

Online Learning Student Resource

Careers in Building and Construction



Curriculum Links:

- Mathematics
- Literacy
- VET: Certificate II in Building & Construction (Bricklaying, Carpentry, Painting & Decorating)
- VET: Certificate II in Electrotechnology, Furniture Making Pathways, Plumbing, Engineering Studies
- Work Related Skills Unit 1 & 2



Name: _____

This resource support the Victorian Education Department Careers Curriculum Framework for years 7-12 and VCE VM (Vocational Major) and Victorian Pathways Certificate VPC.



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This resource will help you discover more about one of Geelong's trending industries and Victoria's priority industry.

A trending and priority industry is a growth industry that is expected to drive economic growth and create employment opportunities in the near future.

These industries are going to need people like you.

Careers in Building and Construction in the Geelong Region

The building and construction sector is one the largest employers in our region and remains a fast-growing industry. New subdivisions across Geelong, Bellarine and the Surfcoast have resulted in a dramatic increase in careers in the Building and Construction sector.

While construction relies on traditional trades and craftspeople like plumbers, carpenters, electricians and tilers, its future will require highly skilled professionals with broad management and technology abilities.

The nature of the industry is rapidly changing with ICT powering project management, the use of virtual project walk throughs of buildings, Digital Twin technologies facilitating better decision making by bringing people and data together to improve urban designs and green constructions becoming the norm for future builds.

However, entry level jobs are often where skill shortages in this industry exists.

Many workers in this industry complete Vocational and Education Training (VET) through an apprenticeship or traineeship. A third of workers are employed in lower skilled jobs that do not need a post school qualification (labourer).

You can begin a VET in this industry while still at school.

Learning Objectives:

It is intended that the students will:

- Develop an understanding of the diversity of careers in the Building and Construction sector.
- Gain an insight into the type of work of Building and Construction workers do; the skills and attributes needed to carry out their roles and tasks.
- Identify local building and construction industries and organisations.
- Develop and understanding of pathways and job opportunities in this sector beyond the school gate.

On average, a person will change their career 5-7 times throughout their working life. Changes in technology and scientific discoveries means that new jobs that didn't exist 10 or 20 years ago, now require a workforce.

It is the perfect time to start thinking about your skills and industries that you would like to study and/or work in.

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We acknowledge the Wadawurrung peoples of the Kulin Nation, the traditional custodians of the land and waters on which we live and work. We pay our respects to their Elders past, present and emerging, and thank them for their care of the land.

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Activity 1

The Building and Construction Industry



The Building and Construction Industry

List as many occupations you can think of that are part of the Building and Construction Industry

The building and construction industry is responsible for the construction of buildings and other structures, as well as additions, alterations, reconstructions, installation, maintenance, and repair of those structures.

Businesses in this industry are mainly involved in activities like:

- Demolition clearing and site preparation
- Residential and non-residential building
- Heavy and civil engineering construction
- Other construction services.

Fast Fact

The construction workforce still remains as one of the top 5 employers in Victoria.

In Geelong 9.6% people are employed in the construction sector.



Activity 1

The Building and Construction Industry *continued*



Labour Market Insights

Click the orange link.

Click on Industries and choose construction from the industry drop down menu.

Click occupations employed and choose one occupation and complete the table.

Summary of occupation		
List 5 tasks	1	
	2	
	3	
	4	
	5	
Average Weekly income		
Employment pathway ie. Certificate		



Activity 2

Personality Quiz



Are you suited to a career in the Building and Construction Industry?

Take a career quiz >>

Find out more about yourself to decide if a career in Building and Construction is for you.

Where to begin in a career in Building and Construction?

An interactive Bullseye look at careers in Construction

<https://myfuture.edu.au/bullseyes/details/8--construction>

For further information on Construction careers check out this website

<https://www.yourcareer.gov.au/industries/e/construction>



Activity 3

Getting into the Construction Industry



You can begin a pathway to your career in the Construction industry by doing a Vocational Education and Training VET at school.

VET is for VCE, VCE VM and VPC students. VET has national standards so you will be gaining qualifications connected to a workplace.

By doing a VET you will gain technical and employability skills, specialised knowledge, industry knowledge and employment opportunities.

The Gordon delivers VET in Secondary Schools (*VETDSS) for students in Years 10-12 in the Building and Construction area.

These courses give you the chance to experience a career you may be considering, a partial qualification and can be credited to your VCE VM and VPC.

VETDSS courses at the Gordon are delivered yearly so check current website. (click the blue icon)

Geelong Industry Trade Training Centre GITTC also offer VET in Schools for local secondary students in Building and Construction. (click the green icon)



Activity 4

What is the Building and Construction Industry?



What is the Building and Construction Industry?

What you need to consider:

- Most common way to enter this industry is to have a VET qualification usually through an apprenticeship or traineeship.
- Some construction work is physically demanding.
- Most workers in this industry are full time and one-third self employed.
- Jobs in construction industry suit people who like to work outdoors or with their hands.

The construction industry comprises of 3 sectors:

- 1. Residential Buildings**
- 2. Industrial and Commercial Buildings**
- 3. Civil Infrastructure**



There are 3 main types of businesses in the residential building space:

- **Volume Builders:** Volume builders are usually large companies the build a range of existing or fixed house designs and limited customisation. They build many houses per year often cheaper as they buy their building materials in bulk.
- **Custom or Bespoke builders:** Custom or Bespoke Home Builders are often smaller companies that build one-of-a-kind homes which are designed for the client by an architect or draftsman. Custom builders are flexible with floor plans adaptable to changes and usually take on smaller number of builds per year.
- **Renovators.**

Google *Geelong Builders* and list them under the headings in the table.

Volume Builders	Custom or Bespoke Builders	Renovators

Activity 5

Custom Builders



ARCA Build

ARCA is one of Geelong’s premier custom home builders. They work closely with home builders to design and build a home that suits the needs and dreams of the client according to their budget, lifestyle and taste.

They also specialise in designing energy efficient, sustainable homes the minimise the impact on the environment.

Why the name ARCA?

The word ARCA means to enclose, provide a stronghold or safeguard for valuables which reflects ARCA’s purpose, “To build not just structures, but enduring legacies that we can be proud of, creating homes that stand the test of time and ones that look to the future whilst valuing its heritage with a sense of design and elegance”, Paul Dugdale, Director and Co-Founder of ARCA.

ARCA is led by an executive team that are supported by a talented handpicked team.

Click on the green website link to find out about the ARCA team and fill out the following table.

Title	Qualifications	Tasks	Skills they bring to job
Director and Co-founder Paul			
Director and Co-founder Chris			
Office Manager Kat			
Construction Supervisor Drew			
Leading Hand Carpenter Jeremy			
Site Foreman Paddy			

Activity 6

Volume Builders



There are several Volume Builders operating in the Geelong region.

Volume Builders or project home builders, build a range of set house designs with limited personalisation options. They tend to build hundreds of homes per year and by having set designs they can purchase building materials in bulk thus reducing the cost of the build.

New subdivisions are where you will see a range of Volume Building companies and they often have an onsite office and a range of display homes for potential clients to view.

Metricon is one of Australia's largest home builders and have built many homes in new estates around Geelong. They employ over 1000 people Australia wide and last year opened a new office and studio in Geelong that has over 100 employees.

Watch the video. (click the yellow icon).

What is the process of a Volume Builder like Metricon takes to build a home?

click

The process is divided into two stages:

1. Pre- Construction Stage
2. Construction Stage

The pre-construction stage is where a client makes a decision on the type of home they want built, selections for fittings in the house, how they will finance it and the signing of contracts.

The type of staff involved in this area would be people who work in sales, finance, customer service, home décor consultants, pre-site managers, new home advisors, architects, designers, stylist and support services.



Activity 6

Volume Builders *continued*



Meet Jemma a Pre-site Manager at Metricon

Jemma Started as a Sales Cadet click the link to read her story.
(click the orange icon).

Jemma started with Metricon in their cadet program what is her role now?

As a pre-site manager she deals mostly with the client. Before Metricon she worked where and what transferrable skills has she taken to this job?

Metricon's cadet program has you working closely with a Sales Consultant in a support capacity to gain an understanding of the Metricon Sales process.

The skills and attributes they look for are:

1. Good interpersonal skills
2. Emerging tactical, analytical, negotiation and customer service skills
3. The capacity to learn quickly in a highly technical and compliant industry sector
4. The ability to work under pressure with multiple tasks/projects to meet critical timelines.

Employability Skills are vital to your career path. These can be demonstrated in many ways and are transferrable across many jobs. They are common skills that are used daily in many workplaces. They are not specific to one type of industry.

The skills below are regarded as the essential employability skills. From the list above place the number that demonstrates these skills. The above skills and attributes may apply to more than one of the 8 essential employability skills.

Communication: listening, speaking clearly, reading and writing	
Problem Solving: Identifying problems, developing solutions	
Teamwork: Work as part of a team, collaborate and share ideas	
Self-management: Take responsibility, manage time and tasks effectively	
Planning and organising: Set priorities, collect, analyse and organise information	
Learning: Willing to learn new things, being open to new ideas	
Technology: Digital skills: Be able to learn new IT skills required of job	
Initiative & Enterprise skills: Be creative, adapt to new situations, turn ideas into action, provide a variety of options	

Activity 7

The Construction Phase



Building a House

Watch the timelapse video of a house being built. (click the blue icon)



Fill in the gaps.

onsite workers from trades.

of concrete of timber and nails.

roofing tiles weighing tonnes.

bricks of wiring of pipes

The attention to detail of craftsmen and over individual components.

It all equals one

Activity 7

The Construction Phase *continued*



5 Stages of Construction

The construction of a residential home can be divided into 5 stages.

1	Base Stage Getting the site prepared for a new home.	<ul style="list-style-type: none">• Excavation and preparation of site for concrete pour• Site drainage installation• Electrical meter box installation• Pour concrete slab• Inspection by site manager• Building surveyor inspection• Clean slab and site clean.
2	Frame Stage The bones of the house.	<ul style="list-style-type: none">• Erect wall frame and roof trusses• Clean site and removal of debris• Inspection by site manager• Inspection by building surveyor.
3	Lock Up Stage The exterior of the home.	<ul style="list-style-type: none">• Installation of all windows• Installation of gutters and fascias• Installation of roofing (tiles or colorbond)• Completion of brick work and external cladding• Fitting external doors• Quality assurance check a pre-plaster inspection.
4	Fixing Stage The inside of the home.	<ul style="list-style-type: none">• Internal cladding (plaster hung)• Architraves and skirting boards fitted• Stairs fitted if two storey• Installation of bath, basin, troughs and sinks• Installation of internal doors, cabinets, shelves and kitchen• Electrical and or gas fitted and fixtures• Heating and cooling installed• Wall and floor tiling• Painting and decorating• Carpet laying• Garage and front portico attached.
5	Completion Stage The handover of the keys.	<ul style="list-style-type: none">• Landscaping• Quality assurance team inspect the home• Walk through with client for overview and how to use appliances• Building inspection and sign off of building codes for occupancy• Settlement date• Present owners with keys and final handover• Ongoing service and warranty explained.

Activity 7

The Construction Phase *continued*

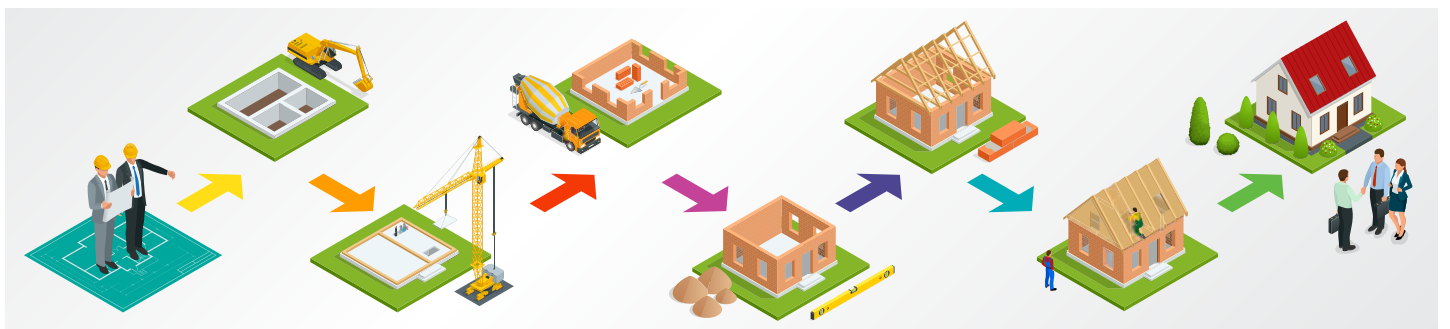


List the trades involved at each of this stages.

1	Base Stage Getting the site prepared for a new home.	
2	Frame Stage The bones of the house.	
3	Lock Up Stage The exterior of the home.	
4	Fixing Stage The inside of the home.	

Who is involved with the handover of the home?

What type of job title would they have?



Activity 8

Getting into the Industry



Residential Construction Sector

The Residential construction sector requires a broad workforce to support construction activity.

Workers fall into two categories:

1. Builders responsible for the property being built.
2. Trades which are subcontracted to provide specific services.

Most workers in this industry start as an apprentice or as a labourer. An apprenticeship is preferred but an increasing number of builders look to labourers to fulfill entry level jobs.

An apprenticeship usually takes 4 years and on completion it is a choice to continue to specialise in the trade that you trained in and either stay with your employer or become a subcontractor. You may also choose to broaden your skill base and become a licensed registered builder.

Most common pathway to becoming a builder is through a carpentry apprenticeship.

Completing a pre-apprenticeship at school in Certificate II in Construction Pathways or Certificate II in Building and Construction is a useful way to enter the trade industry.

(click the green icon).

Choose one of the Pre-apprenticeships that the Gordon offers secondary students to answer the following questions.



1. What is the name of the course?

2. What is the duration of the course? So what year would you need to start in?

3. What is the outcome of doing this course?

4. What will you learn in this course?

5. What is the guaranteed pathway course for you when you finish this one?

Activity 9

The Trades



Which trade is for me?

A carpenter, builder, plumber, electrician, bricklayer, tiler, joiner, painter and decorator - how do I know what is for me?

With plans to increase housing across Australia the above trades are already and will continue to be in high demand and more young people are needed to be trained to meet the needs.

Watch this video and see why people like working in the trades.

(click the pink icon).

Rate these statements in terms of what you would look for in this type of work.

	Very Important	Important	Not Important
Doing different things everyday			
Broad range of work tasks			
Learning new skills			
Finishing the work and feeling proud			
Find work rewarding and satisfying			
Seeing clients happy with your work			
Doing physical work			
Working with hands			

Click on the video for advice on being an apprentice.

(click the yellow icon).



Activity 9

The Trades *continued*



The main advice is ‘Go for it, listen to the people around you, don’t rush things, don’t expect you will get things right the first time, it takes time to become a trades person, you will learn many life lessons on your journey.’

Building and Licensed trades at The Gordon

(click the blue icon).

Licensed Trades



Plumbing and Electrical trades require you to not only complete your apprenticeship but to become licensed to operate unsupervised as well.

Why choose The Gordon?



Real skills

- Hands-on learning
- Small class sizes
- Real life projects



Real experience

- On job training
- Industry-experienced staff



Real outcomes

- Fully qualified trades person
- Industry networks

Activity 10

Brick and Block Layer



Brick and block layers lay bricks, concrete blocks and tiles to construct or repair buildings, walls, arches, chimneys or paved areas.

Find out what a brick and block layer does.(click the orange icon).

A bricklayer needs a combination of physical, technical, and interpersonal skills.

In the table below, tick which skills are required for each of the tasks.

	Skill Required		
	Physical	Technical	Interpersonal
Problem solving			
Stamina			
Reading blueprints and plans			
Strength			
Adaptability			
Calculating materials			
Trowel work			
Communication			
Mixing mortar			
Hand-eye coordination			
Brick cutting and shaping			
Teamwork			

Watch the video.

Top 10 reasons to become a bricklayer.

(click the blue icon).



Activity 10

Brick and Block Layer *continued*



Is brick/block laying for you?

The following are personal attributes and skills a brick/block layer requires for this type of work. Do you have them? Tick Yes or No.

Personal Attributes	Yes	No
Enjoy practical work (hands on work not office based)		
Able to work outside and at heights (majority of your time is spent outdoors)		
Good hand-eye coordination (hand well-tuned with eye like when you play sport and instrument or video games. Better it is, the faster or more precise you will be in laying bricks)		
Technical aptitude (ability to read plans, understand project and correctly follow it through to completion)		
Team player yet independent too (good productivity comes from great teamwork but sometimes you will be working alone)		
Physically fit (it is a physically demanding job, and you are likely to get fitter the more you work)		
Attitude and attendance (turn up to work on time with ambition and dedication)		

Meet **Tori (Lady Tradie)**
Bricklayer.

Females who work in this industry are often referred to as Lady Tradies.

Watch the video. (click the yellow icon).



She talks about the benefits of doing an apprenticeship in bricklaying and her plans for the future.

Activity 11

Carpenter & Joiner



Carpenters and joiners measure, cut and shape wood, metal, plastic and other materials. They are often referred to as ‘Chippys’ because they build mainly with wood.

Carpenters and joiners are responsible for the construction, renovation, erection and repair of structures and fixtures.

A carpenter refers to someone who works onsite to build structures like the housing framework, including walls, floors, roofs, and doorways.

Joiners build things like cabinets and fixtures in a workshop which are then transported to be installed inside the house.

The core carpentry skills are:

- The ability to read plans and blueprints.
- General framing to be able to construct a structure for walls, floor and door frames
- Build Staircases
- Be able to build frames for concrete formwork.
- Install windows, doors, and sidings.

Click on the website for more details on what a carpenter/joiner does. (click the green icon).

Below is a list of day-to-day tasks. Tick the right box to indicate which trade each of the task belongs to.

Day to Day tasks	Carpenter	Joiner
Study drawings and specifications to determine materials required, dimensions and installation procedures		
Ordering and selecting timbers and materials and preparing layouts		
Erecting frameworks and roof framing, laying subflooring and floorboards and verifying trueness of structure		
Nailing fascia panels, sheathing roofs, and fitting exterior wall cladding and door and window frames		
Assembling prepared wood to form structures and fittings ready to install		
Cutting wood joints		
May construct concrete formwork		
May repair existing fittings		
May work with plastics, laminates, perspex and steel		

Activity 12

Cabinet Maker



A cabinet maker selects wood and work with materials such as timber, veneers, laminates, plastics and varieties of wood to make furniture and cabinetry, following drawings and specifications.

Cabinet makers usually work in woodworking workshops or furniture design studios.

Meet Gerritt a Cabinet Maker.

Watch the video (click the pink icon).

Who is Gerritt working for?

What course at the Gordon did he complete?



What skills and attributes make him suited to this type of trade and make him easy to employ?

The following are personal attributes and skills a carpenter/joiner/cabinet maker require for this type of work. Do you have them? Tick Yes or No.

Personal Attributes	Yes	No
Enjoy practical work (hands on work, like to build things, mostly outdoors or in a workshop)		
Attention to detail (focused and thorough to achieve accuracy when tackling tasks)		
Basic Mathematics (Can add, subtract, multiply and divide)		
Technical aptitude (ability to read plans, understand project and correctly follow it through to completion)		
Creative Mind (observe and think about a task or problem in a new way)		
Physically fit (it is a physically demanding job)		
Attitude and attendance (turn up to work on time with ambition and dedication)		

Take the circle challenge.

Draw 30 circles and in 3 mins, fill as many circles with a single image as you can eg. sun, house. How many did you fill in? Can you categorise your images? This activity challenges your creative thinking skills.

Activity 13

Plumber



Plumbing is a licensed trade. Plumbers can have many job titles: General Plumber, Airconditioning and Mechanical Service Plumber, Drainer, Gas Fitter, Roof Plumber.

Plumbers install, maintain and repair pipes, drains, guttering and metal roofing, mechanical services and related equipment for water supply, gas, drainage, sewerage, heating, cooling and ventilation systems.

A General Plumber install and repair water, drainage, gas and sewerage pipes and systems. Most have completed a Certificate III in Plumbing.

An Airconditioning and Mechanical Services Plumber install, maintain, and repair piping, ducting and equipment for heating, cooling and ventilation of buildings or vessels. They would have completed Certificate III in Plumbing (Mechanical Services) or Certificate III in Refrigeration and Airconditioning or Certificate II in Split Air Conditioning and Heat Pump Systems or Certificate III in Gas Fitting.

Drainers install, maintain and design below ground drainage systems and associated sewerage or effluent disposal systems. If you work in this area a Certificate II in Drainage is usually required.

Roof Plumbers installs, maintain and repair flashings, metallic roof and wall claddings and rainwater products such as gutters and downpipes. Most have completed a Certificate II in Roof Plumbing.

Why choose plumbing?

Watch the video (click the orange icon).

‘The more good plumbers you have the less doctors you need.’



How do plumbers make our community healthier?

List 6 reasons why plumbing would be a good trade to get into.

1	
2	
3	
4	
5	
6	

Activity 13

Plumber *continued*



Meet the people that work as Plumbers

Watch Ben's story. (click the yellow icon).

What course did Ben do in Year 10 at school?



What 4 attributes do employers look for in an apprentice?

1	
2	
3	
4	

Ben describes the school to work transition as going from not really putting in an effort, to now working hard and caring about what you are doing.

Ben says that plumbing is not just one set thing, list the tasks that a plumber might be asked to do.

Activity 13

Plumber *continued*



Meet the people that work as Plumbers

Meet Yarran.

Watch the video. (click the green icon).

Yarran had a similar pathway to Ben. He did a Pre-apprenticeship specific to plumbing in Year 10.



Meet Vaughn, Roof Plumber.

Watch the video. (click the orange icon).

A roof plumber is responsible for making sure the house does not leak from the top down.



What do roof plumbers install?



Activity 13

Plumber *continued*



Women in Plumbing

Plumbing is not just for Males although out of 30,168 qualified plumbers in Victoria only 101 of them are women (0.3%).

Meet Grace who was nominated for apprentice of the year (The Gordon)

Watch the video. (click the blue icon).

Who is Grace working for?



What certificate has she completed and what would she like to do next?

What other study and career path did she take before deciding on plumbing?

What does she like about her job?

Why was she nominated for Apprentice of the Year?

In 2021-2022 the Victorian Government invested \$1.2 million to encourage females into plumbing.

What does it take- Women in Plumbing?

(click the yellow icon).

Activity 13

Plumber *continued*



Meet the people that work as Plumbers

Why is it recommended and of value to you to finish Year 12?

List where you would use a good grounding in mathematic skills in this trade.

What could you do at school that will develop your trade skills before getting an apprenticeship?

Choose a profile of one of the women working in plumbing and fill out the paragraph. (Click the green icon).

'Everything looks hard until you learn how to do it.'
~ Sera

is years old and her current qualification is

She got interested in plumbing because

Before plumbing she worked as

The type of plumbing work she does and has done is

Her number one goal is to

The advice she has for women/girls wanting to get into plumbing is:

Activity 14

Electrician



Electricians design, assemble, install, test, maintain and repair electrical networks, components, systems, circuits, equipment, appliances and facilities for industrial, commercial and domestic purposes.

They are often called ‘Sparkys’ because they work with electricity and like plumbing you need to be licensed once you finish your apprenticeship to be able to work unsupervised in Victoria.

They fall under the Trades and Services Industry and the main employing industries are:

- Construction
- Manufacturing
- Electricity, Gas, Water and Waste Services
- Mining

An electrician may work inside as a wireworker, where the focus is on wiring buildings and maintaining electrical, machinery equipment, in residential or industrial settings, or outside as a lineworker, where the focus is on wiring and maintaining equipment and machinery for energy, water and waste companies.

To work as an electrician in either of these areas you will need to complete a Certificate III in Electrotechnology Electrician as a base before diversifying into which area you may work in.

Common trade skills and tasks electricians perform on the job are:

- examining blueprints, wiring diagrams and specifications to determine sequences and methods of operation, and diagnosing electrical issues
- install insulated cables and connect switches, outlets and other fittings using hand or power tools, screwdrivers and wirecutters
- selecting, cutting, and connecting wire and cable to terminals and connectors
- using electrical and electronic test instruments to test circuits and appliances and trace and diagnose faults
- repairing and replacing faulty wiring and defective parts
- positioning and installing electrical switchboards, power outlets, lights, and switches
- connecting electrical systems to power supply
- Install electrical equipment such as storage heaters, water heaters, electric signs, motors, and other electrical equipment.

All electrical work must comply with regulatory codes.

Activity 14

Electrician *continued*



Meet Elliot Grayling from SBAT to Electrician

Watch Elliot's story. (click the pink icon).

At what age did Elliot start his apprenticeship?

At what age did Elliot finish his apprenticeship?



What careers was Elliot considering before doing Cert III in Electrotechnology Electrician VET course?

What two subject areas is Elliot passionate about and how does this suit the trade he has chosen?

	Subject Area	How does it suit the trade Elliot has chosen?
1		
2		

Elliot completed VCE while doing his SBAT, earned money while still training and now is doing what university course?

Activity 14

Electrician *continued*



What personal skills does an Electrician need?

The following are personal attributes and skills an electrician requires for this type of work. Do you have them? Tick Yes or No.

Personal Attributes	Yes	No
Enjoy practical work (hands on work, like to put things together and make them work)		
Attention to detail, conscientious (focused and thorough to achieve accuracy when tackling tasks, are methodical and plan things out)		
Basic Mathematics (Can add, subtract, multiply and divide can do basic calculations and measurements)		
Technical aptitude (ability to read plans/instructions to understand project/task and correctly follow it through to completion)		
Good eyesight and hand eye coordination (have good dexterity steady hand when working with circuits, cannot be colour blind as electricity wiring is colour coded)		
Puts safety first (for yourself and others)		
Good English skills (can read and write English to be able to understand regulatory requirements of this trade)		
Critical thinker and able to problem solve (are curious, inquisitive are a logical thinker when troubleshooting and can come up with solutions)		
Physically fit (it is a physically demanding job may be up ladders wiring in small spaces, lot of bending and crouching, lifting heavy equipment)		
Team Player (enjoy working with a team to complete a task)		
Willingness to Learn (new technical skills take time to learn, have patience and the ability to persevere until skill is mastered)		
Attitude and attendance (reliable, turn up to work on time with ambition and dedication)		

Activity 14

Electrician *continued*



Electricians of the future

To become qualified as an electrician you need to complete a 4 year apprenticeship working with a licensed electrician. It is highly recommended to complete some work experience or study a VET/pre-apprenticeship program in this industry.

The entry requirement to do electrical is varied but, generally you need the successful completion of Year 11/12 including maths.

Once you finish your apprenticeship you must sit an exam to become a licensed electrician. As a licensed electrician you can work on all types of electrical installations including wiring of all commercial, residential, and industrial projects.

Currently 48.6% of electricians work as technicians or trade workers, 18.9% as machinery operators/drivers, 15.6% as labourers and 22.3% in construction.

By gaining different certifications electricians can work in a diversity of careers. The future for electricians will also be in areas servicing the clean energy technologies like solar and wind installations and maintenance plus the installation of electric car batteries in homes and public places.

The Electric vehicle industry is a new market that is currently in expansion across the world. The more electric vehicles that hit the roads the more EV owners are going to need EV charging stations at home. Therefore, there will be a need for more electric vehicle charger installers both in the home and in businesses.

Click on these links to find out more:

What is the first and most important step to becoming an EV charger installer?

After you have finished your apprenticeship what registration do you need?

How do you get specialist training to become an EV charger installer?

FAST FACTS

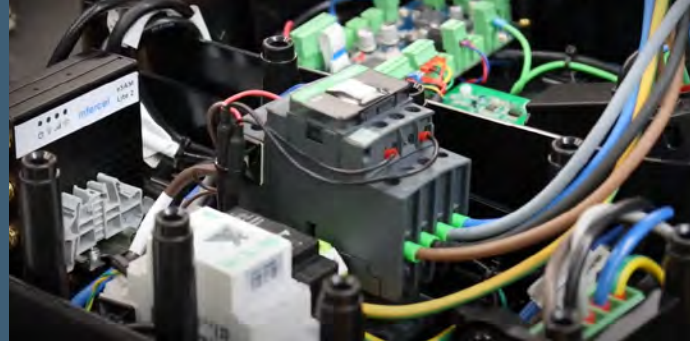
Currently 2,800 registered EVs in Victoria

By 2030 that number is projected to be 101,000

75% of EV charging happens at home.

Activity 14

Electrician *continued*



12 Electrician jobs to consider

Below is a list of the diversity of areas an electrician can work in.

Use this website to further explore one of these careers find out what they earn and what they do.

1. Avionics Electrician
2. Commercial Electrician
3. Maintenance Electrician
4. Wind Turbine Electrician
5. Installation Electrician
6. Marine Electrician
7. Electrical Assembler
8. Linesperson
9. Industrial Electrician
10. Solar Panel Electrician
11. Automotive Electrician
12. Electrical Designer



Activity 15

Painter and Decorator



A painter and decorator combine practical skills and creativity that work with diverse materials like, paint, varnish, metal, wood, and plaster to make the space look beautiful for the client or customer.

They prepare and paint surfaces both inside and outside a building, apply wallpaper to walls and have a good understanding of colour and the colour palette.

Painters and Decorators find employment in the following industries:

- **Construction** – Construction companies hire painters to decorate new buildings, show homes or refurbish buildings.
- **Interior Designers** – Interior designers hire painters to help create and implement designs for homes, offices, or stores.
- **Private Homeowners** – hire decorators to paint the interior or exterior of new or old homes.

Watch the video on what an apprentice Painter and Decorator learns at trade school. (click the yellow icon).



What is Sharlene's title, what did she win a gold medal in and where did it take her?

What is Anthony's title and who does he work for?

Activity 15

Painter and Decorator *continued*



Meet the people that work as Painters and Decorators

There are 3 apprentices in this video what is their names and who do they work for?

	Name	Who do they work for?
1		
2		
3		

Sharlene mentions that doing painting and decorating is just a stepping stone to other careers. List the ones she mentioned.

In what ways can painting be a creative career?

Why does Anthony think that a Pre-apprenticeship is important?

How long and what was involved in the pre-apprenticeship that TJ did?

Wyatt and Ethan are doing an apprenticeship in their families business, what is their goal for their future?

Activity 15

Painter and Decorator *continued*



It may seem easy to paint a wall, but it takes years of practice and experience to produce a professional result.

The following are technical and soft skills that are required for this profession.

Watch the following video.
(click the orange icon).

Tick the technical and soft skills below that you see being performed.



Technical Skills	Yes
Read and understand plans, estimates and internal/external paint applications	
Ability to use painting and decorating tools, equipment, and materials	
Ability to prepare and match colours	
Be familiar with different types of timber finishes and coatings	
Ability to apply wallpaper, special coatings, and finishes	
Understand occupational health and safety	
Soft Skills	Yes
Artistic and creative skills	
A steady hand and good hand eye coordination	
Enjoy practical hands-on work	
Ability to work under pressure and to guide and timelines	
Meticulous attention to detail	
Patience	
Great colour vision	
Good communication and listening skills	
Problem solving skills	

Activity 16

Floor and Wall Tiling



Floor and wall tilers work with a variety of natural and manufactured materials including ceramics, slate, glass, terracotta, stone, marble and cement. They cut these materials and lay tiles on walls and floors to provide protective and decorative finishes, both on interior and exterior of buildings and outdoor areas.

Tilers work inside on residential, commercial and industrial buildings, particularly in wet areas like bathrooms, laundries and kitchens.

Tilers apply tiles to patios, swimming pools, terraces, and garden in outdoor areas.

As a tiler you would:

- Look at plans, take measurements to estimate the amount of tiles and adhesives needed.
- Mark out an area to be tiled and decide on the layout.
- Prepare surfaces by levelling off with plaster, sand or cement.
- Cut tiles to size and shape.
- Apply adhesives and attach tiles, matching patterns and line of tiles
- Mix and apply grout.
- Remove excess grout and clean finished tiling.

Top skills that would make you a good floor and wall tiler are listed as the following:

- **Creativity** - Tiles come in a range of colours and designs knowing how to combine them is a skill that will produce an aesthetic finish.
- **Planning** - The tiling layout needs to be planned so intricate designs and patterns can be executed.
- **Building Skills** - Need to know how to prepare surfaces so tiles will be installed correctly.
- **Physical Stamina** - Tilers need to have good abdominal and lower back strength and be able to bend, stretch, twist, kneel and crouch for long periods of time.
- **Accuracy and precision** - tiling is a precise job and you need attention to detail to avoid errors and material wastage.
- **Technical skills** - many tools are used in tiling so need to know how to use them correctly to perform the work.
- **Collaboration Skills** - Tiling being a finishing trade relies on communicating with the builder and other trades to determine the best time to complete tiling jobs.

H A V E Y O U G O T W H A T I T T A K E S ?

Activity 16

Floor and Wall Tiling *continued*



Australia's best tiler competition

Watch the following video.
(click the pink icon).



List the creative skills you saw in this video.

List the technical skills you saw in this video.

Making mistakes cost the tiler time. You will often hear a tiler say **“Measure twice cut once!”** Why?

Activity 16

Floor and Wall Tiling *continued*



Is tiling for you?

Meet Tiarne.

Watch the following video.
(click the green icon).



Is tiling for you? Answer these questions Yes or No	Yes	No
Do you have patience?		
Do you have a good eye for patterns, textures, and colour?		
Can you follow a plan and pay attention to the detail?		
Do you have good physical stamina?		
Do you like working in a team?		
Do you like working with your hands?		

Tiarne says **“Tiling can take you anywhere”**. What three areas does Tiarne mention tilers can work in?

1	
2	
3	

Activity 17

Non-Trade Careers



Non-Trade Careers in Building and Construction

Trades can be physically demanding and overtime the body may not be able to handle the stress. What happens then?

Many tradespersons do extra training to become a building projects manager, or a construction site manager, or a building inspector. Generally, these require further training at a Cert IV or Diploma level.

Meet Dan who was a tradie now a site supervisor for Champion Homes.

Watch the following video.
(click the blue icon).

For Dan this is the next step up from being on the tools.



What are his main tasks and why are they important?

Other non-trade careers in Building and Construction are listed here and many of these require a university degree:

- Architect
- Building Inspector
- Building Surveyor
- Construction Manager
- Contract Administrator
- Draftsperson
- Engineer
- Estimator
- Health and Safety Manager
- Project Manager

Activity 17

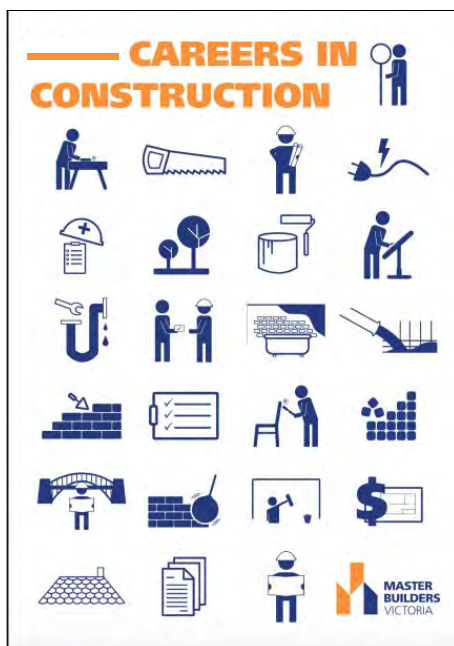
Non-Trade Careers *continued*



Master Builders Victoria

The Master Builders Victoria has put together a Careers in Construction Booklet that gives a descriptor of trade and non-trade careers.

(click the yellow icon).



Choose one of the careers on page 38. Fill out the following table.

Name of Career	
What do they do?	
Typical Tasks	
Pathway	

The Gordon Building and Construction are looking for tradespeople to become Site and Project Managers.

It is now required by the State to have this qualification.

(click the orange icon).



Activity 18

The future of Building



Pre-fabricated Construction

The building trade is a great consumer of natural resources such as wood, minerals, water and energy and once built they continue to produce emissions in them or on the impact on the ground.

The building industry is moving toward more sustainable building practices and green building materials, those that are natural, durable, reusable or recyclable and include the use of recyclable materials.

Advances in manufacturing and the growing importance of sustainability have allowed companies to develop pre-fabricated solutions for residential, commercial and industrial building across the world.

The major advantages of a **pre-fabricated construction** are:

- the material used are durable
- eco-friendly and or made from recycled matter
- construction is faster
- fewer ambient (weather) factors
- quality can be controlled in house prior to being constructed
- less risk of on-site accidents
- simplifies the construction process and timelines and
- generally is better for the environment.



Activity 18

The future of Building *continued*



Pre-fabricated Geelong Employers

Cross Laminated Offsite Solutions (CLOS) is a local company here in Geelong that combines industrial, residential and sustainable elements and produces modular and flat pack construction concepts.

They are manufacturing housing instead of building housing.

This means like when assembling a car the building is broken down into components and continues along an automation line to the finished product.

The building is then transported and constructed in modules or by prefabricated parts and put together like a lego set.

CLOS has moved to the old Ford Factory site this year and proposed to be able to build 500 homes per year.



Timbertruss in Corio is Australia's largest prefabrication manufacturer of roof trusses, wall frames, posi struts and cassette flooring.

Coming soon is the prefabricating of Next Gen Walls and Timbertruss Lift Shafts.

Watch the video to see inside their warehouse. (click the green icon).



Activity 18

The future of Building *continued*



Sustainable Building

There is currently a high demand for tradespeople who understand green technology and building projects.

The Green Building Institute trains and educates trades people and property professionals to help them understand sustainable construction technology, methods and design.



Check out the video: [Green tradies smarter tradies](#). (click the blue icon).

Check out the most sustainable Building in the world - Olympic House (click the yellow icon).



List the sustainable features and building materials and renewables used in this building.

How are staff supported to be more eco-friendly?

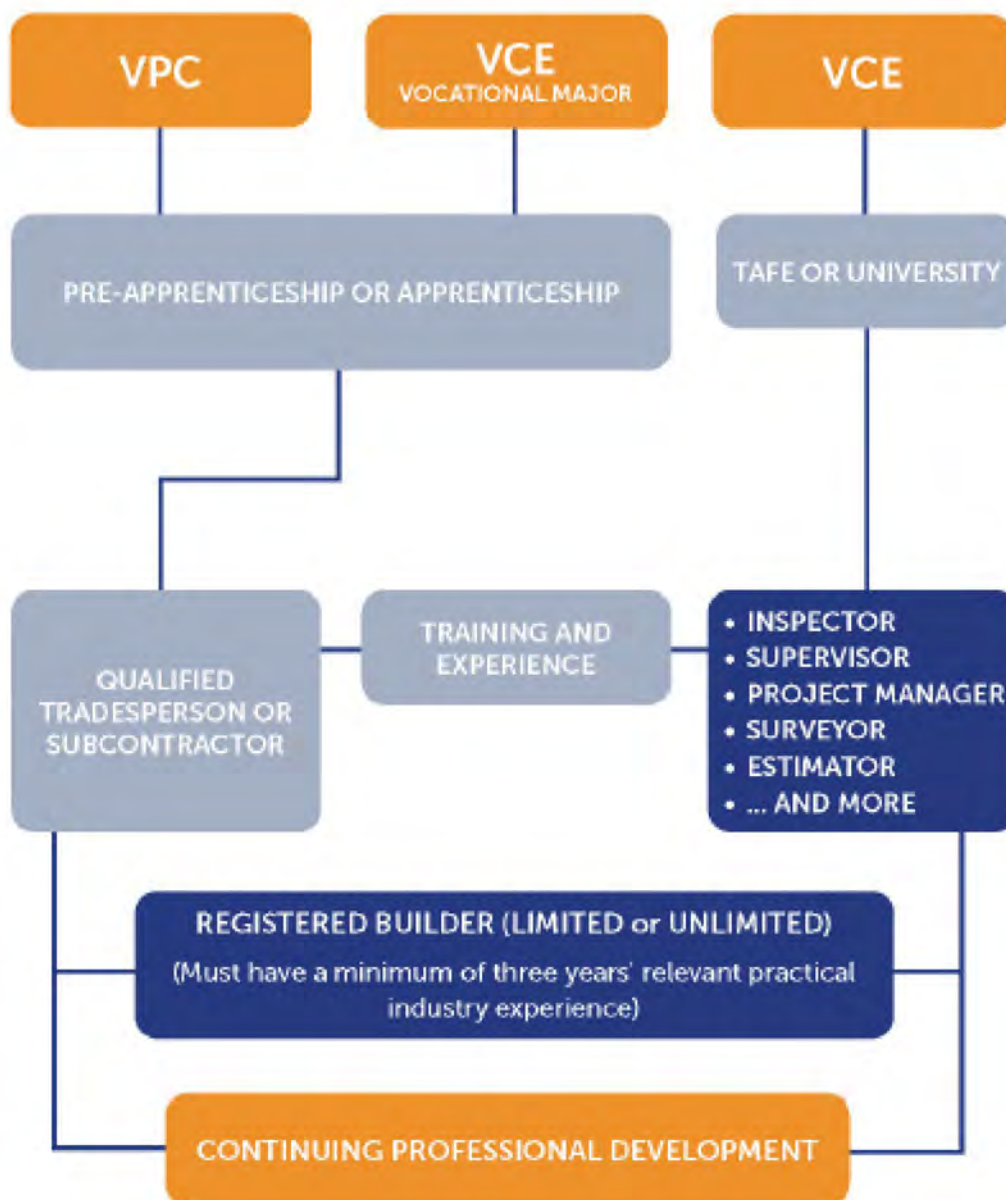
Activity 19

Career Map



Master Builders Careers in Construction: Career Map

CAREER MAP



Activity 20

Where to from here?



Building Careers Geelong Immersion

BUILDING CAREERS GEELONG is an industry endorsed construction site immersion for students in Years 9-12 who are interested in exploring what happens on a 'real' construction site.

Students visit a commercial site and a residential site with overviews from a diverse range of site personnel including site manager, trades supervisors, project manager, concreter, carpenter, electrician, bricklayer, health & safety officer.

Students have the opportunity to network with Building & Construction people and discuss Structured Workplace Learning and apprenticeship prospects in the Geelong region.

This School to industry collaboration includes the Geelong Region Learning & Employment Network, the Gordon Tafe, Lyons Construction, Hamlan Homes, Caruso Bricklaying, Geelong Built.

Construction site tours occur in May and September each year.

Check out these Master Builders videos:

Laura - the Ladie Tradie

Koby - Bricklaying

Working in the Building Industry

Building Careers in Geelong

Activity 20

Where to from here?



Pathway to your Career: the Gordon

You can begin a pathway to your career in the Construction industry by doing a Vocational Education and Training VET at school.

The Gordon TAFE

Currently the Gordon offers the following certificates for students still at school: (click the orange icon).

- Certificate II in Building and Construction (Carpentry) Pre-apprenticeship
- Certificate II in Electrotechnology Pre-vocational
- Certificate II in Plumbing Pre-apprenticeship
- Certificate II in Furniture Making Pathways



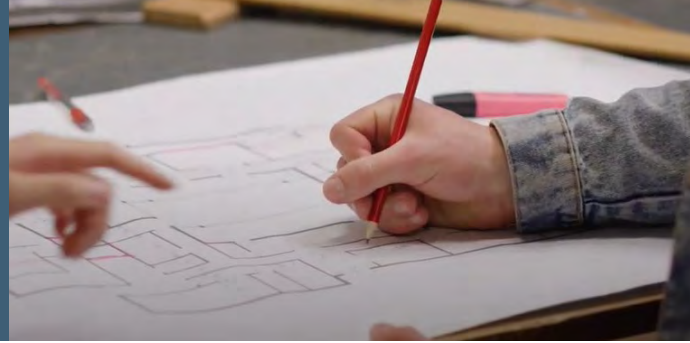
* Please note these course offerings change annually so check the website regularly.

The Gordon works with employers and apprentices/trainees to customise training to suit workplaces. The trade training provided by the Gordon are:

- Certificate III in Bricklaying and blocklaying
- Certificate III in Cabinet Making
- Certificate III in Joinery
- Certificate III in Painting and Decorating
- Certificate III in Electrotechnology Electrician
- Certificate III in Plumbing

Activity 20

Where to from here? *continued*



Pathway to your Career: Deakin University

Keen to learn more about how to design a building or the key to coordinating a construction project on a tight budget then you may want to consider doing a degree course at Deakin in the following:

- Bachelor of Construction Management
- Bachelor of Construction Management/Bachelor of Property and Real Estate
- Bachelor of Design (Architecture)
- Bachelor of Design (Architecture)/Bachelor of Construction Management.



Watch the video and hear what the students say.

Study Architecture and Construction Management

(click the pink icon).



For more information on courses offered at Deakin University click on this website. (click the green icon).

**Career opportunities
by doing these
Degrees are:**

- **3D Architectural Modeller**
- **Architectural consultant or designer**
- **Building designer**
- **Design coordinator**
- **Quantity Surveyor**
- **Structural Drafter**
- **Building Project Manager**
- **Building Consultant**

Useful Links

for Teachers and Students



Curriculum Links for Teachers and Students

The Education Department of Victoria has developed a Careers Curriculum Framework for Years 7-12. Many of the activities in this resource relate to the learning outcomes of this framework. See Appendix 1.

This resource also supports unit outcomes in the VCAs VCE VM Work Related Skills as outlined in the study design.

This resource uses credible and reliable sources that students are encouraged to use.

This resource supports outcomes in Unit 1 Careers and learning for the future and Unit 2 Skills and Capabilities for Employment.

In addition to this, some of the information and activities in this resource could be used in Unit 4 in the presentation of a portfolio related to a target industry.

For more information click on the following links Work related skills study design.

<https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/VCEVMWorkRelatedSkills/Pages/Index.aspx>

Students could also use the Youth Central Website for a whole range of work-related topics like, how to create a resume or job application and what to expect in a job interview.

<https://www.youthcentral.vic.gov.au/jobs-and-careers>

Appendix 01



Framework Learning Outcomes

Years 7 - 10

Year	Self-Development			Career Exploration			Career Management		
7	1. Recognise the importance of how behaviour and attitude affect personal performance	2. Utilise effective social and interpersonal skills when interacting with others	3. Understand the concept of stereotypes, biases and discriminatory behaviour in relation to career and work options	4. Discover how different kinds of work require different combinations of skills and knowledge	5. Understand the contribution of work to family life and explore the effect of work on people's lifestyles	6. Explore the different types of work opportunities, including paid and unpaid work, volunteer work, self-employment and periods of unemployment in people's career journey	7. Recognise the underlying concepts of the career building process by developing a Career Action Plan that includes goal-setting	8. Explore the education and training requirements of various work roles	9. Understand the range of career information resources through networks, the Internet, television and newspapers that provide occupational and industry information
8	1. Identify their beliefs and value systems and their influence on self-concept	2. Use the results of self-assessment to identify areas for development, build aspirations, and a positive self-image	3. Understand and analyse how personal characteristics (attitudes, interests, values, beliefs and behaviours) influence career decisions	4. Discover the learning habits and study skills that help people achieve good education and training outcomes	5. Explore the importance of a variety of skill types in the workplace	6. Understand how different types of work (paid, unpaid, volunteer, self-employment and periods of unemployment) contribute to society	7. Understand how choices are made and explore what can be learned from their decision-making experiences	8. Understand problem-solving strategies and goal-setting in making career and life decisions	9. N/A
9	1. Understand how individual characteristics such as interests, skills, values, beliefs and attributes contribute to achieving personal, social, educational and professional goals	2. Explore methods to enhance interpersonal and group communication skills including skills for a successful work interview	3. Recognise stereotypes, biases and discriminatory behaviours that may limit opportunities for people in the workplace	4. Understand how past, present and future academic performance may impact upon the selection of future programs and courses	5. Explore and develop commonly used work search tools (e.g. job applications, forms, resumes and portfolios) to find and maintain work	6. Explore the relationship between work and the community and how technological advances impact on work roles in the community	7. Use career information resources to locate information on occupational and industry trends, education and training trends, social and economic trends	8. Understand the importance of developing flexible and adaptable short-term Career Action Plans within the career building process	9. Examine how personal goals can be satisfied through a combination of work, community, social and family roles
10	1. Understand the importance of allies (i.e. friends, family and supporters) to maintaining a positive self-concept	2. Assess how personal characteristics and behaviours are reflected in your life, learning and work goals	3. Discover personal and professional benefits of developing a positive self-concept and the consequences of developing a negative one	4. Demonstrate skills and attitudes towards learning that will help you to achieve your life and career goals	5. Understand the relationship between work, community and the economy	6. Explore the education and training requirements of various work roles in your preferred future occupation or work sectors	7. Use career information effectively in the management of your Career Action Plan	8. Understand the importance of developing a range of scenarios for future career choices	9. Examine the concept that every decision is a career decision by creating and maintaining your career portfolio

Years 11 - 12

Year	Self-Development			Career Exploration			Career Management		
11	1. Understand and analyse how personal characteristics, interests, attitudes, values, beliefs and behaviours influence career decisions	2. Explore innovative interpersonal and group communication skills, including discovering the importance and benefits of being able to interact with diverse groups of people in all areas of life	3. Identify attitudes, behaviours and skills that contribute to overcoming bias and stereotyping in the workplace	4. Identify the transferable skills, knowledge and attitudes that can fulfil the requirements of a variety of work roles and work environments	5. Explore the importance of revisiting and fine tuning your preferred study, training and work options within your Career Action Plan	6. Engage in career planning and development that takes into account changing economic, social and employment trends	7. Use career information resources to identify career opportunities that are available to someone with your skills, knowledge, aspirations and assess the reliability of the information	8. Prepare for selection interviews and/or auditions and demonstrate enterprise, negotiation, networking and self-marketing skills to an appropriate level	9. N/A
12	1. Understand and analyse how achievements related to work, leisure, voluntary work and learning influence self-concept	2. Re-examine your personal characteristics and determine those that contribute positively to the achievement of your life, learning and work goals	N/A	3. Identify how your education and training achievements affect your available options, courses, programs, workplace training and/or entry into work	4. Locate and use education and training information, occupational and industry information and labour market information in the career building process	N/A	5. Consider the possible implications of changes in learning and work for your own career goals and plans including financial options	6. Understand and apply problem-solving and goal-setting strategies in making career and life decisions	N/A

VET and ACE Providers

Self-Development			Career Exploration				Career Management			
1. Use the results of a self-assessment to identify areas of development, build aspirations and provide positive self-image	2. Explore methods to enhance interpersonal and group communication skills including for a successful work interview	3. Re-examine your personal characteristics and determine those that contribute positively to the achievement of your life, learning and work goals	4. Demonstrate skills and attitudes towards learning that will help you to achieve your life and career goals	5. Participate in continuous learning supportive of career goals	6. Identify how your education and training achievements affect your available options for courses, programs, workplace training and entry to work	7. Locate and use education and training information, occupational and industry information and labour market information in the career building process	8. Develop abilities to seek, obtain, create and maintain work	9. Consider the possible implications of changes in learning and work for your own career goals and plans including financial options	10. Understand and apply problem-solving and goal-setting strategies in making career and life decisions	11. Examine how personal goals can be satisfied through a combination of work, community, social and family roles

Online Learning Student Resource

Careers in Building & Construction



The Role of the LLEN

There are 31 Local Learning Employment Network groups throughout Victoria.

They aim to help jobseekers of all ages achieve sustainable employment through partnerships with key regional organisations.

They also facilitate student access to structured workplace learning placements which are tailored to local priorities and employment opportunities.



Email the
GRLLEN
for more
information

www.grllen.com.au

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