****

# 

CLASS ACTIVITIES - Student

**CPCCCM1012**

**Work effectively and sustainably in the construction industry**

# **CPCCCM1012 - Work effectively and sustainably in the construction industry**

Question 1: What are group norms?

| **Group norms:** These are known behaviours that are expected by all members of a group/team. These are unwritten ‘rules’ and ‘standards’ which develop within a specific group/team as people react with one another. Norms help a group to avoid a state of utter confusion and disorder as the inputs of different individuals are organised into a collective group. These norms usually include the following.   * Behave in a courteous and helpful manner * Complete allocated tasks as and when required * Seek assistance when difficulties arise * Questioning techniques to clarify instructions * Active and effective questioning |
| --- |

Question 2: What is meant by prioritisation?

| Priortisation is deciding on the order in which to do your work tasks by identifying what’s important or urgent and what can be postponed. The priority of construction tasks will depend on how it affects:   * your ability to complete another task * the ability of others to complete their tasks * when other workers need to be on site * the overall project plan * site safety   Prioritising helps you to make the best use of your time and makes sure that the tasks that affect others are completed when necessary to avoid delays.  Priorities can change as a project progresses or when something unexpected occurs. For example, if Tom and John were told that the plumber was arriving and the site must be cleared as soon as possible, cleaning the house and packing up all tools and equipment would become the highest priorities. |
| --- |

Question 3: What is a team?

| A team is any group of people working together towards a common goal. In the construction industry, most work is completed by teams of trades people. Construction or trade teams are usually made up of workers with a variety of skills and experience which contribute to faster and more efficient completion of work activities. Being able to work in a team is one of the most important skills you can develop for finding employment and working in the construction industry.  A trade team can consist of many workers, depending on the size of the company, worksite or project, although a small team may consist of a single tradesperson with an apprentice.  ‘Teams’ is a generic term that refers to the site work organisation. It may be known/titled locally as crews, gangs, shifts or other industrially and historically acceptable term. |
| --- |

Question 4: What do you understand by safe work methods statements (SWMS)?

| **SWMS**:-A Safe Work Method Statement (SWMS) is a document that outlines the high-risk construction work activities to be carried out at a workplace, the hazards that may arise from these activities, and the measures to put in place to control the risks. SWMS are required for high risk construction work activities, as defined in the WHS Regulations. |
| --- |

Question 5: How would you plan and prioritise construction work activity?

| **PLANNING YOUR CONSTRUCTION WORK**  Planning tasks before you begin a new activity is essential because it helps you to work out what’s to be done, how you’re going to do it and what you’ll need. Planning also lets you identify who else is involved and how others will be affected by your activities.  The builder or project manager of a construction project must plan all work tasks and consider the contribution of every worker to select the best and safest way of completing the project on time, within budget, and according to the required standards.  For a tradesperson in the construction industry, planning may consist of deciding on the steps required to complete a task set by a supervisor, organising the materials, tools and equipment, and communicating with others in the team to get a task done.  **Priortisation**  Priortisation is deciding on the order in which to do your work tasks by identifying what’s important or urgent and what can be postponed. The priority of construction tasks will depend on how it affects:   * your ability to complete another task * the ability of others to complete their tasks * when other workers need to be on site * the overall project plan * site safety   Prioritising helps you to make the best use of your time and makes sure that the tasks that affect others are completed when necessary to avoid delays.  Priorities can change as a project progresses or when something unexpected occurs. For example, if Tom and John were told that the plumber was arriving and the site must be cleared as soon as possible, cleaning the house and packing up all tools and equipment would become the highest priorities. |
| --- |

Question 6: What PPE shall be for:

* Head protection
* Eye protection
* Foot protection
* Hand protections
* Hearing protection

| **Head protection -** Where there’s a risk of a person being struck on the head by a falling object at work, a safety helmet must be worn. On sites where this hazard exists, a ‘mandatory’ safety sign will be visible to tell you that you must wear a helmet at all times.  **Eye protection -** Where there’s a risk of getting dust, grit, sparks, irritating liquids or the like in your eyes, you must wear eye protection. Safety glasses are suitable for most situations you’re likely to encounter, but full-face masks are available for workers who need them. Sun damage is also considered a hazard in Australia. Note that eye protection must comply with the relevant Australian Standard® so your everyday sunglasses won’t be adequate.  **Foot protection -** Most construction sites require all personnel to wear safety footwear. There are numerous styles of steel-cap boots and shoes available.  **Hand protection -** You should wear gloves for most tasks carried out on a construction site, so that your hands are protected. The material used to make the gloves may vary depending on the object or substance being handled.  **Hearing protection -** Excessive noise can damage hearing. Construction sites are very often noisy environments so there are many situations where you’ll need hearing protection. Earmuffs and/or earplugs/ear buds should be worn in any situation where you have to shout so that a person a metre away can hear you. |
| --- |

Question 7: How can you improve teamwork in your construction project?

| **Improving teamwork**  It’s important for workers to discuss any improvements that may be required within a team. These discussions can be initiated by anyone, from a labourer to the most qualified worker. Making improvements to the way a team works is not done to blame or point a finger at an individual or group of people, but to improve the overall wellbeing and efficiency of the team itself. Identifying areas of improvement within the team can provide the following benefits:   * better team morale * working more efficiently as a group * passing on skills and knowledge * achieving site goals faster * More work being offered in the future. |
| --- |

Question 8: On a construction project, how can you set goals for your team and ensure they're as effective as possible?

| Research shows that setting specific and challenging goals leads to higher performance. In order for them to be effective, there should be alignment between those of the organization, the teams, and individual ones. Everyone should be working towards the same outcome and understand how their work is contributing to the bigger picture.  Here are 7 steps to set goals for your team and ensure they're as effective as possible.  1. Know what you want to achieve  2. Set goals at the team level  3. Let people develop their own goals  4. Set deadlines  5. Track progress on goals  6. Help people meet their goals  7. Learn from your mistakes |
| --- |

Question 9: List common problems involved in construction projects?

| Here are some common problems involved in construction projects :-  **1. Lack of trust**  Trust is crucial to teamwork, and it starts with people knowing each other. Team members absolutely need to be acquainted, both professionally and personally, particularly in projects where tensions will run high at some point. Otherwise members won’t understand each other, they won’t want to engage because they haven’t made that human connection and they won’t fully trust each other.  **2. Conflict and tension**  Conflict or a difference of opinion can be healthy and, if carefully managed, can trigger useful debates. It can make people think differently, expanding knowledge and insight; innovation can happen and results flourish. Different opinions are not a bad thing. It’s how we handle the conflict that makes a difference.  **3. Not sharing information**  Knowledge is not power – unless it’s shared. Project team members all bring a unique set of skills, knowledge, experience and wisdom to the table. Effective project teams fearlessly share regularly and generously for the benefit of everyone and for the benefit of the project’s success. This makes the capability of the whole team grow and gives the team more power.  **4. Low engagement**  Team engagement is crucial to business success. If engaged, team members on a given project will be interested in what they do, committed to the project mission and willing to go the extra mile. They are there in body as well as mentally and emotionally. The key to engagement is involvement – by involving others you make it impossible to stay detached.  **5. Lack of transparency**  Without transparency, trust will suffer – both within the project team and with the end client. Transparency is becoming the presumed norm in project and programme management and expectations are growing.  **6. No long-term thinking**  Project managers have to get beyond day-to-day urgencies, see the big picture and consider how all parts of the project fit together. For a project team, this means being able to think beyond your own area, about how you fit into the wider change programme or project and how you impact the end client’s experience.  **7. Poor change management**  Change is constant and unless carefully managed, it can be detrimental to teamwork and results. Change starts and ends with communication. Whenever you think you’ve communicated enough, you need to communicate some more – and it needs to be interactive: listen, talk and involve. |
| --- |

Question 10: Prepare a list of most common construction trades in Australia.

| List of Construction Trades  Boilermaker  Brickwork  Carpenter  Electrician  Fencer  Glazier  Heavy Equipment Operator  Labourer  Landscaper  Painter  Pile Driver Operator  Plasterer  Plumber  Roofer  Steel Fixer  Welder |
| --- |

Question 11: What is RPL?

| **Recognisation of prior learning (RPL)**  Recognition of prior learning is an assessment process that involves assessment of an individual’s relevant prior learning (including formal, informal and non-formal learning) to determine the credit outcomes of an individual application for credit.  RPL is one of a number of processes for establishing credit or advanced standing. RPL broadens access into formal learning by enabling credit to be given for student achievement though other formal, non-formal or informal learning. RPL involves issuing organisations undertaking an assessment of each individual who applies to determine the extent to which that individual’s previous learning is equivalent to the learning outcomes of the components of the destination qualification. |
| --- |

Question 12: List appropriate techniques for recording resource.

| Appropriate techniques for recording resource use include:   * examination and documentation of resources on work site * examination and measurement of resources, materials and products from suppliers * examination of relevant information and data on efficiency and resource reduction * Instructions and reports from other parties involved in the process of identifying and implementing improvements. |
| --- |

Question 13: Describe basic rules to handle hazardous materials.

| Here are 11 basic rules all employees who handle hazardous materials should know and follow.  Rule #1. Follow all established procedures and perform job duties as you’ve been trained.  Rule #2. Be cautious and plan ahead. Think about what could go wrong and pay close attention to what you’re doing while you work.  Rule #3. Always use required PPE—and inspect it carefully before each use to make sure it’s safe to use. Replace worn out or damage PPE; it won’t provide adequate protection  Rule #4. Make sure all containers are properly labelled and that the material is contained in an appropriate container. Don’t use any material not contained or labelled properly. Report any damaged containers or illegible labels to your supervisor right away.  Rule #5. Read labels and the material safety data sheet (MSDS) before using any material to make sure you understand hazards and precautions.  Rule #6. Use all materials solely for their intended purpose. Don’t, for example, use solvents to clean your hands, or gasoline to wipe down equipment.  Rule #7. Never eat or drink while handling any materials, and if your hands are contaminated, don’t use cosmetics or handle contact lenses.  Rule #8. Read the labels and refer to MSDSs to identify properties and hazards of chemical products and materials.  Rule #9. Store all materials properly, separate incompatibles, and store in ventilated, dry, cool areas.  Rule #10. Keep you and your work area clean. After handling any material, wash thoroughly with soap and water. Clean work surfaces at least once a shift so that contamination risks are minimized.  Rule #11. Learn about emergency procedures and equipment. Understanding emergency procedures means knowing evacuation procedures, emergency reporting procedures, and procedures for dealing with fires and spills. It also means knowing what to do in a medical emergency if a co-worker is injured or overcome by chemicals. |
| --- |

**Class Activities:**

**Activity 1:**

1. Identify industry structure - The construction industry has an effect on many other aspects of the country’s economy including, for example, imports and exports, mining and resource development, manufacturing and retail. With your class, discuss how the construction industry contributes to the economy. List five examples below.
2. Research and identify some of the current trends in the construction industry.

| **a)** 1. Contribution to National Development Construction projects necessitate the procurement of required raw materials from the manufacturing industry, such as bricks, timber, glass, aluminium, and steel.  The materials, equipment, and workforce for a project often require transportation to and from the site. This provides business for transport workers and commercial fleets. 2. Creation of More Employment Opportunities In the construction industry, a variety of job opportunities exist within and outside a project. These opportunities are further increased when a contractor embraces labor-intensive methods. This is usually the case with small to medium-sized contractors undertaking small to medium-sized projects. 3. Increase in Investment Potential With a thriving industry and a large percentage of contractors vying for government and nongovernment projects, there is a marked interest in construction investments. An absence of competition causes lethargy in delivery of projects, mismanagement of funds, and slow completion of projects, which discourage investors from seeking out the construction industry. 4. Promotion of Technological Advancement and Related Careers In construction, for instance, human labour will always be in demand. After all, tech experts need to be hired to take charge of correspondence through mails and fax, prepare spreadsheets, create 3D visuals, and perform all the other logistics processes that would normally use up time and resources. 5. Development of Rural Communities The socioeconomic growth of the members of a community depends on increased investment and infrastructural development. Construction projects undertaken by small contractors in rural communities provide the means for socioeconomic development in those areas. **b)** These are the most important trends shaking up the whole construction industry of tomorrow1. From BIM to DIM The term “Building Information Modeling” (BIM) will evolve as Digital Information Management, transforming the acronym and bringing it to more people. The goal is to create a broader knowledge, acceptance and use of BIM concepts in the industry. This can only be done by leveraging people’s language and delivering the same message differently. 2. Construction robotics The use of construction robotics is becoming more and more prevalent in the construction industry. Construction robots are able to complete many tasks that are repetitive and time-consuming, which can speed up the building processes. 3. Advanced building materials The future of building materials looks promising as researchers continue to develop new and more advanced components. One trend is the use of advanced building materials that are more effective and longer lasting than traditional materials. 4. Offsite construction (Prefabrication) Offsite construction or prefabricated construction is a construction method where building elements are manufactured in a factory or workshop away from the construction site before being delivered and assembled on-site. 5. Connected construction site One of the biggest shifts was the introduction of connected construction sites. A connected construction site is a network of construction equipment, vehicles, devices, people and sites that communicate with one another via wireless or digital technologies under the umbrella of a single business or organization. 6. Construction monitoring with drones Another popular technology that is being used in the construction industry is drones. They are becoming more and more popular in a variety of industries and construction is no exception.  Drones offer a unique perspective that can help with a variety of tasks, such as site surveys, mapping and even safety inspections. They are being used more and more for construction monitoring because they can help reduce costs. For example, drones can be used to survey a construction site before work begins so that the site can be mapped out and planning can begin. This can save time and money since it eliminates the need to send someone to physically survey the site. 8. Green buildingIt’s no surprise, then, that green building is now becoming a trend in the industry, with more and more builders and designers looking to create eco-friendly structures. There are many different aspects that need to be considered when designing and constructing a green building, from energy efficiency to using non-toxic materials. One of the main benefits of green building is that it can help reduce energy consumption and greenhouse gas emissions. |
| --- |

**Activity 2:**

In this activity, the students need to perform the following tasks.

1. Discuss with your cohorts why it is essential that everyone working on a construction project follows the work plan. List five reasons identified by the group.
2. List the PPE that you would need when performing the task of painting the outside wall of a commercial building.
3. Prepare an action plan (in 5-7 bullet points) of would you deal with the following conditions when working on a construction project:
4. Delay in delivery of material to site
5. Tasks taking longer than usual
6. Unsafe working conditions

| a)  b)Respiratory Masks  Goggles  Hand Gloves  Helmet  Safety Shoes  Full body Harnesses  **c)**  **1. Dealing with Delay in delivery of material to site**   * + - 1. Use of Alternative Material Resources available.       2. Contingency Utilization       3. **Milestone Misses, Delays, and Extensions**   The minute a sponsor suspects supply chain issues, recasting the time to complete is imperative. Bring this new project schedule to the lender’s attention immediately and discuss extension and modifications, if necessary. Good news travels fast…bad news travels faster. Milestones and other covenants cast in the construction loan agreement that are missed will be closely monitored in this period. Non-monetary defaults and related waivers, if any, will be negotiated on a case-by-case basis. Having a clear and open dialog with executives and portfolio managers can create a positive, collaborative setting.  **2) Solution to Tasks taking longer than usual**  Make a Plan. Effective time management isn't achieved randomly. ...  Create a Priority List Rather Than a To-Do List. ...  Start Early. ...  Breakdown Every Task Into Small Chunks. ...  Practice Decision Making. ...  Delegate tasks. ...  Set SMART Goals. ...  Set Up Deadlines.  **3) Handling with Unsafe working conditions**   * Follow all specific safety rules. * Report all unsafe acts or unsafe conditions to your supervisor. * Encourage fellow employees to work safely. * Check the condition of personal protective equipment and use the correct PPE for the specific hazard you are dealing with. * Ask for help if you need it. * Ask questions if you are not sure of the proper way to do something. * Lock out and tag all equipment before adjusting it or performing maintenance on it. * Inspect the condition of ladders before using them. * Don't use chemicals unless you have been specifically trained on the hazards and protective steps you need to follow to use them safely. * Keep your work area neat and clean to avoid trip hazards. |
| --- |

**Activity 3:**

In this activity, discuss with a partner or small group:

1. the issues that might be discussed at a weekly site meeting. List five issues below.
2. The importance of teamwork

| b)  Importance of Team Work  There are many advantages to working in a team. To make the most of the experience, it’s important to remember that everyone brings their own knowledge, skills, experiences and history to the work environment. By choosing to accept and support your team mates, you can increase the effectiveness of the team and improve your own working experience. |
| --- |

**Activity 4:**

Identify the key skills and knowledge for the following construction trades to work effectively in the construction industry:

1. Bricklayer
2. Tiler
3. Concreter
4. Plumber
5. Carpenter

| **Bricklayer: -** The term “brickwork” is used to encompass both bricklaying and masonry and refers to the process of creating walls and barriers through the laying of brick and mortar.  **Tiler** :- As a wall and floor tiler you could be:   * Working out how many tiles and how much adhesive you’ll need for a particular area * Cutting tiles to a certain size or shape with hand-cutters or bench-mounted tools * Preparing surfaces by leveling off with plaster, sand or cement * Decorating and protecting floors and walls using all kinds of tiles (including ceramic, clay, slate, marble and glass) * Fixing the tiles and applying grout before finishing off   **Concreter: -** A Concrete Labourer ensures concrete is poured correctly through accurate placement on-site with various forms needed on the construction site. They also apply various products to add colour, waterproof and shape concrete as needed.  **Plumber: -** Plumbers are responsible for planning, installing, maintaining and repairing all systems which facilitate the flow of gas, water, steam, air or other liquids. They perform their job at a number of different sites including residential, commercial and industrial properties. Some of the key tasks performed by plumbers are pipes and fixtures (such as sinks and toilets), assembling fittings and valves for installation, modifying lengths of pipe or fixtures as required and installation of air-conditioning systems and water heaters.  **Carpenter: -** Despite being one of the oldest skilled trades, carpentry is still widely required in modern construction. Carpenters construct, erect install and repair fixtures and structures using wood and other materials. |
| --- |

**Activity 5:**

Discuss with your class/cohorts and identify how the amount of operational and/or embodied energy used on a construction project could be reduced by the choice of materials and tools.

| **Using materials sustainably**  Choosing the right building materials and managing the way in which they’re used is one of the most important factors in reducing the consumption of natural resources and minimizing environmental damage. Sustainable building materials are materials that have less impact on the environment than their traditional equivalents.  **Using energy efficiently**  Energy use affects the environment by using up limited natural resources like coal and oil and by releasing greenhouse gases that damage the atmosphere. There are two types of energy used in the construction industry – operating and embodied. You’re probably more familiar with operating energy which is the energy you use when you plug tools directly into the main power supply. Embodied energy is all the energy used in producing or making something.  Environmental and resource efficiency issues include:   * using resources efficiently, including reducing material usage and supporting efficient energy and water use, such as: * air testing pipes * efficient fittings * insulation * site management to minimise stormwater pollution * strategic use of materials to reduce off-cuts and wastage * tool maintenance * transportation * using alternative practices, procedures and materials/products that reduce or eliminate resource consumption.   Appropriate techniques for recording resource use include:   * examination and documentation of resources on work site * examination and measurement of resources, materials and products from suppliers * examination of relevant information and data on efficiency and resource reduction * instructions and reports from other parties involved in the process of identifying and implementing improvements. |
| --- |

**Activity 6:**

Identify some ways in which you can contribute to waste management on a construction site.

| **Waste management**  Most worksites have policies for safely managing waste to reduce environmental damage. Waste management plans should include procedures for:   * minimizing landfill waste * separation of recyclable materials * safe disposal of hazardous waste * protection of stormwater drains * safe clean-up procedures.   Stormwater protection is a particularly important issue on many construction sites. Litter, hazardous substances and building materials like gravel and concrete can get into stormwater drains and ultimately end up in the ocean or wetlands.  Clean-up and waste management can actually cause damage if correct procedures aren’t followed. Some environmental hazards like asbestos can only be cleaned up by removing the topsoil along with the hazard which damages soil structure and removes plants and seeds. These kinds of hazards can be cleaned up only by specialists.  Companies and individuals face serious penalties for allowing waste into the stormwater system or for damaging the environment with ineffective waste management practices |
| --- |

**Activities 1-6**

Answer may vary but student must address the questions according to the following resources:

* Learner Guide
* PowerPoint presentation
* Self-study Guide
* Live Training sessions and discussions with trainers/assessors