Department of Climate Change, Energy,
the Environment and Water

NSW GOVERNMENT

Water industry traineeship guide

A handbook for local water utilities

July 2025

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Acknowledgement of Country

Department of Climate Change, Energy, the Environment and Water acknowledges the traditional custodians of the land and pays respect to Elders past, present and future.

We recognise Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to place and their rich contribution to society.

Artist and designer Nikita Ridgeway from Aboriginal design agency – Boss Lady Creative Designs, created the People and Community symbol.

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1 Why invest in Water Industry Traineeships?

1.1 Introduction

The water industry provides the essential services of clean drinking water, effective wastewater treatment, and management of water infrastructure. To keep these services running, the industry needs skilled workers who understand water operations and can maintain and improve local water systems.

Successful traineeship programs enable organisations to bring in new talent, provide training for hands-on roles, and develop a strong and capable workforce for the future.

Providing new employees with effective training and support reduces workforce shortage and prepares future industry professionals, setting them up for long-term careers in the water industry. It ensures business and industry knowledge, and skills are passed down. It also provides opportunities for existing staff to take on mentoring roles, strengthening workplace culture.

This guide explains how to recruit, train, and support water industry trainees. It covers benefits, financial incentives, key responsibilities, and resources. It supports efforts to successfully implement a program that provides benefits for trainees, their organisations, and the broader water industry.

1.2 Why hire a water industry trainee?

Hiring a water industry trainee is a strategic investment in the future of the organisation and water industry. It ensures essential knowledge and skills are passed on to new workers while helping employers address workforce gaps resulting from retirements and sector growth.

Key benefits for employers

- Customised training to meet the specific needs of your organisation.
- Skilled employees who understand your systems and processes.
- Increased staff retention due to long-term career progression opportunities.
- Government funding to reduce training and wages costs.
- No obligation to hire the trainee after the program ends.

Financial incentives and support for employers

There are zero course fees for all new entrant trainees and apprentices. However, Smart and Skilled funding from the NSW Department of Education (Training Services) may be available for existing staff, which could attract a fee.

Employers may be eligible for funding and subsidies to support traineeships, including the following.

- **NSW Fee-Free Traineeships** (until 31 December 2025) – covering training costs: Fee-free traineeships.
- **Payroll tax rebates for eligible trainees** – employers may receive payroll tax exemptions for eligible trainees, reducing business costs.
- **Apprenticeship wage subsidies** – provide financial assistance to help cover apprentice wages during training: Get funding or support for apprenticeships or traineeships – Employers.
- **NSW Government Fresh Start Program** – provides funding to local councils to employ apprentices, trainees, and cadets, supporting workforce growth, capacity building, and 1,300 new positions over six years: Fresh Start Program – Round 3 | NSW Government.
- **Elsa Dixon Aboriginal Employment Grant** – offers funding to promote Aboriginal employment opportunities across various sectors: Elsa Dixon Aboriginal Employment Grant.
- **Federal government financial incentives**, including commencement and completion payments, as well as wage subsidies for job roles listed on the Australian Apprenticeship Priority List. For example, hiring an electrical apprentice entitles an employer to:
  - 10% of the apprentice's wages paid for the first 24 months (up to $1,500 per quarter)
  - 5% of the apprentice's wages paid during the third 12-month period (up to $750 per quarter).

  Current details of financial support is found here: Financial support for employers | Australian Apprenticeships.
- **Other support is available for employers** from NSW Department of Education, including providing training to effectively supervise trainees: Free workshops: Supervising your apprentice or trainee.

Many organisations have successfully implemented traineeship programs, leading to higher retention rates, improved operational efficiency, and cost savings. Employing trainees also provides valuable mentoring opportunities for existing staff, fostering a positive learning culture, and strengthening workplace engagement.

1.3 Strengthening workplace culture through mentorship

Mentorship plays a vital role in traineeships, fostering knowledge transfer, collaboration, and workforce continuity. Pairing trainees with experienced employees strengthens industry expertise while creating a more engaged workplace.

Mentorship benefits

- **Retains industry knowledge** – senior staff pass down essential skills.
- **Boosts team cohesion** – encourages cross-generational collaboration.
- **Enhances job satisfaction** – recognises experienced workers' contributions.
- **Supports workforce stability** – helps trainees transition into long-term roles.

Employer strategies

- **Assign mentors** – pair trainees with experienced staff for guidance.
- **Encourage peer learning** – foster collaboration among trainees.
- **Recognise contributions** – reward mentors for their leadership.
- **Rotate workplace experience** – provide exposure across key operations.
- **Offer leadership pathways** – develop mentors into future industry leaders.

> Embedding mentorship into traineeships enables organisations to create a strong, skilled workforce while fostering a culture of learning and engagement.

CASE STUDY

Long-term traineeship success through regional collaboration

Local water utilities (LWUs) on the Mid-North Coast of NSW have successfully trained National Water Package (NWP) trainees for more than 20 years. This includes MidCoast Council, Port Macquarie-Hastings Council, Kempsey Shire Council, Nambucca Valley Council, City of Coffs Harbour, and Clarence Valley Council.

This long-term program has established a structured traineeship model to support school-based trainees, post-school entrants, and individuals transitioning from unrelated industries. Trainees typically follow a two-year pathway, ensuring they develop the necessary qualifications and hands-on experience:

- **Year one:** Trainees complete the NWP Certificate II (Water Industry Operations) qualification
- **Year two:** Trainees demonstrating strong work performance and successfully completing Certificate II progress to NWP Certificate III (Water Industry Operations).

This approach has proven effective in developing skilled workers, offering employers a reliable framework for workforce planning.

At the end of the second year, trainees are encouraged to apply for council roles, with many securing full-time employment. Others transition into positions across the broader water industry, leveraging the skills and experience gained during their traineeship.

Beyond technical training, trainees receive exposure to council recruitment and interview processes, equipping them with the confidence and practical skills to pursue career opportunities in LWUs.

For mature-age trainees with previous water industry experience (for example, plumbing), the most common pathway is direct entry into NWP Certificate III (Water Industry Operations). Plumbers with relevant experience may be eligible for recognition of prior learning (RPL) for some previously acquired skills.

Introducing structured formal training for experienced workers provides an opportunity for RPL while allowing them to gain a formal qualification. This process helps them validate their skills and experience, ensuring they feel supported in their roles while mentoring new trainees. Integrating RPL into workforce development enables councils to reinforce the expertise of experienced staff while fostering a strong mentoring culture within the industry.

Registered Training Organisations (RTOs) usually require a minimum number of 6 students to provide on-site, regional, face-to-face training. Regional collaboration for traineeship intakes ensures the neighbouring councils can meet the minimum number of students for training delivery. Benefits also include trainees forming relationships and support networks with their peers from neighbouring councils. This provides benefits beyond the traineeship into longer term employment.

Key learnings

- A two-year traineeship effectively supports new entrants from school or other industries.
- Progression from Certificate II to Certificate III helps trainees build skills while meeting industry standards.
- Structured mentoring and rotation across different work areas enhance practical experience.
- Many trainees secure full-time council positions or transition into broader industry roles.

2 What a Water Industry Traineeship involves

Water industry traineeships follow nationally recognised qualifications, ensuring trainees develop practical, hands-on skills and knowledge required for operational roles.

2.1 Understanding the framework

2.1.1 Available qualifications

There are two core qualifications available for trainees.

Certificate II in Water Industry Operations (NWP20122)

- Typically completed full-time in 12 months for standard trainees.
- Up to 2 years part-time for school-based trainees due to structured workplace and study requirements. (See section 2.2 for more information on SBTs.)
- Covers workplace safety, environmental compliance, and core industry skills.
- Ideal for first-year trainees, providing a strong foundation for further development.

Certificate III in Water Industry Operations (NWP30222)

- An additional 12 months, building on foundational knowledge with advanced training.
- Covers water treatment, distribution, and infrastructure maintenance.
- Suitable for second-year trainees, and staff with existing skills and qualifications, preparing them for long-term roles in the industry.

Trainees undertaking either qualification will gain technical expertise, regulatory knowledge, and practical work experience, ensuring they meet workforce demands.

2.1.2 Training plan requirements

Employers must ensure trainees complete an approved training plan, which includes:

- mandatory core units to meet industry-wide competency standards
- elective units tailored to business needs and operational requirements
- a mix of classroom-based learning and on-the-job experience, ensuring practical application of skills
- workplace supervision and mentoring to reinforce industry-specific competencies
- scheduled assessment milestones to track trainee progress and performance.

2.1.3 Competency benchmarks and workplace expectations

Employers should work closely with RTOs to design customised training plans that align with industry standards. LWUs must meet specific competency benchmarks set by the NSW Department of Climate Change, Energy, the Environment and Water (the department).

Trainees should also receive exposure to various water industry sectors, including:

- **catchment and environmental management** – understanding water sources and sustainability
- **operations and maintenance** – practical work in water distribution and infrastructure
- **water and wastewater treatment** – training in purification processes and compliance.

For detailed competency benchmarks and unit requirements, refer to Appendix C: Units of competency.

2.1.4 Tracking progress and performance

Employers should use structured monitoring tools to assess trainee performance at regular intervals. This ensures trainees develop the required skills and complete their qualification within the expected timeframe.

For templates and structured training guides, refer to Appendix B: Example trainee monitoring and performance report form.

2.2 School-Based Traineeships

A School-Based Traineeship (SBT) allows high school students to begin their water industry career while completing their Higher School Certificate (HSC).

What is a SBT?

- A part-time employment arrangement for students in Years 10, 11, or 12.
- Students complete Certificate II in Water Industry Operations (NWP20122).
- Combines paid work, structured training, and school studies.
- Provides credit towards the HSC and a nationally recognised qualification.

Employer responsibilities for SBTs

- Employing a school-based trainee under the correct award.
- Providing structured workplace training – minimum 100 days over the traineeship period.
- Ensuring study and training balance between school and work commitments.

Steps to recruit a SBT

- Register an Expression of Interest with the NSW Department of Education: School-Based Traineeships.
- Work with a Regional SBT coordinator to match students with traineeships.
- Sign the traineeship contract and enrol with an RTO that is part of the Smart and Skilled program to deliver the Certificate II qualification.
- Ensure students meet their training requirements, completing a minimum of 100 days of work and training by 31 December of their HSC year.

> School-Based Traineeships allow students to gain real-world experience and employment while earning a qualification, helping them transition into full-time roles within the water industry.

2.3 Working with Group Training Organisations

Employers can choose to hire trainees directly or partner with a Group Training Organisation (GTO) to manage the traineeship.

What is a GTO?

A GTO is an organisation that employs apprentices and trainees under the NSW Apprenticeship/Traineeship Training Contract and places them with host employers such as LWUs. GTOs use apprenticeships or traineeships to provide an alternative pathway for individuals to complete a qualification. This encompasses structured support throughout their employment.

A GTO assumes employer responsibilities, ensuring the quality and continuity of a trainee's employment and training. This includes handling payroll, workplace supervision plans, compliance, personal mentoring, and training coordination. This enables host employers to focus on their core operations. However, a GTO does not provide additional specific on-the-job technical support.

GTOs can be registered or unregistered, operate for-profit or not-for-profit, and may function as labour hire companies. Registered GTOs meet the National Standards for Group Training Organisations and are encouraged to register with Training Services to be recognised as quality providers.

GTOs are particularly valuable for small or specialised employers, or those unable to commit to the full apprenticeship or traineeship period. They help mitigate employment risks while ensuring apprentices and trainees receive structured, high-quality training in a safe and supportive environment.

Some GTOs may also hold National Apprentice Employment Network (NAEN) membership.

Advantages of using a GTO

Partnering with a GTO offers several benefits to host employers and trainees, including the following.

- **Reduced administration** – The GTO manages employment contracts, wages, and compliance while handling government paperwork related to traineeships. This includes federal government incentive payments and state government paperwork to register the contract of training. Australian Apprenticeship Support Network (AASN) providers often process these arrangements to ensure employers receive financial incentives from sign-up to completion.
- **Workforce flexibility** – If a trainee is not suited to the host employer, the GTO can facilitate a replacement.
- **Structured support** – Trainees are assigned a field officer to assist with mentoring, workplace supervision, and career guidance.
- **WHS compliance** – GTOs assist with workplace risk assessments and safety management.
- **Higher completion rates** – Trainees in GTOs complete at higher rates than direct-employment models.
- **Operational expenditure (OPEX) classification** – Wages and fees paid to a GTO count as OPEX rather than capital expenditure (CAPEX).
- **Support for smaller employers** – GTOs help businesses that lack resources manage traineeships independently.
- **Diversity and accessibility** – GTOs support hiring diverse candidates, including younger workers and Indigenous trainees.

Considerations when using a GTO

While GTOs provide advantages, employers should be mindful of some elements.

- **Funding arrangements** – Some government incentives go to the GTO, not the host employer, though quality GTOs pass on benefits.
- **Training control** – Employers may have limited input on trainee units of competency (UOC), but GTOs collaborate with RTOs and host employers to align training.
- **Workforce integration** – Trainees under GTOs aren't counted in the host employer's workforce numbers, which may affect workforce planning.
- **Coordination needs** – Success relies on strong communication between the employer, GTO, and training provider.
- **Cost structures** – While reducing administration, employers should review GTO fee models to ensure alignment with budget and workforce needs.

CASE STUDY

Shoalhaven Water: Workforce development through group training

Shoalhaven Water is the largest local government water utility outside the Sydney basin and oversees an extensive network of water and sewer infrastructure. As with many local governments, Shoalhaven Water faced the challenge of an ageing workforce and declining skills base, requiring a strategic approach to sustain operational efficiency and future workforce planning.

To address these challenges, Shoalhaven Water partnered with a GTO, now Zeal Futures, and launched a Certificate II in Water Operations traineeship program in 2009. The program was designed to provide a structured career pathway, ensuring a steady supply of skilled staff capable of maintaining critical water and sewer assets.

Potential trainees negotiate a rigorous selection process including literacy and numeracy assessments, mechanical comprehension testing, and workplace attitude evaluations. Trainees receive structured workplace experience alongside formal off-the-job training, equipping them with technical and operational skills relevant to water industry roles.

This shift away from short-term labour hire resulted in significant financial savings, improved productivity, and a more reliable pipeline of skilled workers. Shoalhaven Water embedded the program in its workforce culture, employing about 10 trainees per year, which represents 8% of its operations workforce.

Key learnings

Shoalhaven Water's long-term traineeship program highlights several important lessons for workforce development in LWUs.

- **Structured traineeship models build workforce sustainability** – Graduates are well-equipped with technical and operational skills, ensuring smooth transitions into full-time roles with minimal disruption.
- **Long-term employment pathways strengthen industry retention** – More than 18 trainees have transitioned into permanent positions, demonstrating the program's ability to create a reliable talent pipeline.
- **Younger workers help address ageing workforce challenges** – Many trainees progress into senior operator roles, supporting succession planning and long-term industry stability.
- **Reducing recruitment costs through traineeship programs** – Having a consistent stream of trained workers lowers recruitment and onboarding expenses for the organisation.
- **Local training programs support regional employment** – Providing employment opportunities within Shoalhaven reduces youth migration and contributes to the local economy.
- **Recognition reinforces industry leadership** – Shoalhaven Water's success earned it the large employer of the year award (NSW and Australian Training Awards, 2017), highlighting the effectiveness of structured workforce development initiatives.
- **Ongoing refinement and expansion keep programs relevant** – Due to continued success, Shoalhaven Water is exploring School-Based Traineeships to further develop early-career pathways.

3 How to successfully implement a traineeship program

3.1 How to sign up a water industry trainee

Employers must follow a structured process to officially enrol trainees and ensure they receive suitable training.

Step-by-step process for employers

1 Choose the right qualification

- Certificate II in Water Industry Operations (NWP20122)
- Certificate III in Water Industry Operations (NWP30222) or

Find more details on these qualifications: Water Industry Training Details.

2 Select a Registered Training Organisation (RTO)

- Find RTOs authorised to deliver NSW Smart and Skilled traineeships: Smart and Skilled Provider List.

3 Contact an Australian Apprenticeship Support Network (AASN) provider

- AASNs assist with setting up training contracts, paperwork, and employer incentives.
- Locate an AASN provider: Search AASN Providers.

4 Sign a traineeship contract

- Employers must pay the trainee according to award wages.
- Find award rates in the NSW Local Government Award 2023, Clause 32C: Local Government Award.

5 Provide workplace training and mentoring

- Ensure the trainee gets on-the-job training and exposure to key competencies.
- Employers have a duty of care to supervise and support trainees throughout the program.

> Following these five key steps enables organisations to ensure their traineeship program is structured, compliant, and effective in developing skilled water industry professionals.

3.2 Employer responsibilities and support

Employers play a crucial role in mentoring and supporting trainees, ensuring they develop the necessary skills and knowledge for a successful career in the water industry.

Key employer responsibilities.

- **Duty of care** – Providing a safe and supportive work environment.
- **Supervision and mentoring** – Assigning experienced staff to guide trainees.
- **Structured on-the-job training** – Giving trainees hands-on experience in different areas.
- **Time for study** – Ensuring trainees have regular study days to complete assessments.
- **Performance monitoring** – Using structured check-ins to track trainee progress.

Workplace experience and rotation

Trainees should gain experience across multiple areas, including:

- **operations** – day-to-day water supply and distribution
- **construction** – pipe installation and infrastructure projects
- **treatment** – wastewater and drinking water processing
- **dams/catchments/headworks** – environmental management and water sourcing.

Regular workplace rotations help trainees develop a broad understanding of water operations while meeting competency requirements.

Investing in structured mentoring and supervision enables employers to ensure trainees gain practical skills and industry confidence, contributing to a strong and capable workforce.

3.3 Trainee recruitment and onboarding

Establishing a structured recruitment process ensures trainees receive the right support from day one. A well-planned onboarding process helps trainees transition into the workplace, building their confidence and technical skills. While the suggested intake cycle is common, LWUs can employ trainees at any time throughout the year to align with business needs.

A typical annual intake process timeline

Following a clear recruitment schedule will assist in a streamlined onboarding experience.

August – September

- Identify workforce needs with internal teams and training providers.
- Engage RTOs and GTOs.

October

- Advertise trainee positions using industry job boards, councils, and networks.

November

- Conduct interviews, medical screenings, and workplace assessments.

Use language, literacy, and numeracy tools (LLN) to determine readiness. (See Appendix D: Example language, literacy and numeracy (LLN) tools).

December

- Offer employment contracts to successful candidates.
- Finalise workplace rotation plans.

January

- Begin workplace inductions covering:
  - Safety procedures and WHS compliance
  - Workplace roles and responsibilities.

February

- Enrol trainees in Certificate II or III in Water Industry Operations (NWP20122 or NWP30222)
- Confirm training plan aligns with business objectives.

Selection criteria and assessment tools

Employers should assess trainees based on:

- technical aptitude and willingness to learn
- understanding of workplace safety and WHS compliance
- problem-solving skills and teamwork ability
- physical capability for water operations roles
- language, literacy, and numeracy capabilities.

A structured onboarding plan ensures trainees quickly adapt to workplace expectations while receiving consistent supervision and mentorship. Industry-best practice suggests employers should review their recruitment and onboarding processes throughout the traineeship. This ongoing assessment helps determine whether to offer continued employment at the end of the training contract.

For guidance on performance monitoring and trainee assessment templates, refer to Appendix B: Example trainee monitoring and performance report form.

Employer responsibilities

Employers must provide:

- workplace inductions covering safety, expectations, and technical skills
- mentoring and supervision to guide trainees in their roles
- regular performance reviews using structured monitoring tools
- workplace rotations across different areas, for example, treatment plants, catchment management, construction.

With the correct planning and support, traineeships can help strengthen the water workforce and provide long-term benefits for employers and employees alike.

3.4 Workplace-based training and employer obligations

When training is delivered at the workplace instead of an RTO venue, employers must:

- **provide paid study time** – release trainees from routine duties for at least three hours per week (averaged over four weeks) for training and assessments
- **ensure compliance** – support structured learning that meets competency benchmarks
- **align training with work duties** – integrate learning into daily operations while meeting formal qualification standards.

For more details, visit NSW Government: Apprenticeships and traineeships policies and procedures | NSW Government.

4 Additional resources and contacts

4.1 Funding and incentives for employers

Employers taking on water industry trainees can access financial support from the NSW Government and the Federal Government to reduce costs and encourage workforce development.

NSW government support

- **Fee-Free Traineeships** – Training Services NSW covers costs for eligible new entrants until 31 December 2025.
- **Payroll tax rebates** – Businesses may be eligible for payroll tax rebates for employing trainees.
- **Workers' Compensation apprenticeship incentives** – Financial assistance to reduce insurance costs for trainees.

Federal government support

- **Apprenticeship Priority List wage subsidies** – Employers hiring trainees in eligible roles receive:
  - 10% of wages paid for the first 24 months (up to $1,500 per quarter)
  - 5% of wages paid for the next 12 months (up to $750 per quarter).
- **Commencement and completion payments** – Employers may receive financial incentives when a trainee starts and completes their traineeship.

How to access funding

Employers can apply for funding and support through:

- **NSW Government:** Funding and Support for Employers
- **Federal Government:** https://www.apprenticeships.gov.au/support-and-resources/financial-support-employers.

> Understanding and leveraging these incentives can significantly reduce costs while improving workforce development in the water industry.

4.2 Contacts

Employers can access key resources to assist setting up and managing traineeships.

4.2.1 Registered Training Organisations (RTOs)

Find authorised RTOs delivering Certificate II and III in Water Industry Operations: Training.gov.au

Smart and Skilled traineeship providers in NSW: Smart and Skilled Provider List.

4.2.2 Financial incentives and funding

NSW Government Fee-Free Traineeships: Education NSW Fee-Free Training

Federal Government Apprenticeships Incentives: Apprenticeships Financial Support

Payroll tax rebate schemes & Workers' Compensation Insurance – Apprenticeship Incentive Scheme: NSW Government Apprenticeships Funding

Australian Apprenticeship Priority List (wage support for job roles): Australian Apprenticeships.

4.2.3 Traineeship set-up and support

Find an Australian Apprenticeship Support Network (AASN) provider: AASN Search

Employer responsibilities for traineeships: NSW Employer Guidelines

School-Based Traineeship information: NSW School-Based Traineeships

Local Government Award 2023 (trainee pay rates): NSW Local Government Award 2023

NSW Department of Climate Change Energy, the Environment and Water Revised Competency Benchmark with Implementation Actions: Skills, training and workforce development | NSW Government Water.

5 Appendices

Appendix A: Example traineeship brochure

Work in Water... Try it with a School-Based Traineeship

Why choose the water industry?

The water industry offers exciting, highly valued careers that support public health, environmental sustainability, and infrastructure development. With skills in demand across Australia and internationally, a career in water is future-proof and rewarding.

Career opportunities

The industry spans multiple sectors, including water sourcing, treatment, supply, wastewater management, regulation, and research. Careers include:

- **Engineering** – machine operators, technicians, and professional engineers specialising in civil, environmental, chemical, mechanical, and electrical fields.
- **Operations, maintenance and trades** – electricians, plumbers, welders, and technicians constructing and maintaining water networks.
- **Science and environment** – laboratory technicians, chemists, biologists, and hydrologists analysing water quality and environmental impact.
- **Policy and planning** – developing regulations, policies, and strategies for sustainable water management.
- **Communication and education** – public relations, community engagement, and educational outreach.
- **Corporate services** – finance, human resources, customer service, sales, information technology, and contract management.

What is a School-Based Traineeship (SBT)?

A School-Based Traineeship allows students in Years 11 and 12 to combine paid employment with formal training while completing their Higher School Certificate (HSC).

It's a great way to experience the water industry before committing to further study or full-time work.

Benefits of an SBT

- Earn a training wage while learning
- Gain industry-recognised skills and work experience
- Receive a minimum of 3 HSC units for your vocational qualification
- Option to undertake the industry-based learning course for an additional 3 HSC units
- Achieve a nationally recognised qualification with career pathways in the water industry.

What is a traineeship?

A traineeship is a structured training program that combines paid employment with formal study. Trainees work full-time or part-time with an employer while completing vocational qualifications.

Benefits of a traineeship

- Hands-on industry training with real employers
- A national qualification leading to career progression
- Opportunities to specialise in water operations, trades, engineering and environmental management
- Pathways to higher-level qualifications, including diplomas and university degrees.

How do SBTs and traineeships work?

For school-based trainees, employment is spread over at least 100 days during Years 11 and 12. Training includes approximately 180 hours of structured learning with an RTO, either in class or online.

For full traineeships, participants work with an employer while completing formal vocational qualifications. Training may be delivered on the job, at TAFE, or through other RTOs.

Employment schedules vary based on agreements between employers, schools, and training providers. These details may change if a qualification is updated or modified, so it's essential to refer to the latest Commissioners Information Bulletin (CIB) for the most up-to-date requirements on structured training hours and work expectations.

For current details on Water Operations traineeships, visit: CIB 714 – NSW Government.

Certificate II in Water Industry Operations

This qualification provides an entry point to the water industry, covering skills such as:

- Basic water sampling and quality testing
- Equipment operation and maintenance
- Environmental protection practices
- Workplace health and safety.

This pathway is ideal for students who enjoy problem-solving, working in teams, and applying technical skills.

Career Progression

With further training, you could pursue careers such as:

Certificate III in Water Industry Operations

This qualification builds on foundational skills and provides specialised training for roles in the water industry, covering skills such as:

- Water quality monitoring and testing
- Operation and maintenance of water and wastewater systems
- Environmental procedures and risk management
- Pump station and network operations
- Compliance with industry regulations and safety standards.

This pathway is ideal for students who are ready to deepen their industry knowledge, take on more responsibility, and explore technical career opportunities in water management.

Qualification	Career pathways
Certificate II Water Industry Operations	School-based trainee, water treatment assistant
Certificate III Water Industry Operations	Water or wastewater treatment plant operator, networks team member, construction and maintenance officer, catchment officer
Certificate IV Water Industry Operations	Supervisor water or wastewater treatment, supervisor networks, trade waste controller
Diploma of Water Industry Operations	Manager treatment or networks
Advanced Diploma	Draughtsperson/technical officer
Bachelor's Degree	Engineer, environmental scientist, hydrogeologist, project manager, manager water and wastewater.

What happens after a traineeship?

- Employers are not obligated to offer permanent positions post-completion, but a vocational qualification and work experience provide a competitive edge.
- Graduates may continue studies at TAFE/university for higher qualifications in water operations, engineering or environmental science.

How much will I be paid?

School-based trainees are paid trainee rates under the relevant award, such as:

- Local Government state award 2023
- Water Industry Award 2020

Where to get more information

- Talk to your School-Based Traineeship Coordinator, Principal, or Careers Advisor
- Contact School-Based Traineeship Coordinators School-Based Traineeship Info
- Contact your local Australian Apprenticeships Centre (AAC) at Australian Apprenticeships Centre
- Contact HR teams at local water employers.

Appendix B: Example trainee monitoring and performance report form

The contents below are examples of forms used for trainee monitoring and performance. These examples are not accessible. If you would like assistance in reading or interpreting these please contact us on 1300 081 047 (Monday to Friday 9am to 5pm).

Work Rating Report	5 – Expectational	4 – Highly Effective	3 – Effective	2 – Improvement Required	1 – Unsatisfactory	Weighted Value (Office Use Only)	Weighed Score (Multiply value by weighted value)
Exceptional: Contributions and excellent work practices are widely recognised and consistently exceed expectations. Sets examples for others in work group.							
Highly effective: Most performance exceeds expectations and generally meets requirements and objectives with minimal direction and/or guidance.							
Effective: Performance meets established expectations; initiative, resourcefulness and good judgement are consistently exercised with guidance.							
Improvement required: There are effective moments, but performance often falls below expectations on work requirements and responsibilities.							
Unsatisfactory: Performance falls well short of expectations on critical work/safety and responsibilities. Problem behaviour impacts work results and/or others in the group. Regularly distracted by use of mobile devices during work time & activities.							
Performance							
Attitude to safety: Understands and applies WH&S policy and procedures. Uses and maintains personal protective equipment when required. Uses tools of trade correctly and safely. Identifies/reports and deals with hazards effectively. Maintains good personal hygiene and housekeeping practices.						4	
Ability to absorb trade/technical knowledge & skills: Demonstrates appropriate knowledge, methods & techniques consistent with level. Learns effectively from instructions & directions.						2	
Quality of work: Understands the need to produce quality work to meet asset & customer requirements.						2	
Productivity: Able to meet time requirements/productivity with experience, year and level. Identifies and uses equipment, tools and skills necessary to work efficiently.						2	
Attitude to work & training: Demonstrates appropriate interest & enthusiasm for all work & training activities.						2	
Co-operation: Willing to do above & beyond what is usually expected when requested. Demonstrates effective teamwork and assist others in the team.						2	
Initiative: Analyses tasks & proceeds without direct instructions within capability & safety protocols.						2	
Flexibility: Demonstrates capable performance & is able to multi-task safely						2	
Punctuality on the job: Commences work promptly & adheres to break times as Instructed.						2	
20-34: Below Average | **35-50 Average/Development Required** | **51-70: Effective** | **71-80: Highly Effective** | **81-100: Exceptional**				**Summary Score**			
Council Supervisor/Mentor Comments:							

Trainee/Student Comments:
Agreed Outcomes/Actions/To Be Updated and/or Reviewed at Next Meeting:

Supervisor/Mentor Name:	**Date:**
Supervisor/Mentor signature:	
Trainee Name:	
Trainee signature:	
Mangers Name:	
Managers signature:	

Appendix C: Units of competency

The contents below are examples of units of competency certificates. These examples are not accessible. If you would like assistance in reading or interpreting these please contact us on 1300 081 047 (Monday to Friday 9am to 5pm).

NWP Certificate II - SBAT Recommendation Packaging rules: A total of 11 units of competency comprising: 2 core units listed below, plus 9 general electives (2 flexible electives from this or any other TP)		
Core (Choose all)		
Core	BSBWHS211	Contribute to the health and safety of self and others
Core	NWPGEN018	Follow environmental and licensing procedures
General Electives (Choose a min of 6 units from list below)		
General options *** in Benchmark Cert III (Fundamentals)*	NWPGEN017	Apply the risk management principles of the water industry standards, guidelines and legislation
General options *** in Benchmark Cert III (Fundamentals)*	NWPGEN020	Sample and test source or drinking water
General options for SBATs	NWPGEN024	Identify the role and functions of the water industry
	NWPNET019	Prepare and restore worksite
	NWPNET063	Use digital imaging equipment in the field
	RIICOM201E	Communicate in the Workplace
	BSBOPS203	Deliver a service to customers
	CPCCOM1015	Carry out measurements and calculations
General Electives (Choose the remainder from list below)		
General Network options for SBATs	NWPNET049 (Note two units)	Construct and install water distribution assets (pre requisite - NWPNET064 Control electrical risk on network pipes)
	NWPNET050	Construct and install wastewater collection assets
	NWPNET063	Use digital imaging equipment in the field
Treatment options *** in Benchmark Cert III (Fundamentals)*	NWPTRT005	Monitor and operate water treatment processes
Treatment options *** in Benchmark Cert III (Fundamentals)*	NWPTRT027	Monitor and operate wastewater treatment processes
General options *** in Benchmark Cert III (Fundamentals)*	NWPGEN021	Sample and test wastewater

NWP Certificate III – Competency Benchmark for LWUs

NWP packaging rules:
A total of 11 units of competency comprising:
2 core units listed below, plus
9 general electives (2 flexible electives from this or any other TP)

Competency benchmark for NSW LWUs – all units are specified below

Core (Choose all)		
Core	BSBWHS308	Participate in WHS hazard identification, risk assessment and risk control processes
Core	NWPGEN019	Assess, implement & report environmental procedures
General Electives – Policy & Procedures and Networks		
Policy & Procedures *** in Benchmark Cert III (Fundamentals)*	NWPGEN017	Apply the risk management principles of the water industry standards, guidelines and legislation
	NWPGEN026	Provide and promote customer service
Networks *** in Benchmark Cert III (Fundamentals)*	NWPNET051	Monitor and operate water distribution systems
	NWPNET052	Monitor and operate wastewater collection and transfer systems
	NWPNET027	Monitor and operate pump stations
	NWPGEN019	Prepare and restore worksite
General Electives – Wastewater Treatment Stream		
Wastewater Treatment options *** in Benchmark Cert III (Fundamentals)*	NWPGEN021	Sample and test wastewater
	NWPTRT027	Monitor and operate wastewater treatment processes
	NWPTRT039	Operate and control solids handling processes
General Electives – Water Treatment Stream		
Water Treatment options *** in Benchmark Cert III (Fundamentals)*	NWPGEN020	Sample and test source water or drinking water
	NWPTRT005	Monitor and operate water treatment processes
	NWPTRT022	Monitor and operate hypochlorite disinfection processes
	NWPTRT007	Monitor and operate liquefied chlorine gas disinfection processes
		∟ MSMWHS216 Operate breathing apparatus
	NWPTRT006	Monitor and operate fluoride addition processes

Appendix D: Example language, literacy and numeracy (LLN) tools.

Examples of LLN tools that can be used for water industry trainees;

- Numeracy Indicator Tool, and
- Literacy Indicator Tool.

The following pages contain examples of toolkits fo LLN tools. These examples are not accessible. If you would like assistance in reading or interpreting these please contact us on 1300 081 047 (Monday to Friday 9am to 5pm).

FOR THE TRAINER

NWP30215 – Water Industry Operations &
NWP30315 – Water Industry Treatment

Numeracy Indicator Tool – Section A

Section A: For the Trainer

- Numeracy Indicator Tool – feedback and analysis

The purpose of this Numeracy Indicator Tool is to assist you to identify learner's strengths and gaps so where needed, you can plan and deliver training and assessment that explicitly addresses the numeracy/mathematics skills as part of the achievement of vocational competency.

If you identify gaps, talk to a numeracy/mathematics specialist Trainer about building in learning activities into training that explicitly address the numeracy/mathematics skills embedded in this qualification.

Section B: For the learner

- Numeracy Indicator Tool for the learner

Note: To develop this Numeracy Indicator Tool, the core and selected elective units of competency of this qualification were analysed and the numeracy requirements identified and aligned to the Australian Core Skills Framework (ACSF). This tool is specific to this qualification.

Name: .....

Date: .....

Group: .....

NWP30215 – Water Industry Operations &

NWP30315 – Water Industry Treatment

Tool	Needs support to use
calculator	
compass for drawing circles	
ruler using mm	
scale rule	
tape measure	

Question	ACSF Level	Skill	Answer	✓ or ×
1.	2	Adding decimals	3923.60	
2.	2	Subtracting decimals	2038.50	
3.	3	Converting m to mm	1000 mm	
4.	3	Converting mm to m	3.57 m	
5.	3	Calculating diameter	40 mm	
6.	3	Dividing using- mm	110 mm	
7.	3	Adding 10% using metres	363 m	
8.	3	Converting m to mm and division	32	
9.	3	Calculating cost	16 x $39.50 = $632.00 6 x $43.20 = $259.20 4 x $14.30 = $57.20 Sub Total = $948.40 $948.40 x 1.50 = $1,422.60	
10.	4	Multiplying using ratios	500 mm, 50 cm or 0.5 m	

11.	2	Naming 3D shapes	b = cube c = cone e = cylinder d = triangular prism a = rectangular prism	
12.	3	Matching net to 3D shape	c	
13.	3	Recognising common angles	c	
14.	4	Recognising Math's language and symbols- pi	c	
15.	3	Applying simple scale	a	
16.	4	Calculating volume of a cylinder	b	
17.	4	Calculating volume using formula	c & g	
18.	4	Recognising formula- Area of rectangle	d	
19.	4	Applying Area of rectangle	b	
20.	4	Calculating volume	56 m^3	

Comments:

FOR THE LEARNER

Name: .....

Date: .....

Group: .....

NWP30215 – Water Industry Operations & NWP30315 – Water Industry Treatment

Numeracy Indicator Tool – Section B

Instructions

- ✓ You **may** use a calculator
- ✓ You will need to use a ruler
- ✓ **Show** any working out in the spaces provided
- ✓ You will be given approximately 30 minutes for this task
- ✓ Don't **worry** if you can't complete all the questions
- ✓ **Do** as much as you can

This is not an assessment or test. It's a skills check to indicate your numeracy in relation to this qualification.

*It will help to **identify** strengths and skills gaps you may have.*

It is only an indicator tool.

Part A - Write your answer in the space provided

In your course you will use mathematical tools. Please indicate if you would like help to get started in your course with using the tools by ticking the boxes that apply to you.

Tool	I am confident with this tool and do not need assistance	I have used this tool but would like a refresher	I would like some help to get started
calculator			
compass for drawing circles			
ruler using mm			
scale rule			
tape measure			

Write your answers and any working out in the space provided:

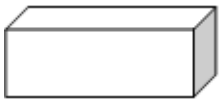
1. 3462 + 456 + 5.60 =	
2. 2496 – 457.5 =	

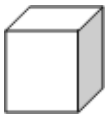
3. A pipe is 1 m long. How much is this in mm?	
4. A pipe trench is 3570 mm long. How much is this in metres?	
5. The radius of a circle is 20 mm. What is the diameter in mm?	
6. A pipe which is 550 mm long is cut into 5 equal pieces. How long is each piece?	
7. A sewer pipe needs to be laid with a fall of 1:60. (A fall of 1 m every 60 m) The pipe starts at ground level and runs 30 metres to meet the sewer. How far below the ground should the sewer inlet be?  (not to scale)	

8. You need 330 m of pipe to complete a job. Add 10% for wastage. How much pipe will you need?	
9. How many 50 mm lengths could be cut from a 1.6 m pipe?	
10. You need to prepare a cost estimate for the construction of a water service pipe. You will use: • 16 m copper tubing @ $39.50/m • 6 hours labour @ $43.20/hr • 4 welding rods @ $14.30 per rod You also need to add 50% to cover the organisational overhead costs. What would be the total cost estimate and show your calculations?	

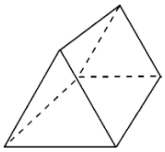
Part B

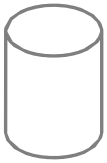
Look at these shapes to answer Question 11

a) 

b) 

c) 

d) 

e) 

11. Write a, b, c, d or e to match the shapes to their name

____ cube

____ cone

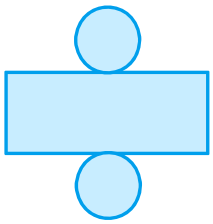
____ cylinder

____ triangular prism

____ rectangular prism

Multiple Choice (*circle the correct answer*)

12. This net matches which shape?



a) cube

b) cone

c) cylinder

d) triangular prism

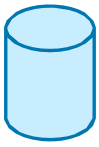
13. A right angle is

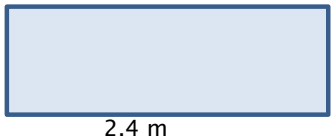
a) 30^o

b) 60^o

c) 90^o

d) 360^o

14. π approximately equals	a) 24 /13 b) (a + b) *x* c) 3.1416 d) 92.50
15. On a drawing with scale of 1:10, support straps are spaced at 5 mm. How far apart will you actually put them?	a) 50 mm b) 5 m c) 1:50 d) 100m
16. The volume of the water storage tank below can be worked out with which formula? 	a) l x w x h b) πr^2 X h c) $\sqrt{a^2 + b^2}$ d) ½ l x h
17. The above tank has a diameter of 2.2 m and height of 3.8 m. What would be the tank volume in; • cubic metres ($m^{3)}$, and • litres?	a) 6 m^3 b) 12.85 m^3 c) 14.45 m^3 d) 45.38 m^3 e) 6,000 litres f) 12,850 litres g) 14,450 litres g) 45,380 litres

18. To find the surface area of a pipe trench which is “a” metres wide and “b” metres long, which formula would you use? a  b	a) a x b b) $a^2 + b^2$ c) ½a x b d) $a^2 - b^2$
19. Calculate the surface area (m^2) of a pipe trench which is 1.4 metres wide and 2.4 metres long 1.4 m  2.4 m	a) 3.8 m^2 b) 3.36 m^2 c) 1.9 m^2 d) 4.2 m^2
20. Calculate the volume of the pipe trench (m^3) if it has the following dimensions; Width = 1.4 m Length = 16 m Depth = 2.5 m 	Show your working out here

FOR THE TRAINER

NWP30215 – Water Industry Operations
NWP30315 – Water Industry Treatment
Literacy Indicator Tool – Section A

Section A: For the Trainer

- Literacy Indicator Tool – feedback and analysis

The purpose of this Literacy Indicator Tool is to assist you to identify learner's strengths and gaps so where needed, you can plan and deliver training and assessment that explicitly addresses the reading and writing skills as part of the achievement of vocational competency.

If you identify gaps, talk to a literacy specialist Trainer about building in learning activities into training that explicitly address the reading and/or writing skills embedded in this qualification.

Section B: For the learner

- Literacy Indicator Tool for the learner

Note:
To develop this Literacy Indicator Tool, the core and selected elective units of competency of this qualification were analysed and the reading and writing requirements identified and aligned to the Australian Core Skills Framework (ACSF). The Tool is specific to this qualification.

Vocabulary Questions

ACSF Level	Descriptor	Answer	☑☒
3	• comprehends some specialised terminology in routine texts	1. c) check the details 2. b) breathe in 3. b) breathing in a substance 4. a) flood with flowing water 5. b) lasting longer than usual 6. c) having a fresh air flow	

ACSF Level	Descriptor	☑☒
2	☐ **Text structure**: writes at least 1 paragraph with clear beginning, middle and end; begins to sequence writing ☐ **Vocabulary**: includes personal details of self, most aspects of everyday life and other vocabulary of personal significance. ☐ **Grammar**: uses adjectives, pronouns and prepositions to describe people, places, things and events; ☐ Uses action words and simple verb tenses ☐ Uses simple cohesive devices, such as *and, but, then*. ☐ Uses time/location markers such as *first, then, yesterday, in.* ☐ **Punctuation**: uses basic punctuation, e.g. capital letters, full stops, commas. ☐ **Spelling**: variations do not interfere with overall meaning. ☐ **Handwriting**: is legible.	

Comments:

What causes workplace accidents?

- Untrained staff
- Not following WHS procedures
- Complacent
- Risk assessments not completed
- Untidy workplace
- Communications
- Planning; JSA, RA, SWMS, Incident Report

The effect of a workplace accident you have seen.

- Injuries

- Lost time
- Mental Health
- Death
- Fines & prosecutions

Who is responsible for workplace safety?

- Everybody,
- Supervisor/Managers/Engineer
- Employer
- Council

How workers can help to reduce workplace accidents?

- Follow procedures and always work safely,
- Communication
- Maintain & inspect/check PPE
- Safe systems of work including; risk register, SWMS, competent/licences, reporting; hazards, near misses, accidents, injuries

FOR THE LEARNER

Name: .....

Date: .....

Group: .....

NWP30215 – Water Industry Operations & NWP30315 – Water Industry

Treatment Literacy Indicator Tool – Section B

Instructions

- ✓ **Read** the '*Safety Data Sheet for Sodium Hypochlorite*
- ✓ **Answer** the questions in the following spaces provided.
- ✓ You will be given approximately 30 minutes for this **reading** task.
- ✓ **Complete** the Writing task.
- ✓ You will have about 10 minutes to **complete** this writing task.
- ✓ **Don't** worry if you can't complete all the questions.
- ✓ **Do** as much as you can.

This indicator tool will assist in identifying your reading and writing strengths and gaps in relation to this qualification.

Introduction

LIQUID CHLORINE – SODIUM HYPOCHLORITE NaOCl

This is a common and convenient form of chlorine. Its biggest disadvantage is that it is only 12–15% chlorine and so it entails transportation of a large quantity of water. Its second disadvantage is that it is unstable, decomposing with exposure to heat and light, releasing oxygen bubbles which can cause airlocks in dosing pumps, it is very corrosion to most metals and when in contact with some metals reverts back into salt water and oxygen, making it not very useful as a disinfectant.

However, it comes pre-dissolved in water and as a liquid it is easily handled and dosed into the water treatment process. A leak is annoying, but unlikely to be a disaster (as would a Cl_2 gas leak).

NaOCl solution arrives by tanker truck and is pumped into a storage tank from where it is pumped via a dosing pump into the process. Provided it is not contaminated, and it is regularly used and resupplied, it is quite stable, and this compensates for its loss of concentration. Good handling practice in the plant is needed to keep it away from heat and light.

However, NaOCl has a high pH. This is both as a result of the manufacturing process (bubbling Cl_2 gas through NaOH) and is also necessary to keep the NaOCl as a stable solution. Should the pH drop below 7 (i.e. become acid) then Cl_2 Chlorine gas will be liberated, along with its associated hazards.

Safety Data Sheet for Sodium Hypochlorite

1. IDENTIFICATION

Product Name	**Sodium Hypochlorite Solution 10-30%**
Other Names	Clorox; HypochloriteSolution; Hypochlorous acid-sodium salt; Mixture - All components listed on AICS
Uses	Dairy, food and beverage industries: Sanitising processing equipment. Textile industry: Bleaching agent. Water treatment: Sanitising agent. Available chlorine = 10 - 15%.
Chemical Family	No Data Available
Chemical Formula	NaOCl
Chemical Name	Sodium Hypochlorite Solution 10-30%
Product Description	No Data Available

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of water. Get medical aid immediately.
Eye	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately.
Skin	Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Discard contaminated clothing in a manner, which limits further exposure.
Inhaled	Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. DO NOT use mouth-to-mouth respiration.
Advice to Doctor	Symptoms caused by exposure: Chlorine gas released from sodium hypochlorite causes irritation of respiratory system, consisting in coughing, difficult breathing, stomatitis, nausea and pulmonary edema. Contact with skin can cause skin irritation, followed by blisters and eczema (especially at 12% concentration). The eye contact causes serious damages of eyes. Ingestion of tens of grams of sodium hypochlorite solution (12% concentration) can cause mucous membrane burns, perforation of the esophagus and stomach, and laryngeal oedema. Medical Attention and Special Treatment: In case of eyes and face splashing , treat eyes firstly. Treat symptomatically and supportively.
Medical Conditions Aggravated by Exposure	No information available on medical conditions aggravated by exposure to this product.

(Continued over ….)

7. HANDLING AND STORAGE

Handling	Protect against physical damage. Personnel which handling the product must wear protective equipment for hand, skin or eyes, and including protective breathing apparatus. Area should be well ventilated. Advice on general occupational hygiene: Avoid inhalation or ingestion and contact with skin and eyes. General occupational hygiene measures are required to ensure safe handling of the substance. Chemicals should be used only by those trained in handling potentially hazardous materials. The electrical equipment should be corrosion resistant.
Storage	Keep in tightly closed containers, store in a cool, dry, well ventilated area. Isolate from incompatible substances. The aqueous solutions are sensitive to light and air. Avoid storage for long period because the product degrades over time. The recommended storing temperature is 15-25 C. Storage at 15 C reduces the rate of decomposition. This product has a UN classification of 1791 and a Dangerous Goods Class 8 (Corrosive) according to The Australian Code for the Transport of Dangerous goods By Road and Rail.
Container	Materials used for storage tanks: • polyethylene; 5-7 years life time. The outdoor tanks will be UV proof. • glass fibre reinforced plastics – designed accordingly • steel rubber-lined (thickness of lining - ¾") • steel Halar lined (Halar is a copolymer 1:1 ethylene- chlorotrifluoroetylene) ; 3-6 years life time function of quality of lining application. • titanium – the best material used for tank construction but because the high price is used only for specific applications. Incompatible materials: reducing agents, combustible materials (wood, cellulose), organic materials, metals, acids. Materials to avoid: carbon steel, stainless steel, copper and its alloys, aluminium, unprotected metals.

10. STABILITY AND REACTIVITY

General Information	Reactivity: Reacts violently with acids with chlorine released. Possibility of Hazardous Reactions: Sodium hypochlorite is extremely corrosive for aluminium, brass. Reacts with metals (nickel, cooper, tin) with oxygen release, with ammonia urea, oxidisable substances, ammonium nitrate, ammonium oxalate, ammonium phosphate , ammonium acetate , ammonium carbonate , cellulose and methanol.
Chemical Stability	Unstable. Stability decreases with concentration, heat, light exposure, decrease in pH and contamination with heavy metals, such as nickel, cobalt, copper and iron. In practice, a factor of 2 decrease in concentration produces nearly a factor of 5 decrease in decomposition rate at any given temperature with a pH range of approximately 11 to 13. At pH<11, sodium hypochlorite is unstable and decomposes with the release of chlorine.
Conditions to Avoid	Light, heat and incompatibles.
Materials to Avoid	Incompatible materials and possible hazardous reactions: aluminum, brass, cellulose, steel, stainless steel, bronzes. Strong acids, strong oxidizers, heavy metals (which act as catalysts), reducing agents, ammonia and ammonium salts, ether, and many organic and inorganic chemicals such as paint, kerosene, paint thinners, shellac.
Hazardous Decomposition Products	Emits toxic fumes of chlorine (hypochlorous acid and sodium chlorate) when heated to decomposition. The decomposition is an exothermal process.
Hazardous Polymerisation	Sodium hypochlorite is extremely corrosive for aluminium, brass. Reacts with metals (nickel, cooper, tin) with oxygen release, with ammonia, urea, oxidisable substances, ammonium nitrate, ammonium oxalate, ammonium phosphate ,ammonium acetate , ammonium carbonate , cellulose and methanol.

(Continued over ….)

Comprehension Questions:

Safety Data Sheet for Sodium Hypochlorite

Read the Introduction LIQUID CHLORINE – SODIUM HYPOCHLORITE (NaOCl) to answer the following questions:

Circle the correct answers.

1. The main disadvantages of Sodium Hypochlorite include:	a) It is unstable, decomposing with exposure to heat and light, b) Releases oxygen bubbles which can cause airlocks in dosing pumps, c) It is very corrosive to most metals and when in contact with some metals reverts back into salt water and oxygen d) All the above
2. The pH of Sodium Hypochlorite solution is?	a) High, or b) Low.
3. If the pH of Sodium Hypochlorite solution falls below pH 7 what dangerous gas will be released?	a) Carbon Dioxide, b) Oxygen, c) Chlorine Gas, or d) Carbon Monoxide

Use the text 'Safety Data Sheet for Sodium Hypochlorite' to answer the following questions:

Circle the correct answer.

4. The **main** purpose of this Safety Data Sheet is to:	a) How to store the product, b) Provide information on how to safely handle and use the chemical product, c) Advertise the product, or d) List the product names.

Answer these questions in the space provided.

5. What is Sodium Hypochlorite used for?	_____ _____ _____ _____ _____ _____

6. What is the available chlorine level range in %?	_____		
7. List three (3) steps to take if someone gets sodium hypochlorite into their eyes.	1. _____ _____ _____ 2. _____ _____ _____ 3. _____ _____ _____		
8. What is the recommended storage temperature range (degree C) for Sodium Hypochlorite?	_____ _____		
9. What is the UN classification number and Dangerous Goods Class No (description) for Sodium Hypochlorite?	UN Classification - _____ Dangerous Goods Class - _____		
10. Are these statements about ***Sodium Hypochlorite*** true or false? Circle T if true or F if false	i) If someone swallows *Sodium Hypochlorite*, you should make sure they vomit.	T	F
	ii) If *Sodium Hypochlorite* comes into contact with skin, the area should be held under running water for 15 minutes.	T	F
	iii) *Sodium Hypochlorite* does not mix safely with acids	T	F
	iv) *Sodium Hypochlorite* should be stored in a warm position and in direct sunlight.	T	F
11. List three (3) incompatible materials which react adversely with ***Sodium Hypochlorite***?	1. _____ 2. _____ 3. _____		
12. What is the chemical formula for ***Sodium Hypochlorite***?	_____ _____		

Vocabulary Questions:

Safety Data Sheet for Sodium Hypochlorite

For each question, circle **a) b) c) or d)** to show the answer that best matches the meaning of the word in **bold** type, as used in the article ***Safety Data Sheet for Sodium Hypochlorite***.

Question	Answers
1. If **clarification** or further information is needed… The word **clarification** means:	a) to repeat b) to leave out c) to check the details d) to put in writing
2. **INHALATION**: Remove the source of contamination or move the victim to fresh air The word **inhalation** means:	a) to swallow b) to breathe in c) to breathe out d) to sigh deeply
3. **INGESTION**: Do NOT induce vomiting. Wash out mouth with water. Seek immediate medical …… The word **ingestion** means:	a) having an upset stomach b) breathing in a substance c) swallowing a substance d) absorbing a substance
4. If in eyes, hold eyelids apart and **flush** the eye continuously with running water The word **flush** means:	a) flood with flowing water b) the face or skin to redden c) drip water onto a surface d) press the button on a toilet
5. Repeated or **prolonged** contact with this material … The word **prolonged** means:	a) serious b) lasting longer than usual c) lasting a short time d) covering a large area
6. Store in a cool, dry, well-**ventilated** area, away from sources of ignition and out of direct sunlight The word **ventilated** means:	a) having many air vents b) closed off from air c) having fresh air flow d) well secured

Writing Task

- This is not a test. It is to see if you might need help with writing in your course.
- Use sentences and punctuation.
- If you are unsure about your spelling just have a try.

Work sites can be dangerous places particularly if safety precautions and standards are not followed. Write your opinion about the importance of workplace safety, particularly in your own workplace.

You could write about:

- what causes workplace accidents
- the effect of a workplace accident you have seen
- who is responsible for workplace safety
- how workers can help to reduce workplace accidents

Try to write at least half a page.

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