Practice Aptitude Quiz

Building and Construction - Finishing Trades

Guidance

This Practice Aptitude Quiz is intended to be a general illustration of some of the key learning standards required of people attempting an Australian Apprenticeships entry level qualification in the Building and Construction Finishing Trades of Wall and Floor Tiling, Painting and Decorating, and Wall and Ceiling Plastering.

This Practice Aptitude Quiz is neither a formal assessment tool nor a direct pre-requisite for any job application.

This quiz has been developed with the assistance of industry, training providers and the secondary school sector as a careers resource.

The quiz focuses on literacy, numeracy, comprehension and problem solving questions contextualised to this specific industry.

The quiz can be utilised by numerous organisations and people such as careers practitioners working with young people, Group Training Organisations and Job Services Australia providers working with job seekers.

The Practice Aptitude Quiz can be:

> Used by careers practitioners with individuals or in a class setting to provide general guidance on the level of study involved in undertaking an entry level qualification in this industry;

> Provided to people to enable them to practice their skills before sitting an actual aptitude test;

> Used by Mathematics teachers as a guide to industry maths requirements at the entry point of this particular Australian Apprenticeship.

The level of reading, writing and mathematical skills assessed by this quiz is equivalent to that of a typical person at Year 11 level.

Please note that rates quoted in this assessment for various items, including pay rates, are not meant to reflect today's values, but are used purely for mathematical purposes.

The quiz should be able to be completed in approximately 45 to 60 minutes.

Calculators may be used to complete this practice exercise.

Answers are located at the end of the quiz.

Occupational Information and Job Hunting Resources

Information and links on the Building and Construction Industry Finishing Trade careers, job prospects as well as career websites and job hunting resources can be found at www.aapathways.com.au/Quiz. Look for 'Building and Construction'.

After the Quiz

There are a range of support services available to help you find out about courses that may help you improve your literacy and numeracy skills and also your readiness for work.

If you are still at school you should discuss any concerns you may have with your career practitioner. Further information may also be provided by a Job Services Australia provider, an Australian Apprenticeships Centre, a Group Training Organisation or a training provider.

Useful Contacts

Here are some links to job seeker support services:

> Search for your local Australian Apprenticeships Centre - www.aapathways.com.au/aac

> Find a local Group Training Organisation - www.grouptrainingdirectory.com.au

> Job Services Australia providers work with eligible job seekers to develop an individually tailored Employment Pathway Plan. The plan maps out the training, work experience and additional assistance needed to find job seekers sustainable employment - www.jobsearch.gov.au/provider/default.aspx

QUIZ

## Section 1 - Literacy, Reading and Comprehension

Spelling

1. **The following text has 10 spelling errors in it. List those errors with the correct spelling in the order you find them in the text.**

Today the Construction, Plumbing and Services Industry is worth over $50 bilion and employs over three quarters of a million people. The industry is divided into three sectors: domestic; comercial; and civil. The magority of workers are ether apprentises, trainees, construction workers or tradspersons. One of these trades is Wall and Ceiling Lining (Plastering). This trade involves the linning of the interior walls and ceilings in either domestic dwellings or commercial and industrial properties using plasterboard or fibre cement board. There are many carrer pathways and oportunities available to prospective employes willing to apply themselves.

2. **Write the correct spelling for the following words.**

Troweel	
Prefabrikated	
Demolishon	
Certifikate	
Hamma	
Plastrin	
Safty	
Sillycone	
Undercoate	

3. Write the following paint colour names in alphabetical order.

Hollywood Cerise

Antique White

Pacific Blue

Bondi Blue

Vermilion

Electric Purple

Mulberry

Veronica

Amaranth

Unmellow Yellow

Comprehension

4. Read the following passage and answer the questions that follow.

The Building and Construction industry covers many occupations including the three mentioned below.

Wall and Ceiling Fixers or Plasterers line the interior walls and ceilings of either domestic housing or commercial and industrial properties using plasterboard or fibre cement board.

The plasterboard is fixed to either a timber frame or a metal frame using a combination of fasteners and adhesives following the guidelines set down by Australian Standards and the manufacturers. It is then finished off using various compounds to give a clean smooth surface ready to take whatever decoration is specified, such as paint, wall paper or tiles. Projects can be as simple as a small house in the suburbs or as complicated as a large commercial property like a shopping centre.

Another area of the Building and Construction industry involves Wall and Floor Tiling occupations. Wall and Floor Tilers lay ceramic, clay, slate, marble, glass and other types of tiles on external and internal walls and floors to provide protective and decorative finishes. Much of the work is undertaken on new buildings including houses, shops, offices, factories and swimming pools, but wall and floor tilers also renovate existing buildings.

Wall and Floor Tilers sometimes work in confined areas where bending and kneeling are required. They also need to be physically fit as they may have to lift and carry bags of cement and stacks of tiles. They sometimes work at heights using ladders or scaffolding. Most tilers work in small teams and move frequently from one job location to another.

Painters and Decorators make up another part of the Building and Construction industry. They prepare surfaces, and apply paint, varnish, wallpaper and other finishes to protect, maintain and decorate interior and exterior surfaces of domestic, commercial and industrial buildings and other structures.

Personal requirements for Painters and Decorators include being physically fit; being able to work at heights; enjoying practical work; and having good hand-eye coordination. Having normal colour vision is also important in this occupation.

a.   What is the main purpose of the Plastering industry?

_____

_____

_____

_____

_____

b.   Name three examples of decoration listed above.

_____

_____

_____

_____

c.   Name three types of tiles from the examples listed above.

_____

_____

_____

_____

d.   Why do wall and floor tilers need to be fit?

_____

_____

_____

_____

_____

e.   What are the three Building and Construction industry occupations mentioned?

_____

_____

_____

_____

General Knowledge

5. **What tool is that?**

Match the tool names to the pictures of the tools.

a. _____

b. _____

c. _____

d. _____

e. _____

f. _____
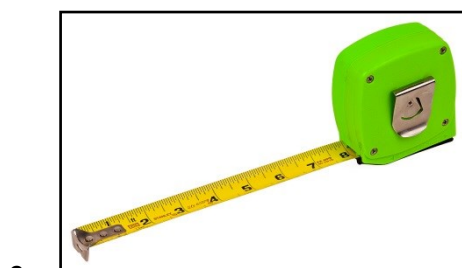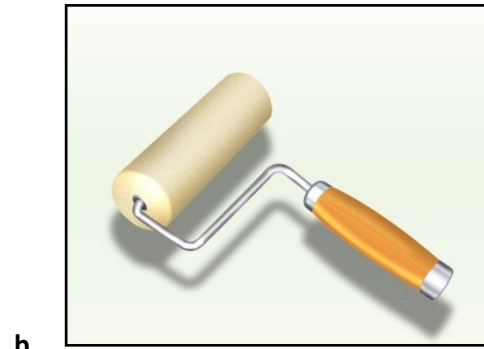
Names of Tools

Tape Measure   Stanley Knife   Paint Roller

Calculator   Hawk   Flat Trowel

QUIZ

6. **Read the following information and answer the questions that follow.**

Safe Painting and Decorating

There are common hazards in the painting and decorating industry. It is important to learn about these hazards and how they can be controlled so people at work are not exposed to risk.

Some of the common hazards include:

› Tools and equipment;
› Falls;
› Hazardous substances;
› Manual handling;
› Working in enclosed areas;
› Sunburn and heat stress.

Tools and equipment

A range of hazardous tools and equipment is found in the painting industry. For example, disc and belt sanders that are used to prepare surfaces for painting, portable air compressors and spray painting equipment, high pressure water cleaners, power drills, scrapers, and knives.

When equipment hazards cannot be sufficiently reduced, workers may need Personal Protective Equipment (PPE). PPE includes safety glasses or goggles, earplugs or earmuffs, protective gloves, overalls, and safety shoes or boots with reinforced toe-caps to protect your feet if any heavy or sharp items are dropped.

Prevention of falls

Falls are a major cause of workplace deaths each year. Painting often involves potential fall hazards. Work on roofs, at roof line or on multi-storey buildings is common, as is internal work, such as painting high ceilings.

The risk control options for working at heights are:
– installing fall protection devices such as temporary work platforms or scaffolding;
– using a work positioning system such as a rope access system to position and support the worker;
– using a fall injury prevention system such as an industrial safety net or harness;
– using a ladder, as long as it can be employed safely for the duration of the task.

Hazardous substances

In the painting industry workers may use substances such as solvents, wood dust and paints containing lead which can have both a short and long term impact on workers' health.

To minimise the risk of hazardous substances workers:
– should always follow safety procedures;
– should not use solvents to clean their hands;
– should clean up and dispose (in sealed polythene bags) of debris such as old paint stripped from timber;
– should wear the correct PPE provided, such as a dust mask, protective overalls, suitable gloves and eye protection when sanding.

Manual handling

Lifting and carrying paint cans, moving scaffolding and using paint brushes
in a repetitive action are some examples of manual handling tasks in the painting industry. At times work tasks may involve bending and stretching, as well as twisting sideways, or working with materials and equipment above shoulder height. All of these increase the risk of manual handling injury.

Risk controls may include:
  – organising the work to reduce the number of manual handling tasks involved;
  – making sure workers do not work long periods requiring strenuous manual handling activity;
  – making sure the work place allows enough space to move and work safely and comfortably.

Work in enclosed areas

Some painting jobs could require working in enclosed areas where lack of ventilation could increase exposure to paint fumes.

Options that could be evaluated to reduce risks include:
  – providing ventilation by opening any doors or windows in the work area;
  – Increasing air circulation by use of a portable fan;
  – limiting the amount of time any worker spends in an enclosed area;
  – providing workers with respirators to prevent inhalation of paint fumes.

Sunburn and heat stress

Heat stress, sunstroke, sunburn and skin cancer can all result from prolonged exposure to ultraviolet radiation from the sun. The longer the skin is exposed, the greater the risk regardless of tan or skin pigmentation.

Preparation for the job should include consideration of things like:
  – available shade;
  – frequency of rest breaks;
  – need for regular rehydration (by drinking water, not soft drinks);
  – awareness of each worker's heat tolerance (age, physical fitness and experience of the work can all affect a person's ability to adapt to hot or excessively humid conditions).

Protective clothing and sunscreen should always be worn when working in the sun. Head covering is important, as are loose, long sleeved shirts and long trousers in hot weather. Sunscreen should be rated SPF 15+ or more (this means it will give at least 15 times the protection that skin has without any covering). Sunscreen should be reapplied every two hours.

a.   **What are the six common hazards in the painting and decorating industry?**

_____

_____

_____

_____

_____

_____

b. List three ways falls can be prevented.

_____

_____

_____

_____

_____

c. What Personal Protective Equipment (PPE) must be used when working with hazardous substances?

_____

_____

_____

_____

_____

d. Name at least five manual handling activities and actions performed by painters?

_____

_____

_____

_____

_____

e. When might it be necessary to use a respirator and open windows?

_____

_____

_____

_____

_____

f. What protective clothing should be worn when working in the sun?

_____

_____

_____

_____

_____

Section 2 – Mathematics

Numbers (Measurement, Decimals, Rounding, Estimates, Scientific Notations)

1. **Match the abbreviations to the correct unit of measurement which they represent. Write your answers in the table below.**

    kg   ml   km/hr   m² $ m   min   °C

Length	
Time	
Temperature	
Weight	
Area	
Speed	
Volume	
Cost	

2. **Match the numbers to their descriptions. Write your answers in the table below.**

    3/8   35°   25%   5:4   16.37   2⅓

Percentage	
Decimal number	
Fraction	
Mixed number	
Ratio	
Angle	

3. **Write as a number:**

    a.   Two thousand six hundred and thirty four   _____

    b.   Fifty six thousand and eighty seven   _____

4. **Round:**

    a.   35.6754 to two decimal places   _____

    b.   425.8 to the nearest ten   _____

    c.   248 to the nearest hundred   _____

5. **Write the following decimals from highest to lowest.**

     7.19   71.9   0.719

_____

Operations
(Addition, Subtraction, Division, Multiplication)

6. **Solve the following equations:**

a. $2 + 3 \times 4 =$ _____

b. $4 - 10 \div 2 =$ _____

c. $50 + 50 =$ _____

d. $2 \times 25 =$ _____

e. $(16 - 5) \times 3 =$ _____

f. $(75 \div 5) \div (12 \div 4) =$ _____

g. $8^2 =$ _____

7. **Subtract:**

a. 1,784 from 5,218   _____

b. 29.461 from 43.18   _____

8. **Find the total of:**

a. $2.00, $21.45 and $8.23   _____

b. 18.32, 471.019 and 315   _____

c. 2.63m and 50cm   _____

9. **Multiply:**

a. 6.87 by 10   _____

b. 13.8 by 3   _____

c. 46.2 by 8.5   _____

10. Divide:

    a. 3.45 by 10   _____

    b. 3024 by 14   _____

    c. 56.2 by 9   _____

11. Select the best estimate for each of the following. Circle the correct answer.

    a. 4,249 x 71

        280,000   150,000   28,000

    b. 80,000 ÷ 38

        200   2,000   20,000   4,000

Fractions

12. Add the following:

    a. 1/4 and 1/2   _____

    b. 2/9 and 5/6   _____

    c. 3 1/4 and 1/8   _____

13. Subtract the following:

    a. 5/6 - 1/4   _____

    b. 21/14 - 4/7   _____

14. Which fraction is mid-way between ¼ and ¾?   _____

Percentages

15. Michelle earns $800 a week. She gets a pay rise of 5%. What is her new wage?

    _____

16. **Mal purchased a plaster mixer for $250 which he later sold for $375.**

   a. How much profit did he make?

   _____

   b. What was the profit as a percentage of the cost price?

   _____

17. **Rebecca is a plasterer who buys the following items from a plaster store: plasterboard $215, trowels and reinforcing tape $95, fasteners and adhesive $12, and plastic mixing pots $8. Rebecca gets a 10% trade discount.**

   a. How much would Rebecca pay without the discount?   _____

   b. How much will she pay with the discount?   _____

   c. How much has Rebecca saved?   _____

18. **Akeem scored 80% in an exam. There were 25 questions.**

   a. How many questions did Akeem get right?   _____

   b. How many questions did he get wrong?   _____

Decimals

19. **Find the decimal number halfway between:**

   a. 0.6 and 0.8   _____

   b. 2.8 and 2.9   _____

Shapes

20. **Find the perimeter of these shapes.**
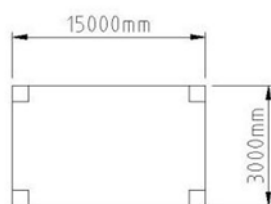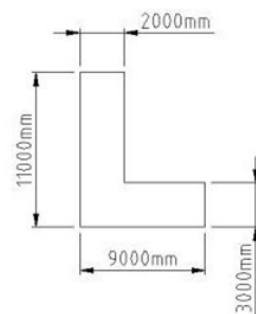
   a. _____   b. _____

21. If each square represents 1 square centimetre, what is the area of the shape shown?

_____

22. Calculate the area of this circle? Use the formula A = π r² where π = 3.14.

_____
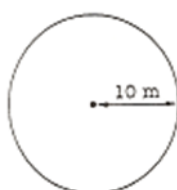
Problem Solving

23. Calculate the cost of 20 metal external angles at $3.00 per external angle.

_____

24. If five litres of plasterboard adhesive costs $65.00, how much will 1 litre cost?

_____

25. There are 7.2 square metres of plasterboard in a single sheet 6000mm x 1200mm. Simon is a plasterer. How many 6000 x 1200 sheets will Simon need to line the walls and ceilings in a house requiring 900 square metres of plasterboard?

_____

26. Gerry is fixing wooden battens to a timber frame. She hit a nail 65 mm long through the batten (which is 22.5 mm thick), and into the frame. How far did the nail go into the timber frame?

_____

27. If a 3600mm length of scotia cornice costs $3.50 a linear metre, how many complete metres of cornice could be bought for $60.00?

_____

28. **A plasterer estimates there are 7.2 square metres in a single sheet of plasterboard 6000mm x 1200mm. How many square metres are there in a pack of 50?**

   _____

29. **Complete these calculations.**

   Henry is tiling a bathroom wall, so first he calculates the area of the wall.
   The wall has a height of 2400mm and length of 3500mm. Henry's employer tells him to always add an extra 10% when calculating an order to allow for tile cuts and breakages.

   a. Calculate the area of the wall including the extra 10%.

   _____

   b. Henry also has to calculate a quote for laying the tiles. When laying the ceramic tiles used in the job, Henry's employer quotes on the basis of $95 per square metre. What will be the quote for this job?

   _____

30. **Danesh has been given the job of painting a meeting room in an office.**
   He must apply two coats of paint, with one litre of paint covering 16m^2.
   The dimensions of the room are: length 4m; height 2.4m; width 5m.

   a. Calculate the area to be painted. _____

   b. Calculate how many litres of paint Danesh will need? _____

31. **Painting the meeting room isn't as straight forward as Danesh first thought as he has to subtract the area of the windows and door in the meeting room from his calculation of the amount of paint he needs to paint the room.**
   There are two windows the same size: height 2m; length 1.5m.
   There is one door: height 2.04m; width 0.82m.

   a. Calculate the area of the windows and the door, and add them together. Round the answer to the nearest whole number.

   _____

   b. Recalculate how much paint Danesh will need to paint the meeting room.

   _____

   Ratios

32. **Adam always mixes 8 shovels of sand with 10 shovels of metal when he makes concrete. How many shovels of sand will Adam mix with 50 shovels of metal?**

   _____

33. **Jake is a first year apprentice with a large tiling company that employs three apprentices and six qualified Wall and Floor Tilers. He has been asked by his supervisor to check that there are adequate supplies of essential trade materials and hardware for the team.**

   Calculate and input in the shaded columns below:

   a. The 'Supplies to be ordered';

   b. 'Price of additional supplies';

   c. The 'Total cost of the order' for the additional supplies.

Item/s	Supplies in stock	Total supplies required	Price per item	Supplies to be ordered (a)	Price of additional supplies (b)
Adhesives, Grout & Additives					
Trade Mastic- 15 litre pail	7	10	$ 50.40		
Level Floor Filler – 20kg bag	80	480	$ 25.43		
Flexible Grout- 10kg bag	50	100	$ 17.95		
					Sub Total:
Silicones & Sealers					
Trade Silicone – white	4	35	$ 6.00		
Trade Silicone – grey	3	35	$ 6.00		
Polyurethane Sealant – black sausage 14LM	5	10	$ 10.00		
Paving Sealer- 6 litre pail	1	5	$ 77.00		
WD-40 - spray can	2	6	$ 9.95		
					Sub Total:
Hand Tools					
Trowel – 4mm	0	3	$ 17.50		
Trowel – 12mm	1	4	$ 24.10		
Notched scraper – 6 mm	1	4	$ 8.95		
Notched scraper – 10mm	0	6	$ 12.65		
					Sub Total:
Miscellaneous					
Masking tape -48mm x 50m	4	30	$ 5.25		
Cross Spacers 1mm x 5000 per bucket	2	6	$ 66.00		
5mm x 5000 per bucket	4	8	$175.00		
					Sub Total:
Total cost of order (c)					$

Section 1 - Literacy, Reading and Comprehension

1.   billion, commercial, majority, either, apprentices, tradespersons, lining, career, opportunities, employees

2.   Trowel, Prefabricated, Demolition, Certificate, Hammer, Plastering, Safety, Silicone, Undercoat

3.   Amaranth, Antique White, Bondi Blue, Electric Purple, Hollywood Cerise, Mulberry, Pacific Blue, Unmellow Yellow, Vermilion, Veronica

4.   **a.** The main purpose of the Plastering industry is to line the interior walls and ceilings of either domestic housing or commercial and industrial properties using plasterboard or fibre cement board.
b. paint, wallpaper, tiles.
c. Three from this list: ceramic; slate; clay; marble; glass.
d. Wall and floor tilers need to be physically fit as they may have to lift and carry bags of cement and stacks of tiles.
e. Wall and Ceiling Fixers or Plasterers, Wall and Floor Tilers, and Painters and Decorators.

5.   **a.** Hawk   **b.** Paint Roller   **c.** Flat Trowel   **d.** Calculator   **e.** Tape Measure   **f.** Stanley Knife

6.   **a.** Tools and equipment; Falls; Hazardous substances; Manual handling; Working in enclosed areas; Sunburn and heat stress.
b. Three from this list: Installing fall protection devices; using a work positioning system; using a fall injury prevention system; and safely using a ladder.
c. A dust mask; protective overalls; suitable gloves; and eye protection.
d. Five from this list: Lifting and carrying paint cans; moving scaffolding; using paint brushes in a repetitive action; bending and stretching; twisting sideways; or working with materials and equipment above shoulder height.
e. When working in enclosed areas.
f. Long sleeved shirt; long trousers/pants; head covering.

Section 2 - Mathematics

1.   m, min, °C, kg, m², km/hr, ml, $

2.   25%, 16.37, 3/8, 2⅓, 5:4, 35°

3.   **a.** 2,634   **b.** 56,087

4   **a.** 35.68   **b.** 430   **c.** 200

5.   71.9, 7.19, 0.719

6.   **a.** 14   **b.** -1   **c.** 100   **d.** 50   **e.** 33   **f.** 5   **g.** 64

7.   **a.** 3,434   **b.** 13.719

8.   **a.** $31.68   **b.** 804.339   **c.** 3.13m or 313cm

9.   **a.** 68.7   **b.** 41.4   **c.** 392.7

10.   **a.** 0.345   **b.** 216   **c.** 6.24

11.   **a.** 280,000   **b.** 2,000

12.   **a.** 3/4   **b.** $^{19}/_{18}$ or $1\,^{1}/_{18}$ **c.** $^{27}/_{8}$ or $3^{3/}_{8}$

13. **a.** 7/12   **b.** 13/14

14. 1/2 or 2/4

15. $840

16. **a.** $125   **b.** 50%

17. **a.** $330   **b.** $297   **c.** $33

18. **a.** 20   **b.** 5

19. **a.** 0.7   **b.** 2.85

20. **a.** 36,000mm **b.** 40,000mm

21. 14cm²

22. 314m²

23. $60.00

24. $13.00

25. 125 sheets

26. 42.5mm

27. 7

28. 360m²

29. **a.** 2.4m x 3.5m x 10% = 9.24m²   **b.** 9.24m² x $95 = $877.80

30. **a.** 4m x 2.4m x 5m = 48m²   **b.** 48m² / 16m² x 2 coats=6 litres

31. **a.** 2m x 1.5m x 2 windows = 6m²; 2.04m x .82m = 1.6728m²; 6m² + 1.6728m² = 7.6728m²; Rounded up to 8m²
    b. 48m² − 8 m² = 40 m²; 40m² / 16m² x 2 coats = 5 litres.

32. 40

33.

Item/s	Supplies in stock	Total supplies required	Price per item	Supplies to be ordered	Total price of additional supplies
Adhesives, Grout & Additives					
Trade Mastic- 15 litre pail	7	10	$ 50.40	3	$151.20
Level Floor Filler – 20kg bag	80	480	$ 25.43	400	$10,172.00
Flexible Grout- 10kg bag	50	100	$ 17.95	50	$897.50
					Sub $11,220.70
Silicones & Sealers					
Trade Silicone – white	4	35	$ 6.00	31	$186.00
Trade Silicone – grey	3	35	$ 6.00	32	$192.00
Polyurethane Sealant – black sausage 14LM	5	10	$ 10.00	5	$50.00
Paving Sealer- 6 litre pail	1	5	$ 77.00	4	$308.00
WD-40 - spray can	2	6	$ 9.95	4	$39.80
					Sub $775.80
Hand Tools					
Trowel – 4mm	0	3	$ 17.50	3	$52.50
Trowel – 12mm	1	4	$ 24.10	3	$72.30
Notched scraper – 6 mm	1	4	$ 8.95	3	$26.85
Notched scraper – 10mm	0	6	$ 12.65	6	$75.90
					Sub $227.55
Miscellaneous					
Masking tape -48mm x 50m	4	30	$ 5.25	26	$136.50
Cross Spacers					
1mm x 5000 per bucket	2	6	$ 66.00	4	$264.00
5mm x 5000 per bucket	4	8	$175.00	4	$700.00
					Sub $1,100.50
(c) Total cost of order					**$13,324.55**

Contributions

This Practice Aptitude Quiz was developed by:

Australian Apprenticeships Pathways Website - www.aapathways.com.au
This website, part of the Australian Apprenticeships and Traineeships Information Service, provides sample Australian Apprenticeships job descriptions and links to more Australian Apprenticeships information and resources. The service is funded by the Department of Industry.

Construction and Property Services Industry Skills Council - www.cpsisc.com.au
Construction and Property Services Industry Skills Council (CPSISC) represents the workforce training and development needs of an extremely large and vitally important sector of the Australian economy - the Construction and Property Services Industries.

Gordon Institute of TAFE - www.gordontafe.edu.au
As Victoria's largest regional stand-alone TAFE, The Gordon has been helping people gain real skills for real jobs for over 125 years.
With innovative approaches to new technologies and learning strategies The Gordon is playing a key role in ensuring the current and future needs of business, industry and community are being met.

Industry Training Australia P/L - www.itaust.com.au
Industry Training Australia (ITA) delivers consultancy services to government and non-government organisations in the education and training sector. ITA develops and delivers information and communication services, including the Australian Apprenticeships Pathways website, for service provider networks and the general public.

**For enquiries about this Practice Aptitude Quiz contact
the Australian Apprenticeships and Traineeships Information Service on
1800 338 022.**