

Pendle Hill High School

Assessment Task Cover Sheet

Faculty/Subject:	TAS/ Industrial Technology Timber	Assessment Task No:	2
Year:	12	Assessment weighting:	15%
Date Given:	5/2/2020	Due date and time:	9/4/2020 3:00pm
Student name:		Teacher:	Mr. McGuinness

Submission Instructions

- The task must be completed by the due date. Hard copies must be handed to your regular classroom teacher during school hours and signed for.
- Email submissions must be sent to the following email account:
- Assignments received after **3:00pm** on the due date will be classed as a late submission, unless an alternate time is stated on the assessment cover sheet.
- Students must attend school and all scheduled classes on the due date of the assessment. See assessment handbook for details.

Absence/Late Submission

- Late submission:**
- For students in Years 11 and 12, the penalty is zero for work submitted after the due date and time. An immediate N award warning letter will be mailed to parents.
 - For students in Years 7, 8, 9 and 10 the penalty is 20% of total mark per day (not marks scored). The penalty includes weekend and public holidays. This will result in an N award warning letter being mailed to parents for Year 9 and 10 students.

- Absence:**
- **Year 11 -12** - you are required to complete and submit to the front office an **Assessment Appeal form** within 48 hours of returning to school.
 - **Year 7 -10** - if you are absent from school on the day the task is to be completed, you are required on your return to school to provide a medical certificate or other documentation to the front office and your class teacher.
 - Failure to provide adequate documentation will result in late submission penalties being applied.

Student Confirmation - please tick

- This is all my own work. I have referenced any work used from other sources and have not plagiarised the work of others. I understand that plagiarised work will receive zero marks and an N award warning letter.
- I have attached a complete bibliography - where appropriate.
- I have kept a copy of my assignment.

Student Signature: _____

Assessment Task Receipt

Students are to complete before handing in. Teacher signs the receipt that must be kept by the student.

Student Name: _____ Subject: _____

Task No: _____ Due Date: ____/____/____ Date submitted: ____/____/____

Student Signature: _____ Teacher Signature: _____

Unit: Industry Study

Task No: 2

Weighting: 15%

Date Due: Wk 11, Term 1, 2020 (9/4/2020)

Outcomes:

H1.1 Investigates industry through the study of businesses in one focus area

H1.3 Identifies important historical developments in the focus area industry

H7.1 Explains the impact of the focus area industry on the social and physical environment

H7.2 Analyses the impact of existing, new and emerging technologies of the focus industry on society and the environment.

Task Description

Overview and Context of the task.

This task is designed to identify what you have learnt whilst undertaking an Industry Study within the HSC course. Through the completion of this task you will be able to build upon your knowledge of the effects and administration aspects of an Industry area.

Presentation Requirements and Arrangements for Submission

You are to submit the assessment booklet digitally through the google classroom attached to the Assessment 2 link "Industry Study Assessment".

Elements of the Task

You are required to individually complete the digital workbook by the due date and submit by 3:00pm on the 9th of April 2020.

Marking Guidelines:

Syllabus Outcomes	A student in this range:	Marks
H1.1 Investigates industry through the study of business in one focus area. H1.3 Identifies appropriate equipment, production and manufacturing techniques and describes the impact of new and developing technologies in industry.	<ul style="list-style-type: none"> • Demonstrates a wide range of presentation skills and communication techniques including appropriate ICT. • Critically evaluates a business in industry. • Comprehensively analyses the impact of existing, new and emerging technologies of industry on society and environment. • Thoroughly investigates and explains the impact of industry on the social and physical environment. • Clearly describes appropriate equipment, production and manufacturing techniques and their impact on industry. 	Excellent 100-80
	<ul style="list-style-type: none"> • Demonstrates a range of presentation skills and communication techniques including appropriate ICT. • Evaluates a business in industry. 	High 79-60

Responsibilities Respect Rights Learning

<p>H7.1 Explains the impact of the focus area industry on the social and physical environment.</p>	<ul style="list-style-type: none"> Analyses the impact of existing, new and emerging technologies of industry on society and environment. Investigates and explains the impact of industry on the social and physical environment. Describes appropriate equipment, production and manufacturing techniques and their impact on industry. 	
<p>H7.2 Analyses the impact of existing, new and emerging technologies of the focus industry on society and the environment.</p>	<ul style="list-style-type: none"> Demonstrates a range of communication techniques including appropriate ICT. Describes a business in industry. Proposes the impact of existing, new and emerging technologies of industry on society or the environment. Explains the impact of industry on the social or physical environment. Outlines appropriate equipment, production and manufacturing techniques and their impact on industry. 	<p>Satisfactory 59-40</p>
	<ul style="list-style-type: none"> Shows basic ICT skills. Names a business in industry. Proposes the impact of existing, new and emerging technologies of industry. Explains the impact of industry. Outlines equipment, production and manufacturing techniques in industry. 	<p>Developing 39-20</p>
	<ul style="list-style-type: none"> Little evidence of ICT skills. Identifies aspects of industry. Provides limited impact of industry. Appropriate research not evident. 	<p>Elementary 19-0</p>

Marking Guide:

Outcome/ Criteria	Outstanding	High	Sound	Basic	Limited	0
H1.1 Investigates industry through the study of businesses in one focus area						NOT ATTEMPTED
H1.3 Identifies important historical developments in the focus area industry						
H7.1 Explains the impact of the focus area industry on the social and physical environment						
H7.2 Analyses the impact of existing, new and emerging technologies of the focus industry on society and the environment.						

Feedback

COURSE COMPONENT(S): Industry Study

NOTIFICATION DATE: 5/2/2020

TASK# 2

WEIGHTING: 15%

DATE DUE: Thursday 9th April 2020 (Week 11)

OUTCOMES ASSESSED:

H1.1 Investigates industry through the study of business in one focus area.

H1.3 Identifies appropriate equipment, production and manufacturing techniques and describes the impact of new and developing technologies in industry.

H7.1 Explains the impact of the focus area industry on the social and physical environment.

H7.2 Analyses the impact of existing, new and emerging technologies of the focus industry on society and the environment.

TASK DESCRIPTION:

You are to investigate and submit a word processed industry report by reading the following information and answering the supplied activities. These are identified with the title "**Activity #**"

Industry Study:	2
The NSW Department of Industrial Relations	4
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Industry Study:

Environmental Impact Study (EIS)

An environmental impact study (EIS) is the detailed study of the potential effects of a designated development on the local environment. Environmental impact studies should assess the existing site and conditions and evaluate the anticipated impacts on the flora, fauna, economy, historical and social factors of the new development.

All high impact developments require an EIS, for example, agricultural produce industries, electrical generating stations, marinas and other shoreline facilities and wood and saw milling works.

An EIS is important to avoid damage to a local area in terms of its ecology, air and water quality and to ensure long-term sustainable, minimal impact development.

The Environmental Planning and Assessment Act 1979 (NSW)

http://www.austlii.edu.au/au/legis/nsw/consol_act/epaaa1979389/s110.html Details the guidelines and directions for carrying out an EIS, and one excerpt states:

"a determining authority must consider the effect of an activity on: critical habitat, and in the case of threatened species, populations and ecological communities, and their habitats, whether there is likely to be a significant effect on those species, populations or ecological communities, or those habitats, and any other protected fauna or protected native plants within the meaning of the National Parks and Wildlife Act 1974"

In the past, some high profile developments have attracted media attention, for example, the Homebush Bay site for the Sydney 2000 Olympic Games and the Ranger uranium mine at Jabiluka in the Northern Territory. Quite rightly, concerns are raised as to the impact these types of large developments will have, both in the short and long-term.

Personnel Issues

Equal Employment Opportunity

Equal employment opportunities and equity issues in the workplace are important issues that need to be considered in all focus areas. Go to the NSW government Equal Employment Opportunity website (<http://www.psc.nsw.gov.au/Sector-Support/EquityandDiversity>) and read about Equal employment opportunity, Eliminating discrimination and your rights and responsibilities.

Activity 1

Some phrases and words have been omitted. From your reading of the information in relation to equal employment opportunity, complete these statements.

EEO is about:

- making sure that
- providing

This means having workplace ... , and that are fair and do not disadvantage people because they belong to particular groups.

In such an environment, all workers are valued and respected and have..... to develop their full potential and pursue a path of their choice.

EEO groups are people affected by past or continuing disadvantage or discrimination in employment. As a result they may be more likely to be unemployed or working in lower paid jobs. What are the four EEO groups?

EEO is designed to achieve the following outcomes:

- a and skilled workforce
- improved employment access and participation by
- a workplace culture displaying fair workplace and behaviours.

Activity 2

Fair practices and behaviour

EEO aims to achieve fair practices and behaviour in the workplace, including:

- recruitment, selection and promotion practices which are
- access for all to training and development
- flexible working arrangements that meet the needs of and create a workplace
- grievance handling procedures that are to all employees and deal with workplace promptly, confidentially and fairly
- communication processes to give access to information and allow their views to be heard
- decisions being made without bias
- no unlawful discrimination or in the workplace
- respect for the social and cultural of all employees and customers.

Activity 3

Eliminating discrimination

Discrimination is treating someone unfairly or harassing them because they belong to a particular group. Under the *Anti-Discrimination Act 1977(NSW)*, it is against the law in NSW for any employer, including the Government, to discriminate against an employee or job applicant.

What are the nine groups mentioned in the legislation against whom discrimination is not allowed?

This is the law in most cases. (There are a few exceptions, e.g. sometimes employers get permission to fill a job with a person from a particular group.)

Both direct and indirect discrimination are against the law.

Direct discrimination means treatment that is obviouslyor For example, if an employer won't hire someone just because they are a woman this is likely to be direct discrimination.

Indirect discrimination means having a requirement that is the same for everyone but has an effect or result that is to particular groups. For example, not considering an employee's overseas skills and training when determining his or her level of pay can constitute indirect race discrimination.

It is the responsibility of every to help prevent unlawful discrimination in their workplace.

Sociological Effects of Industry

When an industry affects the physical or emotional wellbeing of people in an area these are referred to as the sociological effects. Sociological effects can be things that have a positive effect on people as well as those things that are negative.

Some positive sociological effects include a boost in community morale when new work opportunities are offered by an industry, the provision of subsidised housing and support for community projects

Some negative sociological effects include noise pollution that affects sleep, effluents that have an impact on health, restructuring decisions that affect employment levels, job security, and career paths.

The NSW Department of Industrial Relations

The NSW Department of Industrial Relations has a significant role in developing effective and workable industrial relations in this state. In summary, the history of the NSW Department of Industrial Relations is as follows.

Year	Process
1892	The Department was first established under the name of the State Labour Bureau of NSW. It's function was to find work for the unemployed and ease the rapidly growing social problems of the time.
1895	The Bureau became a branch of the Department of Public Works. Its role was to supply labour and develop and construct government buildings.
1911	The Department of Labour and Industry was constituted to administer legislation relating to working conditions.
1979	The Department was renamed the Department of Industrial Relations and Technology.
1980	The Department was renamed the Department of Industrial Relations.
1986	The Department became known as the Department of Industrial Relations and Employment as a result of an amalgamation with the Ministry of Employment.
1990	The renamed Department of Industrial Relations, Employment, Training and Further Education reflected the focus on vocational education and training.
1995	Department of Industrial Relations.

Activity 4

Visit the [NSW Department of Industrial Relations](#) web site click on *aims and objectives* and answer the following question.

What is the mission of the Department of Industrial Relations?

As part of this mission the Department of Industrial Relations is responsible for working conditions, employment rights and obligations for employers and employees in NSW.

The main functions of the NSW Department of Industrial Relations (DIR) may be summarised as follows:

- manage NSW employment legislation

- make sure all provisions within awards are carried out
- communicate with employers, employees and industrial organisations on all matters relating to conditions of employment
- advise government on employment issues.

To enable the Department to function effectively it is divided into a number of sections. These sections are:

- Workers Compensation Resolution Service which deals with workers compensation matters
- Building and Construction Industry Long Service Payments Corporation that deals with financial matters associated with long service provisions.
- Office of the Director-General
- Legal Services which provides legal advice to the policy and operational areas of the DIR
- Business Development and Support that is responsible for administration, information technology and employee services
- Operations that provides industrial relations advice and assistance to employees and employers.

The Operations section has two major sub sections:

- Workplace Reform which provides advice on industrial entitlements change
- Compliance which enforces industrial laws in NSW. Compliance deals with industrial complaints, disseminating information, prosecutions to ensure compliance with NSW's industrial laws
- Policy and Equity which implements and promotes the NSW Government's industrial relations agenda
- Workplace Services Division which coordinates the delivery of strategic industrial relations information services and advice
- Business Development and Support Division.

The Industrial Relations Commission

The Industrial Relations Commission is part of the New South Wales Attorney General's Department. The Commission is established in a court session, and has the equivalent status to the Supreme Court. The Commission operates under the *Industrial Relations Act 1996* and its role is through the legal system to:

- resolve industrial disputes
- establish working conditions
- set wages and salaries through industrial awards
- approve enterprise agreements
- arbitrate claims of unfair dismissal.

Visit the web site for the Industrial Relations Commission at [Industrial Relations Commission](#) ► to read about its purpose and function.

Industrial Award

An industrial award is an agreement between employers and employees on the rights and obligations for all those involved in a specific type of work. It is most commonly negotiated by organisations representing employers and organisations representing employees (unions). These organisations either apply to the Commission to have an award prepared or develop an award through the resolution of an industrial dispute.

Awards

On 1 January 2010, private sector NSW employers and workers, previously covered by the NSW state award system (mainly sole traders and partnerships), moved into the national workplace relations system administered by the Fair Work Ombudsman. This has resulted in all previous federal and state awards being streamlined into 122 modern awards. These awards now cover all Australian private-sector workplaces. All private sector employers are required to use the appropriate modern award.

To find the modern award that now applies to you go to [Fair Work Online](#) [Fair Work Ombudsman's website] NSW Industrial Relations provides limited award information Transport contract determinations and local government awards are still covered by NSW. You may view these at the below links or [contact us](#).

- [Transport industry](#)
- [Council awards](#)

[Fair Work Online](#) provides information on the 122 modern awards which now cover all Australian workplaces.

Enterprise agreement

An enterprise agreement is also an arrangement between employers and employees on the rights and obligations for all those involved in a specific type of work. It is also negotiated by employers and either organisations representing employees (unions) or employees themselves usually on a specific work site. Agreements may cover some or all of the employment conditions present in an award but they must also comply with NSW laws that provide employment rights and obligations.

Enterprise agreements must have the approval of the Industrial Relations Commission.

Activity 5

Visit the [NSW Department of Industrial Relations](#) web site and click on *awards* and *enterprise agreement*. Use the following table to show the difference between an award and an enterprise agreement.

An award is:	An enterprise agreement is:
The difference between an award and an enterprise agreement is that:	

Activity 6

Visit the [Department of Industrial Relations](#) or <http://www.fairwork.gov.au/awards/how-to-find-an-award/pages/default.aspx> web site. Click on a letter of the alphabet to locate information about an award in your focus area. For example "F" for Furniture Trade. Answer the following question.

For an industry related to your focus area determine the employment conditions from the specific award. Use the following table as a guide.

Condition	Implementation
wage rate	
sick leave	
first aid	
annual leave	
hours of work	

Industry standards - OHS

For industry to operate effectively and efficiently there is a need for certain industry standards to be set. These standards govern the way an industry operates in much the same way as standards for road use (the 'rules of the road') govern how people drive on the roads.

Some standards are developed by industry to assist in the smooth and safe operation of that industry, while other standards are set by government and cover all industries.

One of the most important standards for any industry is government legislation relating to safety in the workplace.

In NSW, the Department of Industrial Relations represents the government in formulating structures relating to Occupational Health and Safety. Correspondingly, WorkCover as a statutory authority has the responsibility for enforcing legislation and providing educational support for the legislation.

The Work Health and Safety Act 2011 aims to protect people at work. The legislation is written in terms of health, safety and the welfare of people in a work environment.

The legislation contains provisions that require the employer to consult with employees on issues of safety, health and welfare. It applies to large and small business and also to the self-employed.

Industry standards may be described in the form of duties and categorised as responsibilities. In the case of Occupational Health and Safety:

1. The responsibilities of the employer include:
 - ensuring that the places of work under their management are safe
 - ensuring that risk management procedures for the safe use, handling, storage and transport of plant materials are established for their workplace
 - ensuring that systems of work and the work environments are safe, without risks to health
 - ensuring that information, instruction, training and supervision is provided to support the safety of employees
 - ensuring the provision of adequate facilities for the welfare of employees.

2. The responsibilities of the employee include:

- taking reasonable care of the health and safety of themselves and others
- cooperating with employers in their efforts to comply with occupational, health and safety requirements.

Breaches of the legislation can result in serious penalties for an individual and the business.

Further information is available at the Department of Industrial Relations web site <http://www.industrialrelations.nsw.gov.au/>, and from the [WorkCover](#) web site.

Activity 7

Go to the WorkCover web site and refer to the document [First aid in the workplace, Guide 2001](#). WorkCover NSW Health and Safety Guide. Answer the following questions:

- a. How would the requirements for first aid differ between work sites?
- b. What effect would the number of persons on a work site have on the employer's responsibility in providing suitable first aid?

Safety training and human factors

In 1998 the WorkCover Authority introduced a code of practice for occupational health and safety induction training.

Induction training can be delivered through a registered education or training provider. The purpose of this training is to standardise safety instruction relevant to the needs of the appropriate work site, ensuring the same expectations for OHS.

It is the responsibility of employers to ensure OHS induction training is undertaken by its employees as they are not permitted to undertake tasks or enter work site areas without having completed this training.

Self employed persons are not permitted to undertake tasks on a work site without having completed safety induction training.

Search the [OHS Regulations 2001](#) from the WorkCover web site and answer the following:

1. What areas must be delivered as part of OHS safety training. (see clause 216-219, chapter 8)?
2. For what length of time are these qualifications relevant?

Answer

An essential part of effectively managing health and safety at work is for the employers and employees to collaborate by consultation. Consultation should be viewed, not just as a legal requirement, but as a valuable means of improving decision making about health and safety.

1. Use a case study that you have studied to examine a means by which the consultation process may be formalised in a business employing some 40 persons of varying experience and qualification. When discussing this process, consideration should be given to the management hierarchy.
2. An OHS committee has been formed with OHS representatives from various levels within a company. Through your study of workplace safety and the need to collaborate, suggest and present a step-by-step process to solve a safety concern.

Materials handling

Occupational health and safety encompasses many areas. People automatically think about the safety of the working environment in terms of the individual and how plant and equipment is positioned and operated. Whilst the work environment is important, it can only be as safe as the materials being used, handled, stored and transformed within it.

Materials handling incorporates the physical materials - how they are transported, and stored. It also includes the processes undertaken in any manufacturing system together with the impact of these processes on the health and safety of the workers.

Hazardous Substances Regulation 1996 provides information about legislation and the implications for personnel, training in risk assessment and information for those working with hazardous materials where risks should be assessed, controlled and recorded. WorkCover assists companies in the development of risk management procedures for hazardous materials.

Material Safety Data Sheets (MSDS) are the basic source for all hazardous materials containing risk and safety information. The MSDS is required under the Hazardous Substance Regulation to be supplied by manufactures and suppliers. The MSDS contains:

- name and address of the manufacturer and or supplier
- contact information in case of emergency
- name of the product, trade, commercial or chemical
- classification with haz-chem code or poisons schedule

Dangerous Goods Legislation provides information regarding storage labelling, licensing and the transport of dangerous goods.

Manual and automated handling

Work-related back injury is the largest area of concern to our medical and insurance system. National data estimates that 95% of injuries in the workplace are preventable and that a reduction of up to 80% can be achieved through risk management.

Further information can be found by reference to:

- [OHS Regulation 2001](#) ▶ , Part 4.4, Chapter 4 on the WorkCover web site

Back and spinal problems occur through the poor design and management of a lifting problem.

List examples of where the risk of back injury is high in an industry related to your focus area. For each example presented, suggest a suitable means of reducing the risk.

[Answer](#)

Workplace culture

Occupational health and safety in the workplace is about ensuring people are aware of the potential dangers and the means of reducing risk. All accidents should be viewed as preventable.

It is the responsibility of the employer to cultivate a safe workplace culture and for the employer and employee to maintain this safe culture.

The formation of an OHS workplace committee offers the opportunity for a collaborative approach to workplace safety where the safe culture of the workplace can be developed.

Activity 5

Case study

A newly employed non-English speaking labourer at Genesis Industries was given a task of cutting templates on a bandsaw from 20 mm thick plywood. During this task, his mobile phone rings and he is distracted by the call. When reaching for the phone the worker slips on the offcuts on the floor. His hand enters the blade, removing a finger.

Identify some factors that led to this accident.

Read the case study above and identify breaches of the OHS Act that led to this persons injury.

1. Outline measures that should have been in place to reduce the accident risk.
2. Design a risk management form based upon that modelled by WorkCover, that could have been used by the company for the above situation.

Marketing and Sales

This unit of work addresses aspects of the following syllabus outcomes:

A student:

H1.1 investigates industry through the study of businesses in one focus area.

H3.2 selects and applies appropriate research and problem-solving skills.

Extract from *Stage 6 Industrial Technology Syllabus @ Board of Studies NSW 2008*.

This unit deals with the broad application of marketing and sales in various industries. It provides opportunities for students to:

- identify and describe various marketing principles used by industry
- identify and understand sales techniques
- understand and use industry related terms.

1. Marketing

"Marketing is the promotion of a product or service by an industry. Marketing concentrates primarily on the buyers, or consumers, determining their needs and desires, educating them with regard to the availability of products and to important product features, developing strategies to persuade them to buy, and, finally, enhancing their satisfaction with a purchase."

Marketing, Microsoft® Encarta. Copyright © 1994 Microsoft Corporation. Copyright © 1994 Funk & Wagnall's Corporation.

It is widely recognised within industry that, without effective marketing and promotion, a company will not survive. Whilst there are many different marketing strategies the development and growth of the Internet has provided companies with a new avenue for marketing their products and services.

Consequently, most companies have developed their own web site which is used as a means of promotion. If the web site is not effective it will be just another "space waster" that no-one knows exists. It can even cost the company money rather than generating income and improving profit.

To turn a web site into a profit making enterprise, advantage needs to be taken of traditional marketing methods such as advertising, but also of "new age" promotional tools which are literally at the fingertips of management.

"E-marketing" is an extremely useful tool and it can easily be done from company computers.

E marketing

Activity 1

Visit the [Wikipedia](#) web site to find out a little about e-marketing and answer the following question. What is e-marketing?

[Answer](#)

Activity 2

Visit the [Wikipedia](#) web site and click on *what is e-marketing* to find out a little about e-marketing tools and complete the following activity.

Briefly describe some key e-marketing tools.

[Answer](#)

The whole purpose of e-marketing is to promote a site online and to make it easy for potential customers to find the company amongst the millions of web sites on the Internet.

One of the real benefits of e-marketing, as opposed to traditional marketing, is that results are virtually instantaneous. In traditional marketing a company has to go through a "trial and test" period to work out what aspects of their marketing strategy works and what doesn't. This can sometimes take months, and it can be costly to continue with a particular marketing strategy that isn't effective.

E-marketing, on the other hand, allows a company to assess reaction to their strategies immediately, and take any appropriate measures

Exhibitions as a marketing tool

Exhibitions are one of the most cost effective marketing methods offering face-to-face contact with thousands of qualified prospective customers. There is compelling evidence for making exhibitions a major focus of any company's marketing mix.

Activity 3

Visit the Diversified Exhibitions web site at <http://www.divexhibitions.com.au/exhibitions.asp> and identify some of the reasons why exhibitions are a successful marketing tool.

[Answer](#)

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2. Sales

It is widely recognised within industry organisations that there is a critical link between profits and the effectiveness of sales people. It is well known that Sales Masters make business soar and that poor salesmanship can close a Company down.

There is a common cliché that "*Selling's a numbers game!*", but in reality up to 70% of accounts are missed, lost or forgotten due to poor planning, ineffective technique or failure to follow through. A dynamic selling skill not only pays dividends to the confidence of the individual but the bottom line of the sales organisation.

In the modern competitive workplace, sales personnel are required to be just more than “good talkers”. Dynamic selling techniques, technical precision and a particular psychological make-up is required of the modern day sales leader.

Mass production and automation are very different concepts in industry.

1. Automation

Automation is the process in industry where various production operations are converted from a manual process, to an automated or mechanised process. Let's assume that a person is operating a metal lathe. The person collects the stock, already cut to size, from a bin. He, or she, places it in the lathe chuck, and moves the various hand-wheels on the machine to create a component; a bolt could be such an item. Once finished the person commences the process again to make another item. This would be a manual process. If this process were automated, a person would place long lengths of bar into the feed mechanism of an automatic lathe. The lathe mechanisms feed the material into the chuck, turn the piece to the correct shape and size, and cut it off the bar before commencing another item. This is an example of an automated machine in a manufacturing process.

It is also possible to automate assembly processes. In this case, several steps in the assembly of the components of an item are carried out automatically. For example, the components of a food container: top, bottom and body, may be formed and assembled into a finished container through the use of mechanised machine processes, instead of being done manually.

Modern automated processes are mostly controlled by computer programs which, through the action of sensors and actuators, monitor progress and control the sequences of events until the process is complete. Decisions made by the computer ensure that the process is completed accurately and quickly.

Through automation, workers are freed from unpleasant, hazardous, repetitive and tedious work. However, automation means that fewer people are required to complete the same amount of work. Also, higher skill levels are required to setup and operate automated machines and this results in the displacement from the workplace of semiskilled and unskilled workers. Displaced workers need to be retrained if they are to retain a place in the workforce. Training in computing, electronics and maintenance systems is now required to replace training in machine skills.

Most Australian industries are now highly automated. This has resulted in many thousands of workers being made redundant or retrained to enter new industries. Examples of industries that have applied automation include the iron and steel industry, manufacturing industries, the automobile industry, service industries, banks and communications.

For further information you could search under “Automation” in the Encyclopaedia Britannica, <http://www.britannica.com/> ▶

Activity 1

From your research into automation answer the following:

1. What are some features of an automated system?
2. List five sociological effects of automation.
3. List some of the industries that have applied automation systems.

[Answers](#)

Automation differs distinctly from mass production, as the following activity will show.

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2. Mass production

Mass production is the large-scale production of goods in factories.

Originally, very small numbers of products were made by craftsmen in home workshops. But, the increasing demand for consumer goods following the industrial revolution, meant that larger numbers of products needed to be manufactured in a more efficient way.

To facilitate the mass production process, organisation of the following factors is necessary.

- A division of labour, where the manufacturing process is broken down into small specialised tasks that each worker carries out over and over again.
- The standardisation of parts across a number of products so that large numbers can be made cheaply and efficiently.
- The development of machinery to perform standardised tasks and produce components.
- The production process needs to be designed to efficiently integrate the machine processes and human tasks.

The best known example of a mass production process was the assembly line developed by Henry Ford to manufacture the Model T Ford in 1913.

Activity 2

Answer the following questions from the article at:

http://ks.essortment.com/movingassembly_rfjh.htm ▶

1. How many hours did it take to produce a complete new car using the assembly line process?
2. Assembly line production was not new in 1903. What was Henry Ford's innovation that sped up production even more?

[Answers](#)

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Mass production has many **advantages** and **disadvantages**.

Advantages include:

- efficiency of production: less time is taken to produce goods
- 'economies of scale': cheaper to make products in large quantities
- workers only need to be trained in one or two tasks.

Disadvantages include:

- boredom for the workers
- occupational overuse syndrome (repetitive strain injury)
- low job satisfaction for workers
- large stock piles of finished goods waiting to be sold
- difficult to change the product's design quickly to respond to changing styles and consumer demand.

These disadvantages have led to a change in direction for manufacturers to try and be more responsive to changes in the marketplace.

The development of 'just in time' (JIT) manufacturing has evolved as an appropriate production technique to address the problems of excess stock and lack of responsiveness by manufacturers, to trends in the marketplace.

Activity 3

Refer to the editorial by Dr David Anderson PE CMC at:

<http://buildtoorderconsulting.com/Mass%20Production.htm> ▶

1. What prevented Ford from responding quickly to emerging market trends?
2. How does JIT differ from producing large quantities of goods that are then stored until sold?
Refer to the article at:
http://www.inventorysolutions.org/def_jit.htm ▶
3. Identify the six purposes of JIT manufacturing.
4. List the seven types of waste that JIT manufacturing tries to eliminate.

Multiskilling

This unit of work addresses aspects of the following syllabus outcomes:

A student:

H1.1 investigates industry through the study of businesses in one focus area

H1.2 identifies appropriate equipment, production and manufacturing techniques and describes the impact of new and developing technologies in industry

H6.2 applies the principles of quality and quality control

H7.1 explains the impact of the focus area industry on the social and physical environment.

Extract from *Stage 6 Industrial Technology Syllabus* © Board of Studies NSW 2008.

multiskilling – *noun* the development of a number of skills from which workers may earn a livelihood.

Source: *The Macquarie Concise Dictionary* (1994) The Macquarie Company.

A more common definition of multiskilling is where labour organisation is structured so that workers possess a range of skills appropriate for use on a project or within an organisation.

A multiskilled worker is an individual who possesses or acquires a range of skills and knowledge and applies them to work tasks that may fall outside the traditional boundaries of his or her original training. This does not necessarily mean that a worker obtains or possesses high-level skills in multiple technology areas. However, the worker can be an effective and productive contributor to the work output of several traditional training disciplines.

Some of the reasons for the introduction of multiskilling include:

- to increase labour productivity
- cater for the declining number of tradespeople and cater for a critical skill shortage
- create a more flexible labour force able to meet challenges, improve project performance and better utilise the current pool of skilled workers
- to utilise labour so that workers possess a range of skills suitable for more than one work process
- develop competency within the workforce and allow full deployment of qualifications across the industry
- assign workers tasks based on their ability to perform the needed skill and not restricted by traditional job descriptions or work boundaries.

Problems that affect multiskilling are both basic and practical. Basic problems are difficult to overcome and include limits on human skill retention and the difficulty of maintaining a multiskilled workforce from a management and financial viewpoint. Practical impediments include the organisational requirements, production management structure, resistance to change, qualifications requirements and the acceptance of multiskilling in both union and non-union work sites.

Activity 1

What is meant by the term, multiskilling?

[Answer](#)

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Advantages of multiskilling

1. **Flexibility**
Workers who are able to perform a large number of tasks can fill in for other workers, increasing workforce flexibility.
2. **Communicatio**
Knowledge of various tasks can increase the understanding of other tasks and improve coordination.
3. **Positive effects on innovation**
The processes of improving design concepts are easier because of the individuals 'multi' knowledge.
4. **Employment security**
A multiskilled workforce is not as threatened if skills become obsolete because of new technology.
5. **Project efficiency**
Through the increased level of multiskilling, work can be reorganised so that it can be performed most efficiently. Multiskilled workers carry projects through, sometimes all the way from start to finish often taking 'project ownership'.

6. **Competitive market**

Cost saving are passed onto the customer, through the decrease of labor cost due to reduction of turnaround time and number of workers involved.

7. **Management effectiveness**

Multiskilling is most valuable in the areas of management. Here it effects the reduction of product completion time (e.g. reduced subsequent production line delays), the decrease of project planning time (e.g. only one employee has to learn the details of the project), and the cutback of administration costs (e.g. faster completion of pay claims and materials billing).

Activity 2

A company experiencing financial difficulties is attempting to trade out of the problems. One idea is to retrench staff to reduce production costs, but it is decided to introduce multiskilling to help solve the financial problems.

Explain how multiskilling may reduce production costs and relieve the financial pressure.

[Answer](#)

Activity 3

Access the web site at <http://www.employment-studies.co.uk/summary/summary.php?id=336> and find the document *Productive skills for Process Operatives*.

The document looks at the multiple skills required for an operative in this industry. List these skills.

Structural factors

Restructuring

This unit of work addresses aspects of the following syllabus outcomes:

A student:

H1.1 investigates industry through the study of business in one focus area

H1.2 identifies appropriate equipment, production and manufacturing techniques and describes the impact of new and developing technologies in industry

H7.1 explains the impact of the focus area industry on the social and physical environment

Extract from *Stage 6 Industrial Technology Syllabus*, © Board of Studies NSW 2008.

Introduction

As the business environment changes, so must individual organisations. Businesses and organisations need to constantly examine their business practices and structures to ensure they continually improve if they are to survive in a rapidly changing world.

Managers are responsible for the structural changes that take place within any business organisation. Structural change, commonly called **restructuring**, refers to changes made in how the business is organised. Any restructure must be based on the analysis of accurate **data** such as production statistics and financial records and fully researched prior to commencement.

The need for restructuring

Businesses need to restructure for many reasons. Over recent years the need for changes in business structures have included:

- the emergence of new technologies
- the emergence of new materials
- the introduction of new production techniques and processes
- the development of new products and services
- the necessity to reduce costs and improve profits
- the need to attract investment
- ensuring the business operations run smoothly
- streamlining operations
- empowering employees to make their own decisions
- developing a teams approach
- changes in workplace culture
- the need for improved environmental protection
- Occupational Health & Safety legislation
- The need to reduce waste in time and materials
- Environmental considerations

Managing the restructure

Research and careful management of the change process are essential for success in any restructure. Managers need to have a clear understanding of what they wish to achieve and how they are going to achieve it prior to them starting any restructure. This **vision** should be shared with all stakeholders to gain a sense of common purpose and understanding.

The most successful restructuring process will occur when those involved in the restructure are involved in developing the new structure and given ownership of as much of the process as possible.

The specific processes used by managers in any restructure will vary depending upon the aim and extent of the restructure. They may implement processes such as the principles of Total Quality Management, the Australian Quality Council's PDSA 9 Step Improvement Process or "Paradigm Zero" change.

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Australian Quality Council's PDSA 9 Step Improvement Process

Some change management processes and their benefits are available in detail online at http://www.cap.nsw.edu.au/QI/qi_models.htm ▶ . Follow the link to Driving Excellence.

The 9-Step Process is designed for minor or major changes to existing structures. The process uses the following nine steps to implement successful changes to business practices:

1. Select an opportunity for improvement
2. Select the team
3. Study the current situation
4. Analyse the causes
5. Develop a theory for improvement
6. Implement the improvement
7. Study the results
8. Standardise the improvement
9. Establish future plans

[Detailed information of this process](#) ▶

“Paradigm Zero”

This change management process is often used in situations where major restructuring is needed or when dealing with the introduction of new technologies and materials. Such situations often require a completely new structure rather than simply a change to an existing one. This process will become more common as the rate of change and development in our society increases. The process is outlined in the following steps:

1. Disregard all existing structures and solutions (“paradigm zero”)
2. Select a team
3. State the team’s desired outcomes
4. Decide appropriate structures and processes to deliver the outcomes
5. Only then overlay current and appropriate organisation, techniques and structures.

Options when restructuring

Many options are available to managers when restructuring. Over recent years the main changes in business structures have included:

- Strategic Alliances - amalgamations/joint ventures
- Outsourcing – production or services
- Flatter organisational structures – reducing middle management
- Network Structures – coordination of subcontracted production or marketing.

Additional information on business structures and their advantages and disadvantages can be found on the following websites.

[Business Structures in Australia](#) ▶

[Business Structures](#) ▶

Use a Business Studies textbook from your school library or a web search to complete the following activities.

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Activity 1

Briefly describe the differences between business amalgamations and a joint venture.

[Answer](#)

Activity 2

What does the term “outsourcing” mean?

[Answer](#)

Activity 3

Give two examples of manufacturing industries that use outsourcing.

Technical Factors

Emerging Technologies

H1.2 identifies appropriate equipment, production and manufacturing techniques and describes the impact of new and developing technologies in industry.

Source: Stage 6 Syllabus, Industrial Technology, NSW Board of Studies . 2008.

The study of any of the Focus areas in Industrial Technology will involve experience with a range of tools and equipment necessary to assist you to develop skills and produce your Major Project. You will have access to only a limited range of technology within your school or college environment and through Industry visits may have seen various industrial machines and processes in action.

The evolution of manufacturing from the use of simple hand tools in cottage industries, through the introduction of machinery in factories during the Industrial Revolution in the mid to late 1800's to completely automated, computer controlled processes developed from the mid 1900's to the present day is well documented in many history books.

Computer Numerically Controlled (CNC) machinery has revolutionised manufacturing by enabling plans and drawings from a design office to be communicated to machines such as machining centres, milling machines, profile cutters or electronic circuit making equipment, etc in an instant, ensuring the processes are carried out accurately, quickly and consistently without human error. This integration of design, drawing and machinery processes is referred to as CAD/CAM or computer aided design/computer aided manufacturing.

In the 20th century CAD/CAM would have been the emerging technology and it is still in a state of evolution as it is being applied to an ever widening range of processes across the timber, metal, building and product development industries.

But what are the manufacturing technologies and applications that are emerging in the 21st century?

Once experimental and in research stages, processes such as:

- Laser sintering or stereo lithography
http://en.wikipedia.org/wiki/Selective_laser_sintering ▶
<http://computer.howstuffworks.com/stereolith.htm> ▶
- 3D laser scanning
<http://www.scansite.com/scanning.html> ▶
- Water/abrasive jet cutting
http://www.waterjets.org/about_abrasivejets.html ▶

are now in widespread use in industry.

Many more technologies are constantly being introduced across a wide range of applications as well as numerous applications that are still in the development stage and will become commonplace in our lifetime.

The information available on the internet alone on emerging technologies is vast and impossible to cover here. However, by learning about some of the most recent developments we can start to appreciate the influences of these technologies on industrial processes, production methods and costs, efficiency, raw material usage, environmental advantages and so on.

[Download Word version of Activities](#)

ACTIVITY 1

From the websites given above, describe the process of:

a. Stereo lithography -

.....
.....
.....

b. 3D laser scanning -

.....
.....
.....

c.

1. Water/abrasive cutting -

.....
.....
.....

2. List some of the advantages of water/abrasive cutting.

-
-
-
-
-
-
-
-

[Answer](#)

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ACTIVITY 2

a. Go to http://en.wikipedia.org/wiki/Blu-ray_Disc ▶ and explain the advantages of Blu-ray discs over conventional CD or DVD formats.

.....

b.

i. From the site <http://en.wikipedia.org/wiki/OLED> ▶ what does OLED stand for?

.....

ii. List some of the advantages of this technology.

-
-
-
-

iii. List some of the commercial uses of OLED's.

-
-
-
-

c. At the following site you will read about 'stretchable silicon' http://www.technologyreview.com/read_article.aspx?ch=specialsections&sc=emergingtech&

What could be some of the potential uses of this development in circuitry?

-
-
-

[Answer](#)

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ACTIVITY 3

- a. Explain the difference between 'incremental sheet metal forming' and conventional methods of shaping sheet metal as outlined at:

http://www.psgtech.edu/psgias/smart_machine_tools/N%20V%20Reddy_bak.pdf ▶

.....
.....
.....

- b. Using a labelled sketch, explain the process of 'friction stir welding' which is outlined at:

<http://www.new-technologies.org/ECT/Mechanical/fsw.htm> ▶

.....
.....
.....

Personnel Issues

Unions in the workplace

This unit of work addresses aspects related to the following syllabus outcome:

A student:

H1.1 investigates industry through the study of businesses in one focus area

Source: Board of Studies NSW (2008) *Stage 6 industrial technology, preliminary and HSC courses*. Board of Studies, Sydney

Background

A union is an association of workers, from a similar field of employment, which uses its strength of numbers to initiate changes in working conditions, by bringing areas of concern to the attention of the employer.

Unions developed to protect workers from being exploited by unscrupulous employers who expected long hours of work for low rates of pay.

There is a long history of various industrial disputes and enterprise bargaining that have led to the many minimum award conditions that workers enjoy in a modern work environment.

Many larger industries have well established union representation, for example, the Australian Manufacturing Workers Union or the Shop Distributive and Allied Employees Union.

The representation of the union in the workplace falls to the union representative who is elected by fellow workers. This person monitors workers conditions and ensures that rights and entitlements are maintained.

Terminology:

- a. **Arbitration** is a method of dispute settlement in which an independent third party considers the arguments of both sides and then makes a ruling that is binding on the parties in a dispute.
- b. **Award** An award is a legal document setting out the minimum rates of pay and conditions of employment that apply to employees in a particular industry.
- c. **Conciliation** is a dispute settling method in which a third party, usually an independent, seeks to bring the disputants to the point where they can reach agreement. The conciliator acts as an 'honest broker' in the negotiations. In Australia, agreements produced through formal conciliation lead to changes in award provisions. If the conciliator is unsuccessful in settling some or all of the issues that are in dispute, these items can be referred to arbitration. Conciliation is not necessarily a precondition for arbitration.
- d. **An enterprise agreement** sets out the minimum conditions of employment for employees engaged in particular types of work in the same way as an award. However unlike most awards, enterprise agreements are specific to a particular enterprise or project. Enterprise agreements are negotiated voluntarily between an employer and either the employees concerned or a union on behalf of those employees (the parties).
- e. **Equal employment opportunity (EEO)** means that everyone should have fair and equitable access to jobs, employment conditions, training and promotional opportunities. It does not assume that everyone has the same abilities but aims to ensure that everyone has a fair chance to demonstrate their abilities, to use them, improve them and benefit from them. EEO is consistent with the principle of merit. It means that the best person is chosen for the job, promotion or training opportunity and that they are selected only on criteria that are relevant.
- f. **Industrial dispute:** The term can refer to any disagreement in industrial relations, and primarily to those that arise between employers and employees. The term is also used synonymously with strikes and other particular forms of industrial action.
- g. **Redundancy** is the permanent displacement of some part of the workforce of an organisation as a result of plant closure, organisational or technological changes. A redundancy agreement can be reached between a union and an organisation that proposes to terminate the employment of a number (perhaps all) of the employees. Such agreements generally involve paying out the employees, in lieu of continued employment, according to a formula based upon the length of service of each employee. The longer the period of continuous employment the larger the severance payment a worker will be entitled to.
- h. **Severance pay** is the final payment made to an employee when their employment is terminated. It includes amounts for accrued leave, leave loadings, and accrued pay for time already worked. In instances of redundancy, severance pay can also include redundancy pay.

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Activity 1

The Department of Industrial Relations sets the minimum awards and working conditions for employees in the workplace.

Answer the following questions from:

http://www.industrialrelations.nsw.gov.au/Workers/My_entitlements/Trade_unions.html ►

1. In what areas can unions represent their members?
2. Apart from individual employers, what other stakeholders do unions deal with?

[Answer](#)

Activity 2

When disputes arise in the workplace the union intervenes to represent the employees in an industry in negotiations with the employer. If the dispute is not resolved at this level, the matter is referred to the Australian Industrial Relations Commission.

Go to: <http://www.airc.gov.au/> and from the "summary" determine what are the functions of the Australian Industrial Relations Commission.

Workplace culture

This unit of work addresses aspects of the following syllabus outcomes:

H1.1 investigates industry through the study of businesses in one focus area

H7.1 explains the impact of the focus area industry on the social and physical environment

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Different organisations of any type, even those producing the same product or service, can be very different places to work. They will have different 'atmospheres', different ways of doing things, different attitudes, different values and so on, and each of these can impact on the overall contentment of the people in those workplaces.

We can refer to these aspects of the workplace as 'workplace culture'. Workplace culture can probably be best described as the attitudes people within the workforce have toward their work, and their workmates.

Many issues can impact positively or negatively on workplace culture. The attitudes and expectations of the senior management of an organisation can have the greatest impact on workplace culture, and workplace culture can be very different when there is a change of management.

Perhaps the greatest area of concern of an organisation's culture is that which influences the application of Occupational Health and Safety processes. Management needs to be aware of all aspects of the OH&S Regulation and have policies which implement necessary strategies such as safety training, risk management and OHS committees.

In addition, workplaces must embrace new, flexible ways of doing things that allow for the changing nature of the workforce and the need for better work/home/family balances.

Workplace signage

This unit of work addresses aspects of the following syllabus outcomes:

H1.1 investigates industry through the study of businesses in one focus area

H4.3 critically applies knowledge and skills related to properties and characteristics of materials/components

H5.1 selects and uses communication and information processing skills.

Extract from *Industrial Technology Stage 6 Syllabus* © Board of Studies NSW 2008.

Introduction

Signs and symbols are used in a workplace to convey information to workers and visitors to the site. Being able to move or navigate around the workplace independently and safely to perform tasks or access meal and bathroom facilities can be critical to an individual's success and productivity at work. There are a range of signs in the workplace that allow a person to move around safely and with confidence.

Safety signs

There are three main types of safety signs used in the workplace:

1. Picture signs using symbols or pictures.



2. Signs with only text based messages.



3. Picture signs with a short message.



Picture signs are used as they reach as many people as possible in the workplace, including workers with low reading ability or people from non-English speaking backgrounds.

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Colour and shape

There are seven categories of safety signs identified by colour and shape:

1. Prohibition signs – these are signs that indicate something that you must not do: They are made up of a red circle border with a line through it, a white background and black symbol



2. Mandatory signs – these signs tell you that you **must** wear some special safety equipment: They are made up of a blue solid circle, white symbol, with no border.



3. Restriction signs – these signs tell of a limitation placed on an activity or use in the area concerned. They are made up of a red circular border, no crossbar, and a white background.



4. Hazard warning signs – these signs warn you of a danger or risk to your health: They are made up of a yellow triangle with a black border, and a black symbol.



5. Danger hazard signs – these signs warn of a particular hazard or hazardous condition that is to be life-threatening: They are made up of a white rectangular background, with the word DANGER in white on a red background, and black border and black text.



6. Emergency information signs – these signs show where emergency safety equipment is kept: They are made up of a green solid rectangle, with a white symbol or text.



7. Fire signs – these signs tell you the location of fire alarms and firefighting facilities: They are made up of a red solid rectangle, with white text.



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Health signs

The following examples show wall charts which are placed in the workplace to remind and encourage workers to follow safe work practices.

① Lifting Techniques

Lifting Technique 1
Two-armed Lift Using Squat

Lifting Technique 2
One-armed Lift Using Squat

Lifting Technique 3
One-armed Lift Using Lunge

Safe Lifting: General Guidelines for Your Workplace

- 1. PREPARING TO LIFT A LOAD FROM FLOOR HEIGHT**
 - ✓ Breathe the load in the load beyond your capabilities?
 - ✓ Plan how to proceed?
 - ✓ When lifting ensure a wide, steady base of support. Stand with your feet apart, other side and behind the load you are about to lift.
 - ✓ Remember your posture. Try to keep your natural spinal curve.
 - ✓ Look straight ahead.
- 2. BENDING DOWN TO MEET THE LOAD AT FLOOR HEIGHT**
 - ✓ Bend your knees by pushing your buttocks backwards.
 - ✓ Try not to let your lower back to flex at any time.
- 3. GRASPING THE LOAD**
 - ✓ Get a good grasp of the object.
 - ✓ Hold the load close to your body.
 - ✓ Tighten your stomach muscles at all times.

MANUAL HANDLING

Manual Handling is described as any activity requiring the use of human force to lift, lower, push, pull, carry or otherwise move, hold or restrain any article or substance of weight or mass.

Manual Handling includes: Carrying, Lifting, Lowering, Pushing or Pulling, Hoisting or Lowering, Holding or Restraint, Resting or a person's movements or force of a body part against a surface or object or to a person.

Please do not use manual and 'Manual Handling' is the first step in preventing injury.


Safety Training Institute
10000 10th Street, Suite 100, Richmond, BC V6V 1G8
Tel: 604-273-8888
www.safetytraininginstitute.com



Signage of electrical equipment

Testing of all tools is now a legal requirement in Australia on all worksites. Any piece of electrical equipment, including extension leads must be checked and tagged by a qualified person. The correct tag looks like the following:



Material safety data sheets (MSDS)

All containers that have a substance that is deemed dangerous must be labelled appropriately. MSDS provide information required for labelling a container and where possible an MSDS is to be attached to the container. The label on a hazardous substance should draw the attention of an employee who is using the substance to the significant hazards involved. It should take into account all the hazards which are likely to occur from the use of the substance.

The **MSDS** must:

1. be readily available to personnel using the substance with information provided in a form that is easily understood by the user
2. identify that the substance is a designated hazardous substance
3. meet the needs of those persons with language or literacy difficulties.



Placement of signs

Signs should be located where they are clearly visible to all concerned so as to attract attention and be read or interpreted easily.

The height of a sign should be at the normal line of sight for a standing adult.

Signs should not be placed on movable objects such as a sliding door.

Regulation and hazard type signs should be positioned in relation to the hazard to allow a person plenty of time to view the sign and take notice of the warning.

COURSE COMPONENT(S): Industry Study

TASK# 2

WEIGHTING: 15%

DATE DUE: Thursday 9th of April 2020 (Week

11)

Name: _____

Syllabus Outcomes	A student in this range:	Marks
<p>H1.1 Investigates industry through the study of business in one focus area.</p> <p>H1.3 Identifies appropriate equipment, production and manufacturing techniques and describes the impact of new and developing technologies in industry.</p>	<ul style="list-style-type: none"> • Demonstrates a wide range of presentation skills and communication techniques including appropriate ICT. • Critically evaluates a business in industry. • Comprehensively analyses the impact of existing, new and emerging technologies of industry on society and environment. • Thoroughly investigates and explains the impact of industry on the social and physical environment. • Clearly describes appropriate equipment, production and manufacturing techniques and their impact on industry. 	<p>Excellent 100-80</p>
<p>H7.1 Explains the impact of the focus area industry on the social and physical environment.</p> <p>H7.2 Analyses the impact of existing, new and emerging technologies of the focus industry on society and the environment.</p>	<ul style="list-style-type: none"> • Demonstrates a range of presentation skills and communication techniques including appropriate ICT. • Evaluates a business in industry. • Analyses the impact of existing, new and emerging technologies of industry on society and environment. • Investigates and explains the impact of industry on the social and physical environment. • Describes appropriate equipment, production and manufacturing techniques and their impact on industry. 	<p>High 79-60</p>
	<ul style="list-style-type: none"> • Demonstrates a range of communication techniques including appropriate ICT. • Describes a business in industry. • Proposes the impact of existing, new and emerging technologies of industry on society or the environment. • Explains the impact of industry on the social or physical environment. • Outlines appropriate equipment, production and manufacturing techniques and their impact on industry. 	<p>Satisfactory 59-40</p>
	<ul style="list-style-type: none"> • Shows basic ICT skills. • Names a business in industry. • Proposes the impact of existing, new and emerging technologies of industry. • Explains the impact of industry. • Outlines equipment, production and manufacturing techniques in industry. 	<p>Developing 39-20</p>
	<ul style="list-style-type: none"> • Little evidence of ICT skills. • Identifies aspects of industry. • Provides limited impact of industry. • Appropriate research not evident. 	<p>Elementary 19-0</p>

Comment: _____

