve your goals.

Passive Aggressive

Passive aggressive communicators use sarcasm, negative comments, vague hints to try to communicate. This allows them to say negative comments while trying to avoid taking responsibility for the comments. This style of communication is most clearly seen in conflict situations. Instead of stating the problem or dealing directly with the person they are speaking to, they will usually avoid the issue and make negative comments. Often, passive aggressive communicators avoid the issue by suggesting the speaker is at fault or passing the blame on to others.

This passive aggressive communication is very damaging to relationships. Although the passive aggressive person thinks he or she is "communicating" in these situations, others are left confused or unable to confront the issue because when confronted, passive aggressive people generally deny there's a problem or reverse the blame on the other person. In some cases passive aggressive communicators try to make comments into 'jokes.' These are often negative jokes and are a way of avoiding the true issue. This also allows them to suggest that others are unable to take a joke.
This type of communication does not allow you to talk openly about issues that you want to address. This means that it often prevents problems from being resolved leading to more frustration. The person you are communicating with will often feel confused or uncertain about your points. People will also tend not to listen to someone who is communicating so negatively.

This is the least productive of any communication style. Adopting a more assertive style will help you get your needs met and achieve your goals.

Aggressive

An aggressive communication style is often a very competitive approach. The aggressive person is often trying to make others back down from a conversation or show that the only important concerns are theirs. They are often unconcerned about the other person they are communicating with and are perceived as attacking others when dealing with problems.

People who have an aggressive style are usually poor listeners and are often seen as uncaring. In the short-term this type of communication can allow you to 'win' a discussion but will likely prevent good communication. Others will tend to avoid aggressive communicators. People will also not share their ideas or discuss problems because they will fear being 'attacked' for them.

If this is your main way of communicating with others you should consider that this style is often too focused on your needs rather than the needs of others. By learning to approach situations in a more positive, assertive way, you will still get your point across without offending others or missing important information because you were not listening.

Assertive

This way of communicating is the most balanced of all. Assertive people are able to express what they need but also show an interest in others. Assertive individuals are

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able to stand up for themselves but recognize that others also need to be heard. People

who use this style are often very good communicators. They can express honest emotions and deal directly with conflict without letting it stop communication. They express themselves clearly, even when dealing with

Assertive and aggressive are not the same. If you are assertive, it means you are clearly saying what you want. Aggression is usually trying to control or dominate.

negative issues, but also work to listen. They also often speak calmly and directly in a way that does not offend others.

It requires work to develop this style, but people who are assertive speakers are often able to handle difficult situations and people successfully.

Constructive Criticism and Coaching

In the logistics warehouse, it is everyone's responsibility to pitch in and to help each other. Sometimes this might mean that you will give coworkers suggestions on how to do better or give them feedback. Some people find it hard to take feedback well. Some people take it personally if there are any negative comments. This can cause stress and conflict in the workplace. It is important to know that feedback is meant to improve things, not to create bad feelings.

There is a difference between criticism and constructive criticism. Sometimes we might be giving constructive feedback at other times we may be receiving feedback. Many times, we have to give feedback or constructive criticism, and sometimes we are on the other end and have to receive it. It is important to make the feedback positive and to make sure it doesn't end up sounding more hurtful than constructive.

When giving or receiving feedback, here are some important tips:

- Use patience when communicating with coworkers. Try to understand what they are saying. Remain calm
- Take a little extra time to express your ideas and needs in a more positive and supportive way

- Listen carefully to what is being said. Try to focus on the intent of what is said and not just the words used to say it
- Don't be defensive. Avoid blaming others. Try to understand and take responsibility for your actions. It is ok to disagree, but let the other person know that you hear their concerns and will try to respond positively to them

Workplace Communication Skills

When working in the logistic warehouse or communicating to other departments it can sometimes be hard. People cannot always communicate perfectly. Messages get mixed up every day. Communication blunders will happen, but you can learn to become more aware of them and learn how to avoid them.

When working in logistics and related jobs it is important to be open minded, sociable, and focused on communicating actively with coworkers. Your success and the success of the others you work with will improve.

Learner Activity #1: Discuss one of the following statements:

"The language you use in the workplace should vary depending on whom you are speaking to."

"Communication in the workplace is key to the success of the business but is more than just the words we say. Choose the words you use wisely and say them carefully."

Learner Activity #2: Discussion

List 5 communication mistakes made in the workplace.

List 3 ways in which we communicate at work.

Have you experienced a communication breakdown at work? If yes, describe it and how you dealt with it.

If you have worked in a situation where workplace communication was poor, what was the reason for it? Did it affect your job?



Employment & Your Health



Remaining Healthy on the Job

Many chronic conditions that workers face may be preventable and caused by nonactive lifestyles and poor nutrition. People spend much time in the workplace, and we know that these places may also be directly impacting employees' health.

The majority of today's workforce may spend up to 40 hours per week at work, with additional hours spent in cars, buses and trains during morning and afternoon commutes. During this time, we are using, straining, and often holding our bodies in unhealthy and unnatural ways. We have risk management programs, safety glasses, hard hats, and reflective work vests. We need to be just as aware of our muscle and body safety. We move, we work, we rest, but we leave our muscles behind.

Musculoskeletal Disorders (MSDs) are the leading cause of pain, suffering and disability in the workplace today. Luckily MSDs are somewhat preventable. Many jobs in a warehouse and loading/unloading trucks require heavy muscle use. Other jobs, such as driving, and office or clerical work require much sitting. In all cases it is important to keep in mind your body and muscle health.

What is a "Musculoskeletal Disorder" (MSD)?

A musculoskeletal disorder is simply an injury or disorder to the human body's musculoskeletal (or "movement") system. The musculoskeletal system is made up of tendons, ligaments, nerves, soft tissue, etc. and is designed to enable your body to move. You can think of an MSD as a "movement system disorder".

Common terms for different kinds of MSDs include:

- Repetitive motion disorder
- Repetitive Strain Injury
- Repetitive Trauma Disorder
- Ergonomic Injury

There is no single cause of MSDs It is not accurate to say that MSD injuries are caused by repetition or ergonomics alone. What happens is that over the course of time, micro-trauma to the soft tissues begins to outrun the

Ergonomics is the study of interactions among humans or between humans and a system.

body's recovery system. This creates a muscle imbalance that eventually develops into an MSD.

The Cause of MSDs

The work environment and our bodies are both complex systems. MSDs happen when these two these systems meet.

There are many causes/risk factors that can lead to the formation of MSDs.

We break these risk factors into two categories:

- 1. Ergonomic Risk Factors: These are risks in the work environment. They include repetitive tasks, excessive force, awkward positions, vibration, contact stress or cold/hot temperatures.
- 2. Individual Risk Factors: These are risks related to the individual. They include, poor work practices, poor self-care habits, and poor health habits.

The Key to MSD Prevention

The way to lower MSD risk factors is for you to take a proactive approach to your healthcare.

Here is the difference between reactive and proactive healthcare.

Reactive healthcare:

- Waits for an injury to occur before being thinking about health
- This gives the worst health outcome for the person who was injured

Proactive healthcare:

• Is implemented before an injury

- Employs injury-prevention tools and techniques. Workers should have information and education to help learn about these tools and techniques
- This gives the best health outcomes

What Proactive Healthcare steps can you take?

One of the most important things you can do is stretch. Stretching helps protect our muscles. Stretching on a daily basis can provide a competitive edge in the workplace. It can help you prevent injury, work faster, and save you and the company money for missed



work. It will also help you feel more better, both physically and mentally. This will help your work be more enjoyable and successful.

More benefits:

- Better ability to perform everyday tasks at work, home, and play
- Gives a mental break from the work routine. This reduces your stress
- Reduces risk of musculoskeletal disorders/cumulative trauma disorders
- Reduces joint wear and tear, leading to fewer stiff joints and reduced pain from arthritis
- Better reaction time, balance, and posture
- Reduced muscle fatigue and soreness
- Reduced risk of lower back, neck, shoulders, knees, hips, elbows, wrists, and hand pain
- Increased energy from increased supply of blood and therefore nutrients to muscles, tendons, and joints

Stretching is the best investment an individual can make. We all need to stand up and stretch to feel better about ourselves and our job.

Types of stretching:

With so many different types of stretching techniques for improving flexibility. It is often confusing to figure out the difference between the different ways to stretch and how each one



is done. To help here is a short description of six common ways to improve flexibility.

Static Stretching

The most common type of stretching is called static stretching. You do this by extending the muscles you want to target as far as you can (the maximal point) and holding it for 30 seconds or more.

There are two types of static stretches:

- Active: Added force is applied by the individual
- Passive: Added force is applied by an external force (e.g., partner or helping device)

Dynamic Stretching

Unlike static stretching, in dynamic stretching you use continuous movement to copy an exercise or sport. The purpose of dynamic stretching is to improve flexibility for a given sport or activity.

An example of dynamic stretching would be a sprinter doing long, exaggerated strides to prepare for a race.

Ballistic Stretching

This type of stretching is typically used for drills and uses repeated bouncing movements to stretch the muscles that you want to target. These types of stretches are safe to do if you start with static stretching and then move from low impact bouncing to higher impact. You need to ease into these stretches.

Active Isolated Stretching (AIS)

This stretch technique is performed in several repetitions of about two seconds each. Each time you go past the previous point of resistance by a little bit. Much like a strength-training, AIS is done for several sets with a specific number of repetitions.

Myofascial Release

Myofascial release relieves tension and improves flexibility by using a foam roller or similar device. The goals is to relax and massage the fascia. Fascia is a system of connective tissue beneath the skin that attaches, stabilises, encloses and separates muscles and other internal organs.

Small, continuous back-and-forth movements are performed over an area of 2 to 6 inches for 30 to 60 seconds. The individual's pain tolerance will determine the amount of pressure applied to each area.

Proprioceptive Neuromuscular Facilitation (PNF)

This type of stretching is an advanced method of deep stretching. This stretch starts with passively stretching your muscle or muscle group as you would for a deep stretch,

but then you tighten the muscle while it is in the stretch position. This is called an isometric contraction.

After the stretch with the contraction, you again

Isometric refers to the development of muscle tension without a strong contraction.

passively stretch the muscle at a deeper stretch so that the muscle stretches further than the first stretch. If you are uncertain of this type of stretch, you might want to practice it with a partner first. It is may also be good to practice with a trained fitness instructor. Knowing the difference between each stretching technique and how to properly do them will help you to determine which stretch is best for you. In all cases you want to do the stretches safely. If you feel pain, stop immediately.

Stretching at Work

No matter how well a workstation is designed, problems can happen. We need to think about how our work is done. The physical demands of lifting and moving all the time



can fatigue muscles. They can also mean that some muscles are overworked, while others are underworked. In many jobs there will be times you will be standing or sitting with little movement. This lack of movement can lead to muscle pain and strain.

What can be done to minimize this strain? It is recommended that a person break for 5-10 minutes for every hour spent at a workstation. If possible, it is ideal to stand up and walk for this time (e.g., work tasks that involve standing, walking, or at minimum, a change of body position). Some of these stretches can be done at the same time. Other activities for a break are:

- Vary the work tasks. Break up tasks work by doing other job duties that involve moving around or changing body position. Try to stand up and move around
- If you are looking at a computer screen, look away occasionally and focus your eyes on an object far away
- Take regular rest breaks to ease muscle aches, eye strain and stress.
- Relax your muscles, stretch and change position
- Hold the stretch for a reasonable time (e.g., 10-20 seconds).
- Breathe normally
- Do not bounce, pull/push excessively, or lock your joints. You should feel a stretch, but not pain
- If you feel pain or severe discomfort, stop stretching. Ask your medical professional for advice

Jobsite Stretching Exercise

Logistics workers need to warm up to meet the job's physical demands. Even if you are a pallet driver and expect to be using an electric machine, you will still be moving on and off the machine and moving heavy boxes. Simple stretching exercises will warm up



muscles, improve elasticity and help keep you comfortable at work. Follow these general guidelines:

- Breathe while exercising. Don't hold your breath
- Exercise regularly. Develop a pattern of exercising various parts of your body at regular intervals throughout your workday before discomfort occurs.
- Stretch gently. Avoid jerky movements
- Go easy at first. Start with a few exercises and gradually increase
- Discontinue if pain occurs. Pain and discomfort after you exercise may indicate that you did too much

Neck

- Start with your head facing forward
- Turn your head slowly to one side as far as comfortable
- Then turn to the other side
- Repeat five times

Shoulder Circles

- Slowly move your shoulders in a circular motion: upward, forward, downward and backward for forward circles
- Reverse the direction for backward circles
- Repeat five times in each direction





Arms, Shoulders and Rib Cage

- Interlace your fingers
- With your palms facing upward above your head, press your hands upward, stretching your arms, and hold for five seconds
- Gently stretch to one side, hold for five seconds and return to centre
- Gently stretch to opposite side, hold for five seconds and return to centre
- Repeat five times
- As a variation, your press hands forward at shoulder level

Shoulders and Arms

- Extend one arm at shoulder level across your chest
- Place your opposite hand on your elbow and gently apply pressure toward the opposite shoulder, stretching your arm across your chest
- Repeat, alternating sides

Chest and Shoulders

- Bend your elbows with your hands near your shoulders
- Breathe in through your nose. As you exhale, lower your elbows down and back. Aim your elbows at your back pockets
- Hold this position for a few seconds and then relax.
- Repeat five times
- As a variation, keep your elbows at shoulder height







Shoulders, Back and Hip

- Place your palms on your lower back while in standing position
- Leaning your shoulders back stretch your upper body backwards. Hold this position for five seconds
- Return to a neutral position ٠
- Repeat five times

Wrists

- With your forearm in a comfortable horizontal position and your palm toward the floor, bend your wrist down
- Then raise your hand extending your wrist. •
- Repeat five times •
- Repeat with the other hand five times •

Wall Stretch

- In a standing position, place your hands against a stable object or • wall to support yourself. Move one foot back about two feet. Be sure both feet are facing forward.
- Shift your weight forward over the front foot, bending the forward knee up to 80-90 degrees.
- Hold this position for 3 -5 seconds and slowly return to the standing position, • keeping the forward foot out in front.
- Repeat five times
- Switch positions with the opposite leg forward and repeat five times.









Quad Stretch

- In a standing position, support yourself by holding onto a stable object or a wall
- Bend your right knee, bringing your foot up toward the back of your thigh
- Grasp your foot with your right hand, gently stretching the top of your right leg, hold for 3 5 seconds.
- Slowly release your foot and return to the original standing position
- Repeat, alternating legs, five times for each leg.



Learner Activity #1: Proactive/Reactive Healthcare

Are the following healthcare decisions proactive or reactive?

Circle the correct answer.

1)	Getting a flu shot	Proactive	Reactive
2)	Taking time off work because you have a fever	Proactive	Reactive
3)	Making healthy food choices	Proactive	Reactive
4)	Going to the Doctor because you feel sick	Proactive	Reactive
5)	Take stretch breaks before/during work	Proactive	Reactive
6)	Choosing to take stairs over elevators	Proactive	Reactive
7)	Going to a Chiropractor because your muscles are sore	Proactive	Reactive
8)	Having regular medical and dental check-ups	Proactive	Reactive
9)	Getting a good night sleep regularly	Proactive	Reactive
		D	D

10) Spending money on fad diets or trendy gym memberships. Proactive Reactive

Learner Activity #2: MDS Risk Factors

Place the following Musculoskeletal Disorder risk factors into the correct column:

Taping boxes closed for an entire 8-hour shift Stock too high on the shelf Watering a plant standing on an office chair Taking a short-cut when doing an assigned task Wrong transportation device Heavy Boxes Poor footwear Poor lifting practices Faulty ladder

Ergonomic Risk

Individual Risk



Warehouse Ergonomics



Warehouse Injuries

Workers in transportation and warehousing experience nearly twice as many

musculoskeletal injuries as workers in other sectors of private industry.

Workers in the warehousing and storage sector of industry do many tasks, including labeling items, breaking bulk shipments down into smaller components, Musculoskeletal means both the skeleton and the muscles together. That is the muscles, tendons, ligaments, nerves, discs, blood vessels, etc.).

inventory control, light assembly, order entry and fulfillment, packaging, pick and pack, price marking and ticketing and transportation arrangement. Occupations vary as well, including industrial truck and tractor operators; laborers (such as those who move goods, stock and materials by hand); shipping and receiving clerks; and stock clerks and order fillers. But they all have one thing in common: a high rate of strains and sprains.



Musculoskeletal injuries occurred twice as frequently in the warehousing and storage industry than other industries. Additionally, injuries in exposure categories such as falls, slips and trips and overexertion (including overexertion in lifting or lowering) were higher in the warehousing and storage industry.

These injuries most often affect the back, upper extremities

and knees. Often, they are caused by exposure to ergonomic-related risk factors including high application of force (such as gripping something hard many times a day), awkward postures, and long work periods without adequate breaks.



Here are some common ergonomic principles that can be applied in warehouses in order to identify risk and help to find ways to reduce musculoskeletal injury.

Application of Ergonomic Principles in Warehouses

Warehouse tasks can be divided into three broad categories: placing and picking; packing; and receiving and shipping.

Placing and picking tasks

Placing and picking tasks often include the placement and picking of items from shelving or bins within the warehouse or storage system. These tasks can be performed many ways and use varying equipment. Some examples include:

- Placing or picking large or heavy items using a forklift or other lift mechanism from a floor location.
- Using an order picker to place or pick items from different heights.
- Using a cart to manually place or pick items from the ground level

Risk factors that might present themselves during picking and placing relate to the way products are handled. These can include the weight of items, body postures and frequency of handling the items.

You can reduce the risk of injuries from placing and picking tasks by:

- Making sure that you are facing the storage location in a way that does not require you to twist your back
- When possible, positioning yourself so that the activity (lifting, pulling, pushing, placing, etc.) occurs between knee and shoulder height. Heavy or awkward items should be positioned between knuckle and elbow height.
- Using proper lifting techniques.
- Using mechanical help (hoists, pulleys, lifts, etc.) when handling heavy or awkward items
- Making sure that the wheels on carts are well-maintained and work well. When the carts are in poor shape, they need more force to move and turn them.
- Not overloading carts. Ensure that the weight on carts is below the maximum that the cart can hold

• Making sure that items on the cart are not above what you can see. Items that are stacked at high levels can block your field of vision and limit how you can move your cart. This may increase the risk of bumping into items or rolling over

items that might be near the floor. It can also cause awkward body postures. Most pallet drivers give you a space to stand in so you can see safely. Even in these cases you must always be careful to be in full control

• Making sure that safety checks are performed regularly for all equipment and that the equipment is in proper, safe working order

Packing tasks

Packing tasks often include the preparation of items for shipment once they are retrieved. These tasks can be performed in several ways. This will depend on the shipping method needed and the size of the item being packed. Some examples include:

- Securing large or heavy items in shipping crates or on pallets. You might need to use shrink-wrapping equipment or other methods to secure the shipment
- Packing items in boxes and including packing materials to secure the item during shipment
- Completing paperwork needed for shipment

Risk factors during packing tasks depend on the way products are received, packed and shipped. These can include the weight of items, the body postures when handling them and how often items are handled.

You can reduce the risk of injuries from packing items by:

• Making sure you are do not need to twist or extend yourself to reach the product

• Working as close to the neutral posture as possible. Neutral posture includes a straight neck and a straight back with the curves naturally supported. Your shoulders should be straight down, elbows at a right angle and wrists straight.

• Using as little force as needed when doing many daily takes. These forces can include pinching, gripping, pushing and pulling while performing tasks like taping, filling packages with fill material, retrieving packing slips, and other tasks.

- Using good lifting techniques
- Trying not to carry items. Use a cart, conveyor, or a roller table instead

Receiving and shipping tasks

Receiving and shipping tasks often include placing or removing boxes from a pallet. These tasks may be performed manually and include the breakdown of pallets containing similar items or pallets of mixed items. Some examples include:

- Using good lifting techniques
- Putting large or heavy items in shipping crates or on pallets. This may require the use of shrink-wrapping equipment or other types of materials to secure the shipment.
- Packing items in boxes and including appropriate packing materials to secure the items during shipment
 - Completing necessary paperwork for shipment

Risk factors that can be present during loading tasks relate to the way products are received, packed and shipped. These can include the weight of items, the body postures of the workers and frequency of handling items.

Some things that can be done to reduce risk factors related to injuries from receiving and shipping tasks include:

- Using proper lifting techniques.
- Using mechanical help when possible
- Placing the load between knees and shoulders when possible
- Heavy weights should be placed between knuckle and elbow height



Basic Ergonomics

Power Grip

A power grip uses the muscles of the hand and forearm effectively and is less stressful than a pinch grip. Consequently, a one- or twohanded power grip should be described as wrapping all fingers and the thumb around the object that is being gripped. It is sometimes described as making a fist around the object being gripped. The

power grip can be used for many items, including bags, cans and small boxes.

Pinch Grasps

A pinch grip requires an individual to grasp an object with the thumb on one side and the rest of the fingers on the other side. Generally, this is considered a weak grip.

Power Lift

When the item is too heavy or bulky to lift with a one-hand power grip, use the two-hand power lift.

Best and Preferred Work Zone

Performing work within the best and preferred work zones shown below facilitates productivity and comfort. Work is safest when lifting and reaching is performed in these zones. Working outside these work zones results in non-neutral postures that may increase the risk of injury. It is particularly important to perform heavy lifting tasks within the best work zone.







Best Work Zone

Best Work Zone

- As far forward as your wrist when you hold your arm slightly bent
- As wide as the shoulders
- Upper level at about heart height
- Lower level at about waist height

Preferred Work Zone

- As far forward as your hand when you hold your arm out straight
- A foot on either side of the shoulders
- Upper level at shoulder height
- Lower level at the tip of the fingers with hands

held at the side

Stocking Shelves and Display Areas



• Use a step stool to reach items on the top of pallets or on high shelves.

• Use a kneeler or stool when working at low shelves for long periods of time. This reduces stress on the knees and legs when squatting and

kneeling

or reaching overhead.

- Use a cart to move items from the pallet to shelving or case where they are stocked.
- **H**
- Arrange shelves so that heavy items and fast-moving items are stored within easy reach. This reduces stress on the body caused by bending
- Use the correct safety cutter for the job. Be sure to use a left-handed cutter if you are left-handed.
- Keep safety cutters sharp. Using dull tools requires more force. Replace cutter blades more often.
- Ensure that the floor areas are level and free of debris and spills. Report any floor problems that need repair immediately.



- Avoid congestion in aisles so that you have adequate room to sort cases, mark merchandise and stock shelves.
- Use a powered hand jack or scissors-lift to raise the pallet to waist height. This prevents picking up cases with a bent back.

Lifting and Material Handling

Lifting heavy items is one of the leading causes of injury in the workplace. Overexertion and trauma caused be repetition are one of the biggest factors in these injuries. Bending, followed by twisting and turning, are commonly reported as the cause of back injuries. Strains and sprains are often caused from lifting loads improperly or from carrying loads that are either too large or too heavy. These are common hazards when moving materials by hand.

When employees use smart lifting practices, they can prevent injuries caused by lifting heavy objects. You are less likely to suffer from back sprains, muscle pulls, wrist injuries, elbow injuries, spinal injuries, and other injuries when you make sure you lift correctly.

Lifting Principles Lifting Stages

- 1. Preparation
- 2. Lifting
- 3. Carrying
- 4. Setting Down

1. Preparation

Before lifting or carrying, plan out your lift. Think about:



• How heavy/awkward is the load? Should I use mechanical means (e.g. a hand truck) or another person to help me with this lift? Can I break the load into smaller parts? Should I carry one item at time?

• Where am I going with the load? Is the path clear of anything that may block me, slippery areas, overhangs, stairs, and other uneven surfaces? Are there closed doors that need to be opened?

• Are there handholds on the load? Do I need gloves or other personal protective equipment? Can I place the load in a container with better handholds? Should another person help me with the load?

2. Lifting

Get as close to the load as possible. Try to keep your elbows and arms close to your body. Keep your back straight during the lift by tightening the stomach

muscles, bending at the knees, keeping the load close and centered in front of you, and looking up and ahead. Get a good handhold and do not twist while lifting. Do not jerk; use a smooth motion while lifting. If the load is too heavy to allow this, find someone to help you with the lift.

The 'Powerzone' is the best part of your body to use for lifting. It is close to your body, between the mid-thigh and mid-chest of the person lifting. You get the most power with the least work.

3. Carrying

Do not twist or turn the body; instead, move your feet to turn. Your hips, shoulders, toes, and knees should stay facing the same direction. Keep the load as close to your body as possible with your elbows close to your sides. If you feel fatigued, set the load down and rest for a few minutes. Don't let yourself get so fatigued that you cannot perform proper setting down and lifting technique for your rest.

4. Setting Down

Set the load down in the same way you picked it up, but in the reverse order. Bend at the knees, not the hips. Keep your head up, your stomach muscles tight, and do not twist your body. Keep the load as close to the body as possible. Wait until the load is secure to release your handhold.

Important Things to Remember:

• Use mechanical means (e.g. hand trucks, pushcarts, etc.) when possible for heavier or awkward loads. Remember you must be trained on all equipment and be allowed to use it.

• Push rather than pull. It is easier and safer.

• Keep loads as close to the body as possible. Do not twist while lifting, carrying, or setting down a load. Nose, shoulders, hips, and toes should all be facing the same direction.

- Do as little reaching as possible.
- Always bend at the knees, not the hips.

• Get help when needed. Do not lift or carry things you don't feel comfortable with, no matter how light the load.

• Plan for all parts of the lift: lifting, carrying, and setting down.

• Try to use proper handholds while lifting. If an item does not have a good handhold, think of ways to fix it. One way is to place the item in a container with good handholds. You could also create a safe and proper handhold with an appropriate tool, etc.

• Use personal protective equipment (PPE) where needed, such as gloves with good grips and steel-toed boots where need.

In many places Personal Protection Equipment is called PPE

• Take rest breaks and change the job you are doing as often as you can. Take turns with others for frequent and/or heavy lifting.

• Place items to be lifted within the "power zone". The power zone is close to the body, between the mid-thigh and mid-chest of the person doing the lifting. This is the area where the arms and back can lift the most with the least amount of effort.

Weight of Objects

Heavier loads place greater stress on muscles, discs, and spine.

When you can, use tools such as forklifts or hand trucks to transport heavy items. Ramps can be helpful in moving heavy items from one level to another. Items that must be lifted by hand should be placed at "power zone" height: about mid-thigh to mid-chest of the person doing the lifting. Ensure that proper lifting principles (see above) are used.

You can sometimes break loads up into smaller, lighter quantities. Is the container itself heavy? Perhaps a smaller or lighter container is available. Limit the weight you lift to no more than 22 Kg (about 50 pounds) When lifting loads heavier than 22 Kg, use two or more people to lift the load.

Awkward Postures

Bending while lifting causes several problems for the back. It adds the weight of the upper body to the weight of the object being lifted. Bending and/or reaching moves the load away from the body and increases the amount of stress on the back. This leads to stress on the lower spine and makes the muscles very tired. Carrying loads on one shoulder, under an arm, or in one hand creates uneven pressure on the spine. This can cause more stress on your spine and tire out the muscles.

Move items close to the body and use the legs when lifting from a low location to minimize bending and reaching. Make sure that you can safely get as close to your lifting load as possible. Store and place materials that need to be manually lifted at the "power zone": mid-thigh to mid-chest



height. To do this place items on shelves, tables, racks, or stacked pallets; alternatively, use ladders or aerial lifts where needed to elevate yourself and minimize overhead reaching. Remember you must make sure you are properly trained with all equipment. Roll-out decks in truck beds can be used to bring materials closer to the employee and eliminate the need to crawl into the back of a truck. Most warehouses use ramps to bring the boxes near the back of the trailer, so packers can quickly put items in the truck. Packers will need to make sure they do not twist as they lift.

For all jobs, make sure that proper lifting is used, including avoiding twisting and holding the load close to the body.

High-Frequency and Long-Duration Lifting

Holding items for long periods, even if loads are light, increases the risk of back and shoulder injury. When this happens muscles can be starved of nutrients and waste products can build up. Repeatedly exerting, such as when pulling wire, can fatigue muscles by limiting the time they need to recover. Your body needs to take proper rest to recover.

Plan ahead when you begin work that will require high-frequency and longduration lifting. This way, you can organize it to limit the time spent holding loads. Rest breaks can be planned, and jobs can be rotated between employees. This includes changing tasks (employees trading off on differing tasks) and teamwork. By working together each employee can do a different task of the same activity to limit strain.

Inadequate Handholds

Inadequate handholds, such as boxes without handles or oddly-shaped loads, make lifting more difficult. You want to move the load away from the body and reduce the height from which you are lifting the item. This will decrease the stress on your body and reduce the risk of dropping the load.

Where possible, use handholds such as handles, slots, or holes that provide enough room for gloved hands. If there are no handholds you might be able to move materials into containers with good handholds. Wear protective equipment to avoid finger injuries and contact stress. Ensure that gloves fit properly and provide a good grip. Suction cup devices are helpful in lifting materials with smooth, flat surfaces. Other safety clothing may be needed if you are lifting glass panels or other items that easily break. Other tools may be available that can create temporary handles.

Environmental Factors

Be aware of extreme temperatures that can affect lifting and material handling. For example, muscle flexibility decreases in cold temperatures, and hot temperatures can lead to heat stress. Low visibility and poor lighting increase the likelihood of trips and falls.

Do what you can to adjust work schedules to minimize exposure to extreme temperatures or low visibility. Wear appropriate clothing for the temperature in which you will be working. Drink lots of water to avoid dehydration in excessive heat. Provide proper lighting for areas with low light and try to perform work during daylight hours when possible. If you are working in the cold sections of the warehouse then your employer will give you warm clothing, which are important safety equipment.

Step Stool Safety

A ladder-type step stool is a small portable ladder with flat steps that is self supporting and foldable. All steps can be climbed on since the side rails continue above the top step.



In order to safely use the ladder-type step stools, users must follow these precautions:

1. Make sure the step stool is used on a level surface with a solid floor. All four feet should be support and meet the ground. A step stool must never be placed on other objects such as boxes or other unstable bases to obtain added height.

2. Make sure the step stool is spread fully open. Only use step stools that allow you to lock the spreaders. Do not use a step stool that is only partially opened. Make sure the locking mechanism is on.

3. Always check the step stool prior to each use. Look for damaged or missing parts. Make sure to check the condition of anti-slip feet and climbing surfaces. Place the step stool out of service if you think it is damaged and report it to your supervisor.

4. The anti-slip feet located at the bottom of each step stool must be present and in good condition. Do not use step stools on slippery surfaces.

5. When going up or going down, always face toward the step stool.

6. Set-up the step stool close to the work being done. Work with your body near the middle of the steps. Do not overreach from the side because this will cause the step stool to tip.

7. Do not move the step stool without first going down it. You can then move it to a new location and re-climb.

8. Store the step stool in a location away from excessive heat. Do not store items on top of the step stool.

Transporting Materials

Equipment for transporting materials can reduce physical effort, making the job easier. It is important to choose the right equipment for the required task. **Do not operate** equipment until you are trained on how to use it properly. Below is a description of the different types of equipment, both manual and powered, used in most warehouses.

Hand Trucks

- Two-wheeled hand trucks are for moving smaller, bulky objects. The load is tilted during travel
- A dolly can have two, three or four wheels with a platform. There are usually no handles so the load is usually pushed

• Floor Hand Truck (Manual Platform truck) A four – or more – wheeled hand truck with handles for pushing or hitches for pulling. It is suited for moving heavy odd-shaped objects.

• Shelf truck. Four wheels with at least two shelves so the load can be divided.









Pallet Jacks

Pallet jacks are designed and used for moving pallet-sized loads through a warehouse. Pallet jacks have a maximum weight limit of 3,500kg. Front wheels are mounted inside the end of the forks and extend to the floor as the pallet is lifted only enough to clear the floor for travel. Most large warehouses use powered pallet jacks.



Manual Pallet Jack

Powered Pallet Jack

Walkie Stackers

A walkie stacker (it is also sometimes called a pedestrian walk-behind stacker) is a pallet truck that you walk behind with a mast for lifting pallets to heights. There are many different types of walkie stackers that are suited to different applications. They are able to move vertically as well as horizontally and can stack one load on top of another.





Manual Walkie Stacker

Powered Walkie Stacker

Forklifts

Forklifts are larger in scale and have greater lifting, loading, and moving capabilities than pallet jacks. They are used for heavy loads and for their reach power to lift goods to and from high locations.

Forklifts perform a variety of work:

- Lifting and moving materials, both indoors and outdoors
- Loading products onto trucks for transport
- Lifting workers for certain types of jobs
- Specialty jobs, such as wet or dry sweeping of warehouse and dock floors



Forklifts are much bigger than pallet jacks. This allows them to lift heavier loads and move more material at one time. Their ability to lift and place goods on high shelves allows for the best use of warehouse space. They are also good at moving heavy pallets through narrow aisles and around tight corners.

Forklifts have three basic power sources: electric, diesel and gas. Electric forklifts are used indoors to transport goods throughout a warehouse or distribution center. Diesel

forklifts are best used outdoors for heavy loads and on rough terrain. Gas powered forklifts can be used indoors and outdoors. They cost less to buy, but fuel and maintenance costs are usually greater over the long term. Forklifts can have three or four wheels, depending on the type of work that needs to be done.

Special forklift trucks called Reach Trucks are often used in large warehouses. These are made to lift heavy loads very high into the racks. These forklifts have cameras to help the driver to use



them. The load is lifted so high the worker is unable to see where the pallets are being placed.

Platform Trucks

These trucks are made to provide support for loads that are not on pallets. They are also used for handling skids because the platform can lift a skid several inches to allow it to clear the floor. They have a greater lifting capacity than forklifts because the platform provides a greater lifting surface to support a load.





Walkie Platform Truck

Rider Platform Truck

Learner Activity #1: Safe Lifting Technique

Circle the pictures that show proper lifting techniques.



Learner Activity #2: Safe Lifting

Think of ways to reduce the lifting risk in the following situations:

A very heavy object:	
An awkward posture:	
Lifting a lot and for a long time:	
Odd shaped object:	
Outside on a very hot day:	
Learner Activity #3: Matching

Match the following descriptions on the left by drawing a line to the appropriate picture.

For loads not on pallets

Front wheels mounted inside the ends of forks can be manual or powered

Very commonly used transport aid that distributes loads between shelves

Moves sideways, up and down and can stack boxes

Manual aid that tilts for travel

Platform on 2, 3 or 4 wheels and has no handles











Unit 6 Barcodes: Tracking Data



How Barcodes Work

Background:

The basic technology of barcodes was developed in the 70's and started to become common in the 1980's. It was used as a way to tag goods with product information that could easily be read and recorded by computers.

It was created from the idea of Morse code, where short and long dots and dashes (or sounds) are substituted for letters and used to communicate. People were trained to 'read' the dots and dashes and put them into words.

Morse code is a series of short (dots) and long (dashes) lines or sounds that for the different letters of the alphabet. It was used before computers as a way to send messages by wired technology.

 A
 B
 C
 D
 E
 F

 G
 H
 I
 J
 K
 L
 M

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 P
 Q
 R
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This idea was then updated by having a laser to 'read' lines and spaces. Like Morse code the lines and spaces could be used instead of words. The barcode can be viewed as a type of optical Morse Code.

How are Barcodes Made?

Barcodes are found on almost all products that you see in any store. When a laser from a

computer scans a barcode, it is scanning a series of 95 evenly spaced columns. When it does this it checks to see the amount of light that is reflected. It can reflect a lot of light or a little bit of light. Computers only understand



ones and zeros, so any of

Electronic machines only understand 'on' or 'off.' In computing language this is understood as 1 and 0. Therefore, computers do not read letters. They use 1's and 0's instead!

the columns that reflect very little light are given a value of one. Columns that reflect a lot of light are considered a zero. The computer will read the lines as a series of 0's and 1's (for example, 000111010101110).

From Barcode to Numbers:



In the barcode above the computer begins to read the columns from left to right:

The first column reflects only a little bit of light = 1

The next column reflects a lot of light = 0

The third column is like the first and reflects a little bit of light = 1

The fourth, fifth and sixth columns all reflect a lot of light = o's

The computer continues to read the columns all the way across the barcode. In the end it comes up with a number that is 95 digits long. This number is full of ones and zeros.

Barcode Sections:

These 95 ones and zeros are then grouped into 15 different sections. Twelve of these sections are used for the numbers you see at the bottom of the barcode.

What do these numbers mean? The first number on the left-hand side is 0. This is outside the actual barcode. It tells us what type of barcode this is:

o = a standard barcode

2 = a weight item like fruit or meat

3 = a pharmacy item

5 = a coupon.

The next set of 5 numbers tells who made the product. In the barcode above, the 5 at the start of the product code tells us it is the Campbell Soup Company. The second set of 5 digits is the product code, which in this case is a 10 ³/₄-ounce can of chicken noodle soup.

Three sections are used as guards. These guards let the computer know where the barcode begins and ends. The guards also let the computer know where the six numbers on either side begin and end. This is important because the numbers on the left are one set of codes. The numbers on the right are a different set of codes. These are used to figure out if the barcode is being read left to right or being read upside down.

To figure this out the computer looks at how many 1's there are on the set of codes on each side of the barcode. The left set of codes will always have an odd number of 1's. The right side will always have an even number of 1's. This way the computer can always tell which side of the barcode is which. If the computer reads an even number of 1's on the left-hand side, it knows the barcode is flipped upside down. When it reads the barcode, it can just flip the numbers around before processing them.

The computer can also double-check for an error because all the codes on the left side begin with a zero and end with a 1. All the codes on the right side begin with a 1 and end with a 0.

Modulo Check Character:

The last number on the right-hand side is used to make sure the whole code is correct. This number is called the modulo check character. It is another form of error checking. When the computer scans the barcode and processes the numbers, it needs a final way to know whether everything is correct. The computer performs a calculation using a formula and the answer to the formula will be the same number as the modulo check character.

The modulo check character formula uses the o's each of the numbers at the bottom of the barcode.

77

It first adds up the digits in the odd-numbered positions. Then it adds up the digits in the even numbered positions. It then multiplies the sum of the digits in odd-numbered positions by 3 and adds that amount to the sum of the digits in even-numbered positions. The formula below shows the odd numbers in the first bracket and the even numbers in the second bracket.

From the barcode above, we come up with a final total of 23.

We then subtract the answer from the formula (23) from the next highest number that is a multiple of 10. In this case the next number that is based on Remember BEDMAS. It is the order of operations in math. Anything in brackets is done first 3 X (0+1+0+0+2+1)+(5+0+0+1+5) = 3 X (4) + (11) =12 + 11 = 23 = 23

ten is 30. To get the module check character the computer will take 23 from 30 and get 7 (i.e. 30-23= 7).

We now know we have read the barcode correctly.

This may seem very complicated. The computer, however, can read and do these many calculations quickly. We do not need to do the math ourselves because the scanner will read the lines and spaces and make them into information the computer can read. The computer will then do the calculation. If everything is correct it will use the barcode.

Barcodes are used throughout a warehouse to track the movement of goods. The computer can track goods as they come in and go out of the warehouse. Once the items are ready to be shipped, they are loaded on truck and the computer system will then remove the barcode for all its inventory lists and indicate that the item is now in shipping. The shipping company will now track its shipments in a similar manner.

Limits to Barcodes?

Barcodes can hold a large amount of information and can be used to track many goods. Even so, the number of lines and spaces on bar codes is finite. This means that there is a physical limit to the number of spaces and lines that can be included in a barcode, and therefore to the numbers of the barcode itself. In turn, this limitation has led to barcodes becoming less common for some uses that need more information. Some manufacturers have started to put multiple barcodes on goods in order to display all the necessary information.

Some people tried to improve on the barcode with new technology that is better able to track and organize materials. This technology has been used by a number of companies to improve their logistics.

Quick Response Code (QR)



This is a two-dimensional barcode system, originally developed by a car company

to track vehicles during manufacturing. It has been adopted by ISO and now has become a global standard for storing product information.

ISO means the International Standards Organization

They have a square appearance because information is stored both vertically and horizontally. That is the information goes from left to right like a barcode, but all so up and down. Since information goes both directions QR codes can hold more information than barcodes. QR codes can store thousands of alphanumeric codes. Alphanumeric comes from the words alphabet and numbers. An alphanumeric code is one that has letters and numbers. Eg., a234ab.

How They Work

QR codes work by using algorithms. All the small boxes that make up the code are given specific uses. They include several basic patterns:

- Find Pattern: This helps scanners know the barcode's position.
- Alignment Pattern: This predicts and allows for possible changes on the code that might affect the reading, as when the code has been stretched or physically damaged. It helps the computer to read and better "understand" the data.
- Timing Pattern: This reads the symbols and gives information about module coordinates.

- Quiet Zone: This helps in easier symbol detection.
- Encoding Region: This is where the code stores and moves the data.

As you can tell, more is stored on these small squares than meets the eye. When these are scanned the data can tell the computer to begin an event. For example, if you scan one on your smartphone, it might bring you to a website.

QR Advantages

There are a number of advantages of using QR codes.

- They are smaller. This means they will not block a product-name or logo.
- They are easier to access, since they are read horizontally or vertically.
- You do not need a scanner to read them. Anyone can download a free app to a smartphone and scan these types of codes.
- QR codes also contain much more information than regular barcodes do. A QR code can encode over 4000 characters of information. Some basic barcodes can store as little as 20 characters.
- The QR code is more flexible than a barcode. Unlike a regular barcode, they hold enough data for picture files to be imbedded into them. If you scan a QR code that contains a picture it will be transfer directly to your computer or phone. This is useful to add logos or other pictures along with the usual data.
- More detailed information can be given about the product itself. This could be information about its condition, manufacturer's information, location, etc.
- Even if the QR code is covered, it can be decoded.

What is the difference between Barcodes and QR Codes?

- Both barcodes and QR codes are ways of storing information that can be retrieved by optical scanner.
- Barcodes store information from left to right only, whereas QR codes store information up and down as well as left to right.
- QR codes have a larger space for storing information than barcodes.
- Barcodes can only store alphanumeric data. QR codes can store alphanumeric data, other symbols, pictures, voice, and other information.
- QR has no data correction. Barcodes do have data correction.

• Barcodes depend on the database. QR code is independent of the database requirements.

Customisation and Error Correction

In some cases QR codes are used by companies because they are made to be read more easily and with fewer errors. The QR code will work even if the packaging or the printed code is damaged or dirty. This feature is often used by companies and it lets them put a small logo or a picture within the code for marketing.

While barcodes have been around since more than a few decades, QR codes are more recent.

Most logistics companies continue to use and improve the older barcode technology because it can be used with a database. This means that information can be tracked by computers in a way that can be used by the people moving goods. This means that orders can easily be matched with the flow of goods. Rather than QR codes, many logistics departments and companies are adding RFID tracking systems to provide a more seamless flow of goods (and information about goods).

RFID

RFID (radio frequency identification) has been around for decades. To use an RFID system,

RFID tags must be attached to items, boxes or pallets. Tags vary greatly in size, shape and capabilities, but one example is pictured.



The RFID tag has a small antenna that emits a radio frequency signal. This is picked up and read by a special wireless RFID reader. The data on the tag is sent by the RFID reader to the computer, which then uses the data for tracking.

RFID can be use for many of the same uses as barcodes. RFID is very useful in places where huge quantities of goods must be moved or tracked. It is also useful when it is necessary to track item-specific information. For this reason, some companies and governments have required logistics companies to use RFID when moving their goods. It helps to track the large number of goods that customers need in their supply chains and gives much more detailed information. In these cases, RFID maybe able to communicate the necessary information more quickly, effectively and efficiently than barcodes.

Many companies will now use RFID in combination with barcodes throughout a warehouse.



For example, RFID might be used as pallets are unloaded at the dock. Then, as the items are loaded on to pallets and moved by pallet drivers to their locations in the warehouse, they might be tracked using the internal barcode system. When Selectors gather customers' orders, they might also use the internal barcode

system. Finally, when pallets are loaded the RFID system might track the outflow of goods. This would give companies a clear idea of the when and how goods flow through the whole process.

RFID is also used to increase automation in a warehouse. It allows for computers to track goods without the need for workers to use a scanner.



Learner Activity #1:

Note to facilitator

The Learner Activities #1, #2, and #3 will require the use of a scanner which can scan directly onto an Excel worksheet.

Scanners can be purchased for a reasonable cost from a local business supplier or by downloading a scanning app for phones or tablets. This app allows the camera on these devices to be used as a scanner.

To download the app search for Scan-IT to office. Download this app to the phone or tablet.

- 1. Open a blank excel workbook, select insert on the ribbon.
- 2. Click on Get Add-ins and a box will open allowing you to brows for the Scan-IT app.
- 3. Click on the Scan-IT add-in. Click on it and a box will open on the right side of your worksheet. Select add a phone and a QR code will appear. Scan this QR code with the phone or tablet and that device will be added to the list of configured phones. The device is ready to be used to scan.

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Before this activity can be started the facilitator must prepare a number of products with bar codes.

Select a variety of items found in your office or classroom. Preferably chose 10 to 15 items. For example, pens, dry erase pens etc. You will need approximately 10 to 20 of each item. If the items do

not have barcodes use the provided barcodes. There is a sheet of barcodes included at the end of the unit titled 'Barcode Sheets'. This file contains 40 barcodes that you can use to label products. Photocopy this sheet to create as many barcodes as you need.

It is likely that many items will already have barcodes. If so, you can simply scan the barcode on the item.

Open a new Excel file:

- 1. Label worksheet #1 Practice Master List.
- 2. In cell A1 put the title (Practice Master List)
- 3. In cell A2 type Barcode Number
- 4. in cell B2 type Product, an in cell C2 Cost.

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Ensure you have selected A3 and scan one of each of the products. Your cursor will automatically move down to the next cell below. Once you have scanned a sample of each barcode select cell B3. Work your way down row B and enter product name that matches each barcode. In the C row enter a cost for each product.

Open three more worksheets and label them Activity #1, Activity #2 and Activity #3 respectfully. Save this excel file as 'Scanning Activities'. Each participant will need a copy of this excel file on the computer as they work their way through practice activities #1, #2 & #3.

Your final Excel worksheet should look similar to the picture below.

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10	c21100086	Gift Bags	2.00				
11	e065800662032	Exercise Books	3.00				
12	e063652000804	Box of Crayons	3.00				
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Sample Barcodes:













Activity #1

Learner Activity #1: Using a Scanner

Using a scanner, scan at least 10 barcode number into an Excel worksheet. This will require a computer with Excel software, a copy Sample Barcodes, and a portable scanner provide by your instructor.

Learner Activity #2: Scanning to Excel

This is a practice activity that will have you use the scanner and an Excel formula to create a product list with prices and totals. At the start of this exercise your instructor will provide and Excel file that you will use through out the activity.

- 1. Open the 'Scanning Activities' Excel file you have been given
- 2. Open the worksheet titled Activity #1
- 3. In cell A1 give your company a name
- 4. In cell A2 type 'Barcodes'
- 5. In cell B2 Type 'Product Names'
- 6. Title cell C2 'Cost'
- 7. Adjust the width of your columns so the words fit
- 8. Connect your barcode scanner to the laptop
- 9. Open cell A3 and use the barcode scanner to scan at least 30 products
- 10. Adjust your column widths, if needed

The first worksheet, which is titled Practice Master List is your reference file. Open this Master list and look at it. You will see it has a list containing one of each product, its name and how much it costs.

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1	Pr	actice Master List					
2	Barcode Number	Product	Cost				
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4	c21100024	Writer's Voice Books	2.00				
5	c21100031	Dry Erase Pens Black	0.50				
6	c21100048	Dry Erase Pens Blue	0.50				
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9	c21100079	Green File Folders	0.50				
10	c21100086	Gift Bags	2.00				
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12	e063652000804	Box of Crayons	3.00				
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Introduction to Microsoft Excel

We all deal with numbers in one way or the other. We all have daily expenses which we pay from our monthly income. To spend wisely, for example, we need to know income vs. expenditure. One of the most common programs that is used to track numbers in this way is Microsoft Excel. It is very useful for recording, tracking, storing, organising and analysing numerical data.

Excel is a very large software program with thousands of features and menu options. It seems very confusing when you first begin. But once you learn how to navigate Excel and access some of the common features of the program, you will be able to use it on the job when needed.

How to Read a Worksheet

Microsoft Excel is a spreadsheet program that is used to record and analyse data. Think of a spreadsheet as a collection of columns and rows that form a table:

- Letters are usually assigned to columns
- Numbers are usually assigned to rows
- The point where a column and a row meet is called a cell
- The address of a cell is given by the combination of a letter and number representing the space on the spreadsheet

- Cell address Formula bar box (A1) fx A1 -> \checkmark \sim С D Е G н F В * 1 2 3 Column letters Row numbers 4 5 6 7 8 9 10 Collection of rows and columns forming a spreadsheet (looks like a table)
- All the cells (columns and rows) together make a worksheet

For example, the first column on the sheet will be called A and first row on the sheet will be called 1. This makes the first cell A1. All the columns and rows follow the same pattern. This means that every cell in the spreadsheet has a different name that you and the computer can identify.

Files in Microsoft Excel are called workbooks.

When you open a new Excel file you will see a title bar at the very top of the screen. The title bar of a new workbook/spreadsheet will automatically be named book 1-Excel.

To Begin the Excel Program

Click on the start button at the bottom left hand corner of your screen. It should look like this:



When you open Excel, this is how it looks.

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There are 5 important areas that you can see in the picture above.

1. Quick Access Toolbar:

This is where all the important tools can be placed. When you start Excel for the very first time, it has only 3 icons (Save, Undo, Redo). But you can add any feature of Excel to the Quick Access Toolbar so that it is easily available for you to use.

2. Ribbon:

The ribbon is like an expanded menu. It depicts all the features of Excel in easy to understand form. Since Excel has thousands of features, they are grouped into several ribbons. The most important ribbons are Home, Insert, Formulas, Page Layout, and Data.

3. Formula Bar:

This is where any calculations or formulas you write will appear. You will understand the relevance of it once you start to make formulas.

4. Spreadsheet Grid:

This is where all your numbers, data, charts, and drawings will go. Each Excel file can contain several sheets. But the spreadsheet grid shows only a few rows and columns at a time. It only will show you an active sheet that you are putting in data. You can see the sheet name in the picture above near the bottom of the screen. It is called Sheet1.

To see more rows or columns you can use the scroll bars to the left or at the bottom. If you want to access other sheets, just click on the sheet name at the bottom of the active sheet.

5. Status bar:

This tells us what is going on with Excel at any time. You can tell if Excel is busy calculating a formula or saving a document just by looking at the status bar. The status bar also shows quick summaries of selected cells (count, sum, average, minimum or maximum values). You can change this by right clicking on it and choosing which summaries to show.

Why Use Excel?

Handling Data is one of the major reasons to use Excel. Excel can store and manage thousands of individual pieces of data with ease because it is in a grid form. Built in features like copy, paste, find, highlight, and styles make the process of maintaining data very easy.

Practice Spreadsheet

Imagine you have a small business and you just want to record a few sales figures for the first month of the year, and then create a small chart.

- 1. Start by putting in the title of the business. Call the business 'XYZ Limited'
- 2. Identify what the spreadsheet is about: XYZ Limited Monthly Sales. Type this in cell A1 and tap the enter/return key and move down to the next row.
- 3. Next, label the columns first. Put in the first three months of the year. Type the month at the top of the column. You could type the three months in manually, but Excel has a nice fill feature. Type January in cell B2. Do not press enter! Instead, put the mouse point at

the bottom of cell B2 and drag it across the next two cells. Excel automatically puts February and March in the next two cells.

- 4. Down the side of the spreadsheet put details about what you are selling. To keep it simple, use Sweets, Chips and Pops.
- 5. Next, put some random sales figures in to represent each of the items sold each month. For practice they can be any number. For example, in Cell B3 type 293. This means we sold 293 Sweets in January.

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3	Sweets							
4	Chips							
5	Pops							
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- 6. Once you have added numbers to columns B, C, and D the totals for all the months can be calculated.
- 7. Under pops add a new row and name it totals. Then move across to the next cell. Select all three cells (B5, C5, and D5) and press the Auto Sum (∑) symbol in the home tab. This will automatically fill in cells C5 and D5.

8. Next, calculate the total number of each product and the total of all the products together. Start by typing 'Totals' at the top of column E (cell E2). Highlight by clicking on the left mouse button and dragging your mouse over cells E4, E5, and E6. Press auto sum. The chart is complete and should look like the following picture:

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1	XYZ Limite	d - Monthly	/ Sales							
2		January	February	March	Totals					
3	Sweets	293	250	306	849					
4	Chips	481	399	427	1307					
5	Pops	627	555	630	1812					
6	Totals	1401	1204	1363	3968					
7					L,					
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This table of numbers may be difficult to read. It is hard to tell the title and the headings from the data. To make it more interesting:

- 1. Put a title across the whole table and centre it. Select all the cells (to the very end of the active data) the title will go on top. Remember that if you scroll left and right the spreadsheet will keep showing blank columns and rows that do not have data. These are inactive and you will not want a title on top of them. Cells are not considered active until data is entered into them.
- Once these cells are highlighted, click the 'Merge & Centre' button. The cells will merge and centre the text in the middle automatically.
- 3. To make the title noticeable you can make it bold. This will make the text darker and easier to see compared to the other text. Double click on the title and then highlight it. The picture below shows the 'bold' bu

on the title and then highlight it. The picture below shows the 'bold' button in the menu and the title.





- 4. To make all labels bold, select the row of months (row 3) and the column with the totals (Column E) and press bold. Then do the same with the product names and totals.
- 5. Separate the title from the chart by adding a row. This will make the title easier to read. Right click on the number 2 at the very left of the sheet. Remember, these numbers are the rows on the spreadsheet. Once row 2 is highlighted, select insert. A new row is created, and the chart moves down a row.



6. Put a border around the chart and lines between the rows and columns. Highlight the chart by clicking the left mouse button and dragging the selector over the rows and columns that have data, including the titles. On the home tab, click on the 'Borders' icon. In the drop-down menu select 'All Borders'.

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7. To make your chart easier to read, centre all the numbers by highlighting them and selecting the 'centre' button within the alignment section of the ribbon.



8. While the numbers are highlighted turn them all into dollar amounts by selecting the dollar sign (\$) in the 'Number' section of the ribbon.



9. The chart should look like this:

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4	Sweets	\$	293	\$	250	\$	306	\$	849			
5	Chips	\$	481	\$	399	\$	427	\$	1,307			
6	Pops	\$	627	\$	555	\$	630	\$	1,812			
7	Totals	\$	1,401	\$	1,204	\$	1,363	\$	3,968			
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10. If there is a mistake anywhere on the spreadsheet, just correct the individual number and all corresponding cells will be corrected.

Date and Time Formats

Dates and Inventory

When dealing with products in a warehouse it is important to understand how the inventory is controlled.

The most common inventory control method is referred to as FIFO (First In First Out). Products are distributed in order of their arrival in the warehouse. As discussed in Unit #2, the **first** products **in** are the **first** products **out**.

All products will be marked with a time- and/or date-stamp when they arrive in the warehouse. When the products are stacked on the shelves and/or picked to be distributed then employees must read these stamps and use the products in the correct order. Attention to detail at this time is important to ensure products are used at the correct time.

Format

The way we write dates and times are not universally accepted. Wherever you end up working be sure you understand the systems used. Even within one warehouse there may be different systems within different departments. Ask if you don't know!

Once you have determined the date format it is important that you understand how to put dates in chronological order. Below are listed several date formats, in which the following abbreviations apply:

Y	=	Year
MM	=	Month
DD	=	Date
ΗH	=	Hour
mm	=	Minutes
D 1		

Below are examples of February 24, 2020 in a variety of formats:

DD/MM/YYYY	24/02/2020
DD/MM/YY	24/02/20

MM/DD/YYYY	02/24/2020
MM/DD/YY	02/24/20
YYYY/MM/DD	2020/02/24
YY/MM/DD	20/02/24
YYYY/DD/MM	2020/24/02
YY/DD/MM	20/24/02

Time

The 24-hour clock is the convention of timekeeping in which the day runs from midnight to midnight and is divided into 24 hours. It is indicated by the hours passed since midnight, from 0 to 23. This is the most widely used time notation in the world and is the international standard.

A time of day is written in the 24-hour notation in the form hh:mm (for example 01:23), where hh is the number of full hours that have passed since midnight_(00 to 23), and mm is the number of full minutes that have passed since the last full hour (00 to 59).

When writing the hours, a leading zero is often added for numbers under 10. The leading zero is very commonly used in computer applications and forms. Always use it when it is required.

Leading zero means the 0 before another number. With a leading zero you would write the number one as 01.

In the 24-hour time notation, the day begins at midnight, 00:00, and the last minute of the day begins at 23:59. Where convenient, the notation 24:00 may also be used to refer to midnight at the end of a day. The 24:00 of one day is the same time as 00:00 of the following day.

Below are some examples of time notation written in the 12-hour format and the 24- hour format:

12 Hour Notation24 Hour Notation7:00 AM07:00

9:45 AM	09:45
1:50 PM	13:50
4:10 PM	16:10
7:05 PM	19:05
8:55 PM	20:55
10:00 PM	22:00
11:59 PM	23:59

Hint: To convert from the 12-hour time format, just add 12 hours and that will give the 24-hour format. For example, if it is 4pm add 12 hours (4 + 12 = 16) to get the 24-hour time. It would be 16:00

Date and Time

When inventory is entering and leaving a warehouse in high volume it may require a combination of a date- and time-stamp. The date is usually first and the time is directly after it.

2019-03-21 18:40 A product with this code entered the warehouse on March 21, 2019 at 6:40 pm.

Learner Activity #1: Time/Date Practice

Put the following dates in order, oldest to newest:

06/24/2019	
01/10/2020	
12/05/2019	
02/13/2019	
03/21/2019	
08/02/2019	
01/11/2020	
02/02/2020	
01/26/2020	
02/04/2019	

Change the following times to the 24-hour clock:

2:15 pm _	
7:00 am _	
9:45 pm_	

11:25 am _____

9:45 pm _____

Put the following times in order of the day, morning to night:



Put the following dates/times in order:

2020-01-09 00:23	
2020-01-24 22:03	
2019-05-01 23:51	
2019-06-15 15:20	
2019-11-13 14:51	
2019-02-24 00:04	
2020-01-09 20	
2019-11-13 22:52	
2020-11-30 14:49	
2019-11-01 08:52	





Vocabulary List

Accurate: free from error or defect, precise, exact.

Active listening: a skill that allows the listener to interact with the speaker more effectively by paying close attention to the conversation.

Aggressive: boldly assertive and forward; pushy.

Algorithms: a set of rules for solving a problem in a finite number of steps.

Alphanumeric: part of a set of characters that includes letters, numbers, and, often special characters, such as punctuation marks.

Allocate: to set apart for a particular purpose; assign.

Assertive: to be sure of oneself; having no uncertainty about one's own abilities, bold.

BEDMAS: is the order of operations in Math - brackets, exponents, division, multiplication, addition, subtraction – do anything in brackets first.

Communication: the exchanging of thoughts, opinions, or information by speech, writing, or signs.

Constructive criticism: a discussion or comment that is useful and helpful rather than negative and unhelpful.

Customer: a person or organization that buys goods or services from a store or business.

Distribution: the network between a company and its suppliers to produce and distribute product to the final buyer.

Diverse: of a different kind, form, character, etc.; unlike.

Ergonomics: the study of the relationship between workers and their environment.

FIFO: First in/ First out: what comes in first will be handled first; what comes in next waits until the first one is finished.

Finished product: the product that emerges at the end of a manufacturing process.

Finite: having bounds or limits; not infinite; measurable.

Flexible: able to be easily modified to respond to altered conditions.

Incentive: a reward offered for increased productivity.

Inventory: a complete list of merchandise or stock on hand.

ISO: International Standards Association.

Logistikas: Roman and Greek military officers who supplied and distributed resources to the army.

Logistics: the planning, implementing and control of the movement and storage of goods.

Manufacture: to make something on a largescale using machinery.

Marketing: the action or business of promoting and selling goods.

Maximize: to make the greatest or fullest use of.

Metrics: the measurement used to track efficiency, performance and progress. For example, the number of tasks done every hour is a metric.

Mnemonic: something to help the memory, like a verse or formula.

Morse Code: either of two systems of clicks and pauses, short and long sounds, or flashes of light, used to represent the letters of the alphabet, numerals, etc.

Modulo Check Character: The series of numbers used in a certain order in UPC barcodes to identify if the barcode is right side up or upside down. Musculoskeletal: the muscles, bones tendons and nerves working together to help the body move. **Organization:** an organized body of people with a particular purpose, especially a business.

Perception: understanding.

Pinch Grip: a grip that holds an object on one side using the thumb and the rest of the fingers are placed on the other side of the object.

Power grip: a grip that uses the muscles of the hand and forearm.

Power zone: refers to the best part of your body to use for lifting; it is close to your body between the mid-thigh and mid-chest of the person lifting. You get the most power with the least amount of work.

PPE: Personal Protective Equipment.

Purchase: acquire something by paying for it

Quality Control: a system of maintaining standards in manufactured products by testing a sample of the output against the specification.

Raw materials: the basic materials from which a product is made.

Refurbish: to restore or renovate for reuse.

RFID: Radio frequency identification.

Self awareness: refers to being aware of your personality and your characteristics as an individual.

Supply chain: the action of supplying goods to stores or other businesses that sell to customers.

Technology: the application of scientific knowledge for practical purposes in industry.

Warehouse: a building, or part of one, for the storage of goods, merchandise, etc.

Definitions adapted from: <u>www.businessdictionary.com</u> <u>www.collinsdictionary.com</u> <u>www.dictionary.com</u>