



LITERACY PROFILE:

Quarry Operator

This literacy profile identifies the reading, writing, speaking and listening, critical thinking and use of information communication technology used by quarry operators. Quarry operators use a range of different machinery including water carts, dump trucks, loaders, excavating machinery and mobile or fixed crushers. Individual quarry operators will use subsets of the skills depending on the work they do and their company's systems.

The profile does not cover literacy demands on full time weighbridge operators or people who handle explosives.

Reading tasks

"Read" implies that the person reads and understands.

Read signs and short texts

- Safety signs
- Product markers (e.g. GAP25/7)
- Notes and reminders on whiteboard
- Read-outs from digital and analogue dials and gauges on equipment (these may be read on a computer screen, depending on the equipment control system)
- Drop down menu on electronic systems

Read graphs and tables

- Production record forms
- Machine running record forms
- Inspection and audit checklists
- Shift rosters
- Payslip
- Production figures

Read and understand technical vocabulary

- Product abbreviations
- Rock types

Read plans

- Quarry plan or map – may include topographical photographs

Read memos, notices and brochures

- Memos from management
- Health and safety information – posters and information on notice boards, pamphlets

Read instructions

These may be contained in detailed and complex documents

- Equipment operation
- Job procedures
- Health and safety procedures
- ISO or other quality system procedures
- Hazard register
- Manufacturer's instructions for operating or adjusting equipment

- Emergency procedures
- Company policies
- Material Safety Data Sheets

Read employment related documents

- Leave forms
- Job descriptions
- Employment agreement
- Training agreements

Read training materials

- Unit standard training handouts
- Supplier training handouts
- Company training booklets



Reading skills

Interpret graphic symbols.

- Signs
- Colour coding

Recognise the features of a range of texts.

- Signs
- Codes
- Forms
- Procedures
- Manuals

Recognise number formats.

- Product numbers

Understand common and industry vocabulary.

Understand common and industry abbreviations.

Find out the meaning of unfamiliar words or phrases.

Use a reference source.

- Procedure manual
- Manufacturer's manuals

Follow written instructions (which may include diagrams).

Predict what will be contained in a text.

Use a guide to document contents.

- Index
- Table of contents

Identify the main points from a page of text.

Scan text or table or label to find specific piece of information.

Skim a text for "gist".

Read text thoroughly.

Make inferences based on what written material does not say.

Understand information in graphic material.

- Tables
- Graphs



Writing tasks

Sign off documents to confirm read (or attended) and understood

- Work procedures
- Training register
- Meeting register

Complete forms and questionnaires independently

- Production records
- Maintenance checklist
- Machine log
- Weighbridge sales records
- Time sheets
- Leave forms
- Employee details forms
- Wage deduction or authorisation and IRD
- Medical history form

Complete forms with the assistance of others (some forms include diagrams)

- Health and safety – hazard notification, incident and accident forms
- ACC reporting forms

Write for training purposes

- Write notes during training sessions
- Write answers to assessment questions



Writing skills

Understand that different writing styles are used for different types of writing.

- Notes
- Forms
- Assignments (training)
- Assessments (training)

Sign name on forms to indicate understanding.

Write simple correct text in appropriate places and in appropriate formats on job sheets and forms.

- Use legible handwriting
- Use recognisable spelling and abbreviations
- Writing should stay on the line

Complete forms using numbers, single words, or short sentences.

- Handwriting must be legible
- Abbreviations can be used
- Spelling must be understandable, but correct spelling is not essential
- Grammar and punctuation must be understandable

Take notes from material read (training).

Write short answers to assessment questions (training).

- Handwriting must be legible
- Abbreviations can be used
- Spelling must be understandable, but correct spelling is not essential
- Grammar and punctuation must be understandable

Speaking and listening tasks

- Discuss work with colleagues
 - report own job progress
 - ask for and offer assistance
- Listen to and comprehend work instructions from supervisor
- Listen to and comprehend verbal explanations and training instructions from supervisor / trainer
- Listen to briefings when information is provided (e.g. production figures, safety reminders, work roster plans)

- Listen to noise made by machinery to identify if it is working as it should
- Listen for noise codes (e.g. 1 toot for start up, 2 toots for moving forward)
- Ask questions to clarify and check details during oral instruction
- Provide verbal reports to supervisor e.g. progress with work, problem with machinery, health and safety incident
- Provide personal history details during interviews (e.g. medical history, work history)

- Describe a sequence of events, especially relating to accidents or incidents
- Suggest reasons why something may have happened
- Suggest solutions or improvements
- Provide oral instructions and training for new staff
- Participate in meetings
- Participate in group discussions during training sessions
- Discuss issues such as employment conditions and workplace conflict situations with the appropriate people (supervisors, colleagues, union representative)
- Answer oral assessment questions
- Communicate in noisy environment using hand signals and gestures

Notes:

- (1) There is heavy dependence on verbal communication to share information and give instructions in quarries
- (2) Verbal communication is done face to face, on RT and by telephone



Speaking and listening skills

(NB Speaking and Listening includes non-verbal communication)

Speak clearly.

Discuss topics which are appropriate in work context.

Use words, pronunciation, and tone appropriate to situation and audience.

Open and close conversations appropriately.

Give information in a sensible order.

Plan and deliver oral instructions in a logical order and to suit the audience.

Understand that communication is a two way process.

Use active listening skills.

- Repeat message back to sender
- Summarise instructions in own words
- Use following techniques e.g. say "aha" or "okay" as you follow what someone is saying

Present and defend a viewpoint.

Use hand signals and gestures to communicate in noisy environment.

Use questioning techniques including using open and closed questions to gain information, check understanding and encourage further discussion.

Summarise to check or clarify details.

Use suitable body language.

Read body language of person speaking, or being spoken to, and respond appropriately.

Understand that there are barriers to communication, especially in a cross-cultural situation.

Numeracy tasks

- Weigh product and read scales
- Count and tally weight of rock produced or moved
- Monitor downtime of equipment (to minimise downtime)
- Record running hours of machinery
- Complete timesheets
- Calculate how much product can be loaded on to a truck (using knowledge of TARE and gross weight)
- Understand capacity of machinery – e.g. how many tonnes in bucket of loader, how many tonnes per hour a crusher can produce
- Monitor production rates of machinery
- Estimate if there is enough product in a stockpile to fill an order
- Estimate how much to fill loader bucket for part orders
- Gather information from production tables and graphs
- Review pay slip
- Identify aggregate products by shape and size (e.g. this is GAP20, that is GAP65, that is GAP40)



Numeracy skills

Recognise numbers as part of a code.

Use numbers.

- Whole numbers
- Decimals
- Fractions
- Percentages

Do number problems.

- Addition
- Subtraction
- Multiplication
- Division

Understand place value.

Estimate weight.

Measure weight accurately.

Use 12 or 24hr clock.

Recognise a range of formats for presenting data.

- Graphs
- Bar charts
- Pie charts
- Pictograms

Interpret numerical information represented in different ways.

- Graph
- Table
- Scale
- Dial

Critical thinking tasks

- Judge if you can do the job (skills, knowledge and experience) and ask for assistance if necessary
- Be aware of company quality standards and complete work in ways that meets those standards
- Be aware of company health and safety standards and complete work in ways that meets those standards
- Identify the possible health and safety consequences of work activities
- Plan and take appropriate actions to avoid health and safety incidents
- Monitor how machinery is performing and make adjustments if needed
- Listen for noises machinery makes when it is not working correctly, and act to fix the problem
- Use equipment within its capacity
- Identify when one product has become mixed with another type of product and take action to correct

Critical thinking skills

Apply knowledge of safety requirements and principles to work practice.

Understand the quality assurance system and the implications of this for your work role.

Identify if you have enough knowledge and skill to take action on own.

Identify when you need assistance from others.

Recall and follow specified procedures to deal with contingencies.



Information and Communication Technology Tasks

- Monitor plant using automated control system
- Adjust plant using automated control system
- Take readings from electronic displays
- Enter data into plant control system e.g. reason for downtime



Information and Communication Technology Skills

Information and Communication Technology Skills

Understand the names of, and basic purpose for, computer hardware devices.

- Keyboard
- Mouse
- Screen
- Printer

Understand how to operate a computer to run a software application.

- Start the computer
- Log-in if needed
- Start appropriate application
- Exit application
- Turn off computer

Understand common computer functions and features.

- Open
- Save
- Close
- Menu
- Toolbar

Enter or update data on a computer.

- Keyboard
- Mouse
- Other input device

Notes:

This profile was developed following visits to four different quarrying operations. We reviewed the literacy demands on people operating a range of quarrying machinery including water carts, dump trucks, loaders, excavating machinery, and mobile or fixed crushers.

The profile does not specifically cover literacy demands on full time weighbridge operators or people who handle explosives.

The profile represents all of the tasks and skills required for various roles in different quarrying work places.