



APPRENTICESHIP.

Post-Secondary Education that Matters!

As an educator, there are many reasons to talk to your students about careers in skilled trades...

RESPECT

Skilled trades are respected because of the important role they play in our economy and society. Think about it, they touch almost every aspect of our lives, from the homes we live in, to the cars we drive, to the food we eat. Much of Canada's productivity depends on the highly specialized expertise of tradespeople. It's no surprise they are in high demand from coast to coast to coast.

CAREER OPPORTUNITIES

With over 200 careers to choose from, there is a skilled trade for every aptitude and interest. The learning never stops. After receiving their certification, many tradespeople move into management positions or teaching careers. Others start their own business or go back to school to further specialize. In terms of professional development, the sky is the limit!

GOOD PAY

People in skilled trades are rewarded for their efforts with good pay, often better than average. In fact, apprentices start making money right away given the on-the-job portion of their training. One of the best parts of being a tradesperson is that you get paid well doing work you enjoy.

An Educator's Guide to **CAREERS IN SKILLED TRADES**

This resource has been developed by the “*Skilled Trades: A Career You Can Build On*”[®] campaign, which is a joint project of the Canadian Apprenticeship Forum – Forum canadien sur l'apprentissage (CAF-FCA) and Skills/Compétences Canada[®] (S/CC). For more information on the campaign, visit www.careersintradec.ca.



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different careers to choose from

Why you should use this guide

With this resource, our goal is to support educators in their efforts to identify all relevant post-secondary education options available to their students. We know from our research that there is a real need to promote and develop career options in the trades. **A 2005 Ipsos-Reid study shows that only 32 per cent of youth aged 13-17 say they would be likely to consider a career in this area.** This is despite the reality that skilled trades offer challenging, satisfying, and enriching career options for Canadian youth.

As an educator, this resource will help you discuss with your students how apprenticeship is an excellent form of post-secondary education. It includes a lot of information, facts and figures, and classroom exercises to engage them effectively. **Good luck!**



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1 Million

**FAST
FACT**

workers will be required by 2020 due to an aging population and declining birth rates.



About Skilled Trades

Chances are, when you think of skilled trades, you think of traditional trades such as carpentry and plumbing. In reality, there are over 200 skilled trades careers to choose from!

In this section, we explore:

- how skilled tradespeople affect our daily lives.
- how the retirement of workers in the next decade means enormous opportunities in skilled trades in the future.
- the myths and realities of careers in skilled trades.
- the diversity of careers in skilled trades.
- the traits and talents of successful tradespeople.
- the career path of tradespeople.

"I believe that one of the keys to economic prosperity for Canada is the ability to attract investment through the development of a highly skilled, productive and mobile workforce. To develop such a workforce we must upgrade the skills of the existing workforce where necessary, and look to attract the best and the brightest of those seeking to enter the workforce."

Allan Bruce, International Representative, International Union of Operating Engineers,
Co-Chair, Skilled Trades Promotion Project

Skilled Tradespeople Touch Every Aspect of our Lives

Where would we be without the skills and knowledge of tradespeople?

Think about it. They build and maintain the homes, infrastructure, services and amenities we use every day— from the moment we get out of bed in the morning, until we go back to sleep again for the night. It is no wonder tradespeople are so proud of their skills! Here are just a few of the tradespeople whose work you may have come across today.



You wake up this morning in your comfortable bed, turned on the lights, and began preparing for your day.

- Roofer
- Carpenter
- Brick and Stone Mason
- Drywalller
- Floorcovering Installer
- Painter and Decorator
- Insulator
- Gasfitter
- and more!*



You drove to school in your safe and reliable vehicle.

- Electric Motor System Technician
- Electrician
- Machinist
- Millwright
- Welder
- Industrial Instrument Mechanic
- Motor Vehicle Body Repairer
- Automotive Painter
- Automotive Service Technician
- and more!*



You made your way to class, ready to challenge young minds.

- Concrete Finisher
- Roofer
- Carpenters
- Lather (Interior Systems Mechanics)
- Industrial Plumber
- Heating and Ventilation
- Sprinkler System Installer
- Welder
- Refrigeration & Air Conditioning Mechanic
- Crane and Hoisting Equipment Operator
- and more!*

The Skills Shortage is REAL!

There is currently a shortage of skilled tradespeople in many regions and sectors throughout Canada. The demand for tradespeople is growing rapidly as current workers are beginning to retire.

Some recent headlines tell the story.



"Skilled trades are just the first step in learning new technologies that will help youth build a rewarding career. Jobs in skilled trades pay well, and challenge one's intellect and creativity. Better still, youth can reduce the debt load usually associated with post-secondary education by earning a pay cheque while they learn."

Irene Lewis, President and CEO, Southern Alberta Institute of Technology

MYTHS AND REALITIES of Skilled Trades Careers

1 **MYTH** Skilled trades are not for students that get good grades

REALITY! This is simply not true and is probably the most common misperception about skilled trades. The reality is that skilled trades require individuals with a strong academic foundation in reading and writing, math, and sciences.

Like university, successfully completing an apprenticeship takes intelligence, dedication, focus, and hard work. Tradespeople are regularly called upon to perform a range of complex tasks, such as

- Following complicated blueprints for building an office tower.
- Analyzing various elements (such as weather conditions, weight and distance) while operating a crane situated on a 10-story building.
- Identifying the potential volume of water and its resulting pressure when installing a sewage system for a hospital.

2 **MYTH** A university degree is the only post-secondary education that provides a good future

REALITY! Achieving a Certificate of Qualification for a skilled trade is also a ticket to a good future. Indeed, tradespeople are in demand, earn good pay, have the ability to work across the country, and benefit from solid job security. With the imminent skills shortage caused by lower birth rates and an aging population, the high demand for tradespeople will not diminish. The facts speak for themselves:

- In the manufacturing sector alone, 400,000 workers will be required in the next 15 years due to retirement.¹
- By 2007, more than one-third of jobs created in Canada will require trade certification or a college diploma.²
- Some business leaders are predicting that by 2010, the demand for plumbers will be as high as it was for people with IT skills during the 1990s.³

3 **MYTH** Skilled trades are only seasonal jobs

REALITY! Although it used to be that outdoor infrastructure projects were put on hold until the frost left the ground, now it is quite common to see skilled workers building roads and skyscrapers during the winter months. Although there is no denying that Canada's climate makes it more challenging to be a skilled worker, with today's technology, it is possible to work in all types of adverse temperatures. For example, new technology enables tradespeople to work all year in the construction trades, while advanced masonry and concrete technology makes it possible to pour and cure even in below-freezing temperatures. Simply adding propane heating and insulated tarps for example, creates a feasible work environment. Specialty clothing has also helped tradespeople work through the cold winter months.

4 **MYTH** Jobs in the trades are dead-end jobs

REALITY! Skilled trades offer not just jobs, but careers! There are many chances for advancement within a trade from supervisory positions, to management positions, to the possibility of owning your own business. The level of advancement is up to the capability and desire of the tradesperson.

5 MYTH Skilled trades don't pay well

REALITY! You can earn a great income as a tradesperson!

Many trades provide earnings above the national average. Tradespeople can earn from \$12 to \$35 an hour plus benefits, with additional opportunities available to earn even more, depending on the trade, position, location, and opportunities for overtime. For example, an instrument technician working in Alberta, who installs, maintains, and repairs the control and metering systems used in commercial and industrial processing can earn up to \$40 an hour.⁴ In the Windsor area, it is not uncommon for skilled tool and die makers – with overtime included – to easily average \$100,000 annually.⁵

Not only do tradespeople earn above average incomes, they also complete their studies without being overwhelmed by debt. By taking an apprenticeship and learning a trade, you can 'earn while you learn', decreasing the amount of debt that you may incur during your post-secondary training. Selecting a skilled trades career and taking an apprenticeship makes good financial sense!

6 MYTH Skilled trades are dirty and noisy

REALITY! There is no doubt that many trades involve "hands-on" work. But this is why many people work in trades in the first place! They consider this type of work far more rewarding than a job that requires a lot of desk work.

That said, it is important to remember that technology and new techniques have greatly changed the face of trades. Today, an increasing amount of mechanical equipment is operated with the aid of computer software. Therefore, more and more trade workers work indoors, using sophisticated computer equipment and technology. For example, it's not uncommon these days for an automotive service technician to turn on a computer before sticking his or her head under the hood of a car!

Additionally, legislated health and safety requirements enforce strict regulations on levels of noise and exposure to any hazardous materials on a job site. Finally, labour and business work together to ensure their workers' safety by implementing and enforcing additional workplace safety standards.

7 MYTH Skilled trades are too physically demanding

REALITY! There is certainly a physical aspect to many trades. Ironically, the nature of these 'hands-on' careers is why skilled tradespeople love their jobs! For many people, this type of work is more attractive to them than a career that requires a lot of time in an office. However, it is important to clarify that there are a diversity of tasks in many skilled trades careers, from designing concepts and blueprints, to planning and project management, to administrative functions.

Technology has also changed the nature of many of the trades. People interested in working in the skilled trades need to learn how to operate the increasing amount of computer software and mechanical equipment that is incorporated into their jobs.

Today, the line between white-collar and blue-collar work is becoming blurred. Today, skilled trades require more brains than brawn.

8 MYTH Women do not have the physical strength to perform skilled trades

REALITY! Physical work does not solely imply strength. In fact, skilled trades require dexterity, stamina, good hand-eye coordination and balance - all attributes that women and men possess equally.

1. Canadian Manufacturers and Exporters (Hon. Perrin Beatty), Ensuring the Future of Canadian Manufacturing, February 2005

2. Job Futures 2000 <http://www.jobfutures.ca>

3. Stuart Johnson – vice-president of policy and government relations for the Ontario Chamber of Commerce, Media Release, April 13, 2004

4. Alberta Apprenticeship and Industry Training, Step Into the Trades, 2004 - www.tradesecrets.org

5. Canadian Machinery and Metalworking, June 2000 - <http://www.skillswork.com/students/codfacts.html>

Diversity of Careers in the Skilled Trades

With over 200 occupations to choose from, there is a skilled trade for everyone!

On pages 6-13 of this guide, we have listed the most common trades for which post-secondary training is available across four key industries - manufacturing, construction and maintenance, transportation, and service. In addition, we have selected several trades from each sector to profile.

For more information on these trades, visit the National Occupation Classification (NOC) website - www23.hrdc-ohrc.gc.ca. Simply enter the four digit number of the trade you are interested in into the NOC's "Quick Search" tool.

TOOL AND DIE MAKER (7232)

Any ideas on what a tool and die maker does? It may come as a surprise to you, but they are among the most highly skilled workers in the economy. They produce tools, dies, and special moulds for the machines that make many of the products and equipment we use every day — like clothes, airplanes, furniture, and even candy. Tool and die makers work in mould shops, shipyards, rail yards, refineries, pulp and paper mills, mines, smelters and overhaul shops. They work from drawings, computer-aided designs, and must have a good grasp of the properties of metal, plastic, rubber and composite materials.

Tool and die makers must be excellent problem-solvers. They must also be good with computers and quickly adapt to technological advances in robotics and lasers. Most tool and die makers have a background in mathematics and physics. The work can be physically demanding at times but very rewarding.

MACHINIST (7231)

A machinist is to metal what a carpenter is to wood. They set up and run machines that cut or grind metal and other materials into products with very precise dimensions. Their expertise is usually called upon to make a single part, such as the mechanism that installs windshields on a car assembly line. Their work is forever evolving due to the rapid pace of technological changes. You'll often find machinists in industries that manufacture machinery equipment, motor vehicle parts or aerospace parts.

Machinists like working with tools and equipment. They are patient, have excellent hand-eye coordination and manual dexterity. They must also have a background in mathematics and be knowledgeable about the properties of metal, plastic, rubber and composite materials. They must also be very safety conscious and be in good physical condition.

On the Job: MANUFACTURING

Automotive Machinist (7231)	Hoist Operator (Hydraulic Crane) (7371)	Industrial Warehouseperson (7452)	Power System Electrician (7243)
Graphic Arts (Bindery) (5223)	Hoist Operator (Mobile Crane - Tons) (7371)	Lather (Interior Systems Mechanic) (7284)	Power System Operator (7352)
Graphic Arts (Pre-Press) (5223)	Industrial Electrician (7242)	Machinist (7231)	Sawfitter/Fitter (7383)
Graphic Arts (Press) (5223)	Industrial Instrument Mechanic (2243)	Metal Fabricator (Fitter) (7263)	Sawfitter/Fitter (Benchperson) (7383)
Heavy Equipment Operator (7421)	Industrial Mechanic (Millwright) (7311)	Mould Maker (7232)	Stationary Engineer (7351)
Hoist Operator (Construction) (7371)		Pork Production Technician Services (9462)	Tod and Die Maker (7232)
Hoist Operator (Conventional Crane) (7371)			Welder (7265)

WELDER (7265)

Welding involves the joining of metals using manual, semi-automatic and automatic arc welding equipment. Welders generally plan their work from drawings and blueprints and may use hand tools and machines to fabricate, assemble and weld products.

There are many different types of welding depending on the material, equipment and techniques used, the nature of the final product and the degree of expertise required.

Welding can provide a lucrative and rewarding career, with highly transferable skills, it can also offer very diverse work and challenges.

ELECTRONICS TECHNICIAN (2241)

As electronics is now incorporated into virtually every sector of the economy, this field offers a wide range of job possibilities. Everything from satellite systems to ski lift controls requires workers with training in electronics.

Specific tasks that electronic technicians and engineers may perform include linking computer networks to hydraulic systems, establishing communication links to remote locations or designing and retrofitting electrical systems. As technology continues to grow and evolve everything could one day be electronically based, which makes electronics an occupation of the future.

TRAITS & TALENTS

Welders need good hand-eye coordination, manual dexterity and the ability to concentrate on detailed work for long periods of time, often in awkward positions. They must also be able to read and understand blueprints or drawings and to follow simple instructions precisely.

Knowledge of computerized tools and machinery, analytical ability and communication skills are all important for success in this field. Good math skills are an asset.

Electronics technicians have a natural curiosity about how things work. To work in this field, they need strong analytical skills, and should be persistent, adaptable and flexible so as to be able to find solutions to a wide variety of problems. They must possess keen problem-solving and trouble-shooting abilities, mathematical aptitude, knowledge of computers and good hand-eye coordination.

On the Job: CONSTRUCTION AND MAINTENANCE

Blaster (7372)

Boilermaker (7262)

Bricklayer (7281)

Cabinetmaker (7272)

Carpenter (7271)

Communications Electrician
(Construction Craft) (7241)

Concrete Finisher (7282)

Construction Craft
Labourer (7611)

Construction Electrician (7241)

Construction Lineman (7244)

Electrician
(Domestic and Rural) (7241)

Floorcovering Installer (7295)

Gasfitter - First Class (7253)

Glazier (7292)

Heavy Duty Equipment
Technician (7312)

Heavy Equipment
Operator (7421)

Hoist Operator (7371)

Industrial Electrician (7242)

Industrial Instrument
Mechanic (2243)

Insulator (Heat and Frost) (7293)

Ironworker (7264)

BRICKLAYER (7281)

Most people think of bricklaying as simply laying bricks, blocks or stones. However, this trade is multi-dimensional and varies in complexity, from laying a masonry walkway to installing the ornate exterior of a high-rise building. Bricklaying is more closely related to architecture than pure construction as it demands a considerable amount of pre-planning, calculation and analysis of blueprints.

Every project starts with an examination of the plans and technical specifications with the architect or engineer in charge to see what has to be done, followed by material selection and work site preparation. Bricklayers use an assortment of tools to shape materials. These tools are used to build walls, floors, partitions, fireplaces, chimneys and other structures made of brick, pre-cast masonry panels, concrete blocks and other masonry materials.

CABINETMAKER (7272)

Cabinetmaking involves more than simply designing, building and repairing cabinets. It encompasses working with a variety of structures such as doors, windows and window frames, and all types of furniture. Cabinetmakers must follow blueprints and designer specifications exactly to construct and repair wooden articles. Today, sophisticated equipment, basic woodworking machines, and portable power and hand tools are used to perform many of the job functions.

Cabinetmakers must have a broad knowledge of wood, its structures and properties, and an assortment of cabinetry hardware and materials. A worker with training and education could start in production and work their way up to a supervisory or management position in the wood industry, as the skills are transferable to a number of other professions.

Bricklayers should be physically fit, enjoy working outdoors, work well with their hands and have a good eye for precision. They are expected to work quickly and precisely according to a prearranged schedule, to accurately follow blueprints, and to be flexible enough to adapt to various materials, techniques and conditions. Motivation, dependability and the ability to take initiative are all important characteristics of bricklayers. They also need good interpersonal communication skills to interact with clients, foremen and co-workers, and an appreciation of architecture, design and proportion.

Cabinetmakers like to build things and work with their hands. They should be physically fit and have strong math skills, manual dexterity and good hand-eye coordination. They must also be able to read, interpret and accurately follow blueprints, drawings and other design specifications. What's more, a cabinetmaker's artistic touch and creativity are often as important as their woodworking abilities in the development and design of new products.

Bricklayers often work for construction companies or are self-employed as sub-contractors and work on a project-by-project basis. Working either structurally or decoratively, they may renovate commercial and residential structures or be employed in the construction of new buildings. Bricklayers routinely work in concert with architects and engineers to coordinate activities on large construction sites.

Cabinetmakers work in all areas of the wood industry. They can be self-employed or employed by furniture manufacturing and repair companies, construction firms or cabinetmaking contractors. Although the jobsite changes from factories to custom shops, nearly all of the work is done indoors in large, well-lit and well-ventilated areas.



For more information on these trades, visit the National Occupation Classification (NOC) website - www23hrdc-dthc.gc.ca. Simply enter the four digit number of the trade you are interested in into the NOCs "Quick Search" tool.

Locksmith Services (7383)	Plumber (7251)	Rofer (7291)	Steamfitter/Pipefitter (7252)
Metal Fabricator (Fitter) (7263)	Powerline Technician (7244)	Sawfiler/Fitter (7383)	Tilesetter (7283)
Mobile Crane Operator (7371)	Power System Electrician (7243)	Sheet Metal Worker (7261)	Water Well Driller (7373)
Oil Burner Mechanic (7331)	Power System Operator (7352)	Small Engine and Equipment Mechanic (7335)	Welder (7265)
Painter and Decorator (7294)	Refrigeration and Air Conditioning Mechanic (7313)	Sprinkler System Installer (7252)	
Plasterer (7284)			

PLUMBER (7251)

Plumbers install and repair plumbing fixtures and water, waste disposal, drainage and gas systems in residential, commercial and industrial buildings. They read blueprints to determine the layout of a system and measure and mark areas where the pipes will be installed and connected, checking for obstructions such as electrical wiring. Once a project has begun, they perform a number of tasks, from simple installation of pipes and fittings to complex calculations and planning in specialized environments such as hospitals. An important part of their job is to fit the piping into the building with the least waste of materials while maintaining grade or slope and avoiding trapping air or fluids in the system. A plumber's skills are also applicable in maintenance, service work, hydronic heating and medical gas cross connection controls and inspections.

POWERLINE TECHNICIAN (7244)

The work of powerline technicians is critical to the delivery of electricity throughout our communities. People trained in this trade build and maintain electrical power lines and cables, and other related equipment like insulators, conductors, lightning arrestors, and transformers. They work underground and at various elevations, always using a range of sophisticated equipment. The work is often performed outdoors, in all weather conditions, and can involve a lot of travel. Some work sites are remote and require travel by helicopter or boat.

TRAITS & TALENTS

An interest in construction and good math skills are assets for plumbers. They should enjoy working with their hands, performing a variety of tasks and be proficient in using an extensive range of hand tools, powered machines, torches and welding equipment. They must be able to understand and follow detailed plans, and to visualize concepts and entire piping systems. In addition, plumbers must be good problem solvers and able to apply their analytical abilities in a wide assortment of situations.

Powerline technicians like to work outside and many have a sense of adventure. The job requires people with good mechanical aptitude, the ability to lift heavy objects, and the ability to work at heights in varying extreme climates. They also need to have a sound knowledge of the principles of electricity power transmission and distribution systems which are also known as grids. Powerline technicians must be very safety-conscious.

WORKPLACE

The main area of employment for plumbers is construction, both residential and commercial, working either for plumbing firms or self-employed as sub-contractors. They also find work in the maintenance departments of large institutions such as hospitals or schools. Plumbers are often required to work in cramped areas or at considerable heights, and the work can be physically demanding, as there is a considerable amount of lifting and carrying of piping materials involved.

Powerline technicians work in the private and public sector. They are generally employed by electric power generation, distribution and transmission companies, electrical contractors, and public utility commissions. Technicians can expect to have a 40 hour work week but may work longer due to extreme weather conditions or extenuating circumstances.

On the Job: TRANSPORTATION

Agricultural Equipment Technician (7312)

Automotive Electrical Technician (7321)

Automotive Service Technician (7321)

Inboard/Outboard Mechanic (7335)

Aircraft Maintenance Engineer (2244)

Automotive Glass Technician (7322)

Heavy Duty Equipment Technician (7312)

Motor Vehicle Body Repairer (Metal and Paint) (7322)

Autobody Repairer (7322)

Automotive Painter (7322)

Heavy Equipment Operator (7421)

Motorcycle Mechanic (7334)

AIRCRAFT MAINTENANCE ENGINEER (2244)

Aircraft mechanics install, maintain, repair and overhaul aircraft structures and mechanical and hydraulic systems. They must rigorously check and inspect equipment to make sure hazards are prevented, and that they meet Transport Canada's standards of performance and safety. Their work typically consists of taking equipment apart, checking it and diagnosing problems, or performing routine maintenance, such as cleaning and lubricating or adjusting valves and seals. An aircraft mechanic may specialize in specific aircraft systems such as engines, airframes or hydraulic systems. With experience, aircraft mechanics may progress to supervisory positions or, if they have an Aircraft Maintenance Engineer's (AME) licence, they may become aircraft inspectors.

AUTOBODY REPAIRER (7322)

Autobody repairers make body repairs to cars, trucks and other motor vehicles using traditional hand tools and a range of speciality body repair tools such as cutting torches, soldering equipment, blocks, hammers and spray guns. A career in autobody repair can cover a number of different areas, such as paint and refishing body work and frame work, although paint is considered a separate trade. Knowledge of this profession is applicable to many other areas of the automotive sector, and there is a high demand for skilled employees throughout the industry.

Aircraft mechanics need manual dexterity and good hand-eye coordination. Furthermore, they must be in good physical condition, since heavy lifting and climbing may be required. They must also be able to interpret and follow written instructions. An understanding of computerized machinery as well as good communication and analytical skills are very important.

Physical fitness and strength, manual dexterity and mechanical aptitude are obvious traits of an autobody repairer. Other characteristics include good analytical and problem-solving skills, good eyesight and colour vision, good interpersonal and customer relation skills, and an interest in computer and electrical work.

People in this field are employed by aircraft manufacturers, maintenance and overhaul organizations, and airlines and other aircraft operators. They most often work at airports or repair yards, mainly indoors, in repair shops, plants and other buildings, but many will work outside at least part of the time. An aircraft mechanic can not be afraid of heights, as they may work on the top of jet wings and fuselages.

Autobody repairers can work for car dealerships, independent garages or speciality repair shops. In smaller shops, workers often do both the body repairing and the painting, while in larger shops they may specialize in one type of repair. A career in autobody repair offers a variety of challenges as each damaged vehicle presents a different set of problems. The majority of repairers work alone under the general direction of a supervisor.



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Parts person (1472)

Recreation Vehicle Service Technician (7321)

Small Engine and Equipment Mechanic (7335)

Transport Refrigeration Mechanic (7313)

Transport Trailer Technician (7321)

Truck and Transport Mechanic (7321)

AUTOMOTIVE SERVICE TECHNICIAN (7321)

Automotive service technicians make mechanical repairs and carry out scheduled maintenance on cars, trucks and other motor vehicles using a variety of testing equipment and tools. This process customarily involves the use of computerized diagnostic equipment, such as infrared engine analyzers, spark plug testers and compression gauges. New developments in engines, transmissions and suspension systems, and the increased use of electronic components are changing the mechanic's job into that of a technician, with more emphasis on vehicle diagnosis.

TRUCK AND TRANSPORT MECHANICS (7321)

Truck and transport mechanics work on the largest vehicles on the road, such as buses, motor homes, tankers, and different types of trucks, including dump trucks, flat beds, and pick-up trucks. They inspect, troubleshoot, repair, replace and maintain operating systems and components such as chassis and frames, brakes and steering, cab and body, engine and supporting systems, drive train, and accessories. There are on-going changes in the trucking industry that truck and transport mechanics must be aware of and receive further training on. Today, trucks have fewer mechanical parts, more power, and are able to carry more payloads. They are also more electronically controlled, made with lighter and stronger materials, and require less servicing.

TRAITS & TALENTS

Automotive service technicians should have a genuine interest in cars and mechanics, mechanical aptitude and knowledge of how automobiles work. They also need analytical abilities and problem-solving skills to understand and diagnose malfunctions quickly and accurately. With improving technology, knowledge of computers and electronics is essential.

Truck and transport mechanics are usually in good physical shape and have strong mechanical aptitude and problem-solving skills. They must also be prepared for a career of life-long learning. Mechanics are constantly receiving updated technical manuals and instructions about their occupation. What separates the simply good from the great mechanics is an ability to keep abreast of engineering and technological advances.

WORKPLACE

Automotive service technicians are employed in a number of sectors of the economy. Most work in repair shops, at car dealerships, and in the service departments of industrial, manufacturing and resource-based companies that have large motor vehicle fleets. Shift and weekend work is sometimes required, as many repair shops are now open late to better serve their clients.

Truck and transport mechanics can be found in small repair shops, large fleet maintenance companies, public transportation companies and construction companies. They use a variety of tools, equipment, and materials. Many trucks are now built with more user-friendly equipment and self-monitoring systems, improving the ability to repair and maintain them.

On the Job: SERVICE

Appliance Service
Technician (7332)

Barber (6271)

Elevator Constructor and
Mechanic (7318)

Graphic Arts (Press) (5223)

Arboriculturist (2225)

Community Antenna Television
Technician (7247)

Food and Beverage Server (6453)

Hairstylist (6271)

Automotive Machinist (7231)

Cook (6242)

Graphic Arts (Bindery) (5223)

Horticulturist (Landscape-
Greenskeeper) (2225)

Baker (6252)

Electric Motor System
Technician (7333)

Graphic Arts (Pre-Press) (5223)

Industrial
Warehouseperson (7452)

BAKER (6252)

A career in baking offers a variety of areas in which to specialize. Bakers are responsible for making breads, bagels, pretzels, cakes, muffins, cookies and pastries as well as chocolate and candy, sugar sculptures and icing. They can prepare many different baked goods or specialize in just one. Depending on their experience and training, they may hire, train and supervise other baking personnel, order and control supplies and stock, and price the various products as well. Bakers are not only required to follow recipes, but in many instances to also create them.

GRAPHIC ARTS TECHNICIAN (5223)

Graphic arts technicians - such as animation painters, copy stylists, paste-up artists, sign painters, stencil makers and lettering artists - produce and assemble artwork, photographs, lettering and drawings, using the latest in desktop publishing software. They assist in conceptualizing a project, interpreting design specifications or sketches, and preparing production materials for press, electronic or multimedia publishing. Their handy work is behind many of the most popular advertisements, magazines, newspapers, billboards, and catalogues you see every day.

Reliability, sensible time-management skills, and the ability to work under pressure are all desirable traits in a baker. They also need basic analytical and organizational capabilities. Interpersonal communication skills are necessary in order to deal effectively and politely with staff and customers. This is an ideal profession for people who want to work with their hands and express their inventiveness and creativity through their work.

Graphic arts technicians have a keen eye for design and should be able to accommodate the needs of others, such as clients. Time management skills are essential as many graphic arts technicians work in highly deadline-driven environments. Superior knowledge of computers, animation and illustration are important assets.

Although bakers are most often employed by small retail bakeries, a significant number of them are also found working for restaurants, supermarkets, catering services and large wholesale bakeries.

Graphic arts technicians spend a considerable amount of time working with desktop publishing and printing presses. They work autonomously and also as part of teams. Graphic arts technicians can expect to work for publishing, communications, advertising, marketing, printing and multimedia firms. Others can expect to work for media companies and film production companies. Many are self-employed.



For more information on these trades, visit the National Occupation Classification (NOC) website - www23hrdc-dthc.gc.ca. Simply enter the four digit number of the trade you are interested in into the NOCs "Quick Search" tool.

Jeweler and Goldsmith (7344) Stationary Engineer (7351)
 Locksmith Services (7383) Upholsterer (7341)
 Meat Cutter Services (6251)
 Powerline Technician (7244)

COOK (6242)

There are two main types of cooks (also known as chefs): institutional cooks who prepare a small selection of entrees, vegetables and desserts in large quantities, and restaurant cooks who prepare a wider selection of dishes in individual servings. The chef is generally the most highly skilled, trained and experienced of the kitchen's staff.

Cooks are responsible for planning menus, ensuring food quality, deciding the size of servings, estimating material and labour costs, administering budgets and hiring staff. The head chef supervises the activities of sous-chefs, specialist chefs and cooks and instruct them in the preparation, cooking, garnishing and presentation of food.

HORTICULTURIST (2225)

Often called tree surgeons, horticulturists survey and assess landscapes, and perform cultural, biological, and chemical pest control. Their work adds life and beauty to our communities and neighborhoods, and improve our environment. Horticulturists are often called upon to protect trees on construction sites and appraise the value of damaged or destroyed trees. They inspect trees and shrubs to diagnose problems and diseases.

Their skills are becoming more valuable than ever because of the increased awareness of the environment. There are many career opportunities available for horticulturists!

TRAITS & TALENTS

Cooks must be highly organized in order to schedule food preparation, coordinate the work of the kitchen staff, and ensure that quality food supplies are available in the right quantities. Good interpersonal skills are essential for communicating effectively with customers and other employees. In addition, cooks should be people-oriented and team players, as they work closely with kitchen and service staff. As the presentation of a meal is almost as important as the preparation of its ingredients, many cooks have a creative and artistic flair. A keen sense of taste and smell are also necessary.

Horticulturists generally love the outdoors and have a natural curiosity about their surroundings. They also don't mind heights and have a good sense of balance. Some of the work requires climbing trees with and without spurs. Horticulturists normally take classes in forestry, plant science, pest management, and natural resources.

WORKPLACE

While the majority of cooks work in restaurants, they are also employed by hotels, catering businesses, tourist resorts, cruise ships and institutions. Their schedules routinely involve long and irregular hours, including evenings, weekends and holidays.

The work of horticulturists can be varied. Many ply their trade outdoors on golf courses or in public parks. Some work on major research projects on crop production or plant breeding for private companies or the government. Some horticulturists with advanced degrees in sciences become professors and work for educational institutions.

SKILLS to be a Successful Tradesperson



A CAREER IN THE TRADES REQUIRES KNOWLEDGE AND SKILL, INCLUDING

- good literacy
- mathematical and analytical skills
- problem solving skills
- attention to detail
- an aptitude for visualizing the end product
- creativity and imagination
- coordination and dexterity
- the ability to work with tools
- computer proficiency
- the ability to learn new technologies

As educators, you play a key role in shaping young minds and influencing the career ambitions of your students. The following questions may help to identify students with the right aptitude and qualities for a career in skilled trades

DOES YOUR STUDENT POSSESS...

- a natural knack for building and repairing?
- good hand-eye coordination?
- a talent for tackling mechanical challenges?
- an eye for detail?
- physical dexterity and stamina?
- an ability to solve mathematical problems?
- an ability to think analytically to arrive at a solution?
- an active imagination?
- a creative talent?

DOES YOUR STUDENT ENJOY...

- working with technology and computers?
- working with tools to achieve a task?
- being physically active?
- being busy and constantly on the move?
- working outside?

IS YOUR STUDENT MOTIVATED BY...

- seeing his or her achievements at the end of the day?
- wanting to 'earn while they learn' rather than taking on student debt?
- making a good salary?
- lifelong learning?
- wanting a rewarding career?

Students that answered **YES** to any of these questions should seriously consider careers in skilled trades

CAREER Path

Having a skilled trade opens doors and generates long-term options for our youth. The first step is becoming an apprentice and becoming a certified journeyman.

I can become a supervisor or manager

I can become a business owner

I can represent my trade in a business, trade or labour group

I can become a master journeyman

I can become a trade instructor

Patrick, 23, carpenter apprentice

THE OPPORTUNITIES TO SUCCEED AS A TRADEPERSON ARE ENDLESS.
IT ALL DEPENDS ON

- ▶▶ GOOD ATTITUDE
- ▶▶ GOOD WORK ETHIC
- ▶▶ PASSION FOR YOUR TRADE!

Let's take a look at the most important step on this path to success... **APPRENTICESHIP.**

"There is a misconception that trades are dead-end careers. In fact, the career path of a trades or technology graduate can lead to senior management, contractor, entrepreneur or inventor."

Sam Shaw, President, Northern Alberta Institute of Technology



About Apprenticeship

Imagine having one-on-one post-secondary training and learning all the theory and practical intricacies of your chosen career. Now imagine being paid for it!

APPRENTICESHIP IS...

...a high quality post-secondary option that gives youth the opportunity to combine on-the-job and in-school technical training, enabling them to obtain the skills required to become a certified tradesperson. Apprenticeship training provides the opportunity for "hands-on" learning with the ability to "earn while you learn."

In this section, we explore:

- apprenticeship.
- the benefits of apprenticeship.
- how to travel with a trade.
- steps to entering an apprenticeship.
- key partners in apprenticeship.
- frequently asked questions about apprenticeship.

"The advantage of the journey person/apprentice training relationship that is built into the system cannot be over-valued. One-on-one learning assures that an apprentice genuinely understands a procedure before moving on. Apprentices develop confidence in their abilities in a steady progression as they train, and mature as the responsibilities increase and they tackle new tasks and roles."

Valerie Querend, Women in Trades and Technologies (WTT) Facilitator, Saskatchewan Institute of Applied Science and Technology

KEY BENEFITS of Apprenticeship

There are lots of benefits of taking an apprenticeship:

1

EARN WHILE YOU LEARN ON THE JOB

Apprentices are given a salary by the employers that hire them. This salary is equitable within the industry and in accordance to provincial standards. The apprentice's salary may increase each year, reaching salary rates of a certified tradesperson (journey person) as they get closer to completion.

2

KEEP STUDENT DEBT LOW

Another big benefit of apprenticeship training is that debt loads after completion of apprenticeships are much lower since apprentices "earn while they learn". For example, a university graduate may make \$30,000 in their first year of work but they will leave school with an average debt of \$19,500 (one in seven actually have debts of more than \$25,000). An apprentice might make \$28,000 their first year but will not have to contend with a \$20,000 debt.

3

A JOB GUARANTEE

Skilled workers are in demand all across the country and the world. A good work ethic, a can-do attitude and a completed Certificate of Qualification will almost guarantee youth a job when they finish their post-secondary education.

"Apprenticeship offers a viable post-secondary education option to university and college, and an opportunity to 'earn while you learn'."

Emmanuel Dick, Past President, Canadian Ethnocultural Council

"Apprentices are the first link to the success of Canadian businesses. They are eager and want to learn, greatly contributing to productivity and a quality product. Once they are certified, they become the main stay of our business as skilled journey persons. Supporting apprenticeship ensures that industry will have a strong workforce well into the future. Without qualified employees, I simply wouldn't have a business."

Don Obrowsky, President, Waiward Steel Fabricators Limited

4

ELIGIBILITY FOR EMPLOYMENT INSURANCE DURING IN-SCHOOL TRAINING

Apprentices may receive Employment Insurance (EI), if they're eligible, during their in-school training. That's one of the many benefits of apprenticeship training versus other forms of post-secondary education. You can go to school for the block release period of 6-8 weeks and earn a percentage of your salary, subject to the maximums under EI. Some employers, if they wish, "top up" the employment insurance benefits to reduce wage loss for apprentices attending school.

5

RECEIVE PERSONAL TRAINING AND MENTORSHIP

Apprentices have an opportunity to learn high level skills through personal, on-the-job training from a highly qualified journey person.

6

ACQUIRE A SKILL THAT WILL LAST A LIFETIME

As a tradesperson, the skills you learn will not only last you a lifetime, they will also open doors to other opportunities. You can take advanced training to continue developing your talent and work your way into challenging and rewarding careers in management or teaching. Many tradespeople start their own business.

Did you know?

- Many provincial/territorial governments have introduced special programs for secondary school students who are interested in apprenticeship. These programs offer early training in the trades and opportunities to try working on-the-job. Students have a chance to earn credits towards their apprenticeship in a "pre-apprenticeship" program. The exact provisions of these programs vary by trade and jurisdiction. All these programs highlight the priority that industry and government attach to attracting students into apprenticeship training. Specific information is available from your local apprenticeship office.
- There were 248,000 registered apprentices in Canada in 2003.

HAVE SKILLS – Will Travel!

Today's skilled trades workforce is very mobile, in large part due to the Interprovincial Standards "Red Seal" Program



Another benefit of completing an apprenticeship is the opportunity to obtain your "Red Seal" endorsement. The Interprovincial Standards "Red Seal" Program (also known as the Red Seal Program), utilizes common standards for trades in all the provinces and territories. It alleviates barriers to labour mobility for workers in the skilled trades and also reduces the risk of skill shortages by allowing qualified workers to seek work in other provinces/territories.

HOW DOES IT WORK?

The apprenticeship program in each province and territory leads to a journeyman certificate*. People who have a journeyman certificate can obtain a Red Seal endorsement in 45 trades. This requires the tradesperson to pass an interprovincial "Red Seal" examination for their trade.

With a Red Seal endorsement, the journeyman certificate is automatically recognized in any province or territory that also issues a journeyman certificate for that trade. This means that individuals will not be required to write a separate journeyman certificate examination for that province or territory in order to work there.

WHAT ARE THE BENEFITS OF OBTAINING A RED SEAL ENDORSEMENT?

1. Your trade certification is recognized in other provinces and territories.
2. It confirms that you have achieved a nationally recognized level of competency in your trade.
3. It allows a journeyman to seek work in other provinces and territories.

* The term for trade certification varies by province and territory.



www.red-seal.ca

DESIGNATED RED SEAL TRADES ACROSS THE COUNTRY

source: www.red-seal.ca

	NL	NS	PE	NB	CC	ON	MB	SK	AB	BC	NT	YT	NU
Agricultural Equipment Technician	*	*	*	*		*	*	*	*	*			
Appliance Service Technician	*	*	*	*		*			*	*	*		
Automotive Painter	*	*	*	*		*	*	*	*	*	*	*	
Automotive Service Technician	*	*	*	*	*	*	*	*	*	*	*	*	*
Baker	*	*	*	*		*	*		*	*	*	*	*
Boilermaker	*	*	*	*	*	*	*	*	*	*			
Bricklayer	*	*	*	*	*	*	*	*	*	*		*	
Cabinetmaker	*	*	*	*	*	*	*	*	*	*	*	*	*
Carpenter	*	*	*	*	*	*	*	*	*	*	*	*	*
Concrete Finisher	*	*	*	*	*			*	*	*			
Construction Electrician	*	*	*	*	*	*	*	*	*	*	*	*	*
Cook	*	*	*	*	*	*	*	*	*	*	*	*	*
Electric Motor System Technician	*	*	*	*		*	*		*	*	*	*	*
Electronics Technician(Consumer Products)	*	*	*	*		*	*	*	*	*	*	*	*
Floorcovering Installer	*	*	*	*	*	*		*	*	*	*	*	*
Glazier	*	*	*	*	*	*	*	*	*	*	*	*	*
Hairstylist	*	*	*	*	*	*	*	*	*	*	*	*	*
Heavy Duty Equipment Technician	*	*	*	*	*	*	*	*	*	*	*	*	*
Industrial Electrician	*	*	*	*	*	*	*	*	*	*	*	*	*
Industrial Instrument Mechanic	*	*	*	*		*	*	*	*	*	*	*	*
Industrial Mechanic (Millwright)	*	*	*	*	*	*	*	*	*	*	*	*	*
Insulator (Heat and Frost)	*	*	*	*	*			*	*	*	*	*	*
Ironworker (Generalist)	*	*	*	*	*	*	*	*	*	*	*	*	*
Lather (Interior Systems Mechanic)	*	*	*	*	*	*	*	*	*	*		*	*
Machinist	*	*	*	*	*	*	*	*	*	*	*	*	*
Metal Fabricator (Fitter)	*	*	*	*	*	*	*	*	*	*	*	*	*
Mobile Crane Operator	*	*	*	*	*	*	*	*	*	*	*	*	*
Motor Vehicle Body Repairer (Metal and Paint)	*	*	*	*	*	*	*	*	*	*	*	*	*
Motorcycle Mechanic	*	*	*	*		*				*			
Oil Burner Mechanic	*	*	*	*					*	*	*	*	*
Painter and Decorator	*	*	*	*	*	*	*	*	*	*	*	*	*
Partsperson	*	*	*	*	*	*	*	*	*	*	*	*	*
Plumber	*	*	*	*	*	*	*	*	*	*	*	*	*
Powerline Technician	*	*	*	*		*	*	*	*	*	*	*	*
Recreation Vehicles Service Technician	*	*	*	*	*	*			*	*	*	*	*
Refrigeration and Air Conditioning Mechanic	*	*	*	*	*	*	*	*	*	*	*	*	*
Rofer	*	*	*	*	*	*	*	*	*	*	*	*	*
Sheet Metal Worker	*	*	*	*	*	*	*	*	*	*	*	*	*
Sprinkler System Installer	*	*	*	*	*	*	*	*	*	*	*	*	*
Steamfitter/Pipefitter	*	*	*	*	*	*	*	*	*	*	*	*	*
Tilesetter	*	*	*	*	*	*		*	*	*			
Tool and Die Maker	*	*	*	*	*	*	*		*				
Transport Trailer Technician	*	*	*	*		*	*		*	*		*	*
Truck and Transport Mechanic	*	*	*	*	*	*	*	*	*	*	*	*	*
Welder	*	*	*	*		*	*	*	*	*	*	*	*

*Information on Newfoundland & Labrador and British Columbia reflects the 2001 data, while information on Nunavut is not available at this time. All other information dates from 2004.



5 STEPS

To An Apprenticeship



STEP 1

FINISH HIGH SCHOOL

Complete your secondary school education. Like university or college, the entrance requirements for most trades include Grade 12. A pre-apprenticeship is also an option while you are in high school.



STEP 2

FIND A TRADE THAT SUITS YOU

There are over 200 skilled trades in Canada, but which one is right for you? Assessing your interests, skills, aptitude and the kind of lifestyle you want is never an easy process. You should talk to your career /guidance counsellor at school and your parents, as well as consult your local apprenticeship office.



To learn more about becoming an apprentice, go to www.apprenticetrades.ca

Tips for FINDING AN EMPLOYER

NETWORK! NETWORK! NETWORK!

- Discover the "hidden" job market by going around to businesses that are in the trade you are interested in.
- Ask your career counsellors for advice. Consult your local apprenticeship authority, joint labour/management training boards, and trade associations to see if they know any employers who are looking for an apprentice.
- Tell everyone you know and everyone you meet that you are looking for a job.
- Carry a résumé with you everywhere. Leave it with every employer you speak to – even if they are not hiring.
- Get the names and phone numbers of the employers or supervisors you've reached out to. Follow up with them after a couple weeks. That tells them you really want the job!

“Apprentices not only benefit from the ‘earn while they learn’ dynamic of the apprenticeship training process, they also become confident of the security and accomplishment that mastering a trade provides.”

Ken Georgetti, President, Canadian Labour Congress



STEP 3
**FIND AN EMPLOYER
TO HIRE YOU**

Once you have picked a trade, you must find an employer to hire you. Approach this task like any other job search, bearing in mind that up to 80% of all job openings are never advertised.



STEP 4
REGISTER

Once you have found an employer to hire you, you'll need to register as an apprentice. Follow the steps established by the apprenticeship authority in your province or territory and sign the required contract with your employer. The contract outlines:

- The length of the training program
- The skills that must be learned
- The wages



STEP 5
START YOUR CAREER

After completing the program requirements and passing the required exam(s) for your chosen trade, you'll receive a Certificate of Qualification. **Congratulations!**

SCAN THE JOB WANTED ADS

You can also find an employer the old fashion way by pounding the pavement and scanning the classifieds in newspapers or the internet. Some of today's most popular on-line job boards include:

- monster.ca
- workpointis.com
- working.canada.com

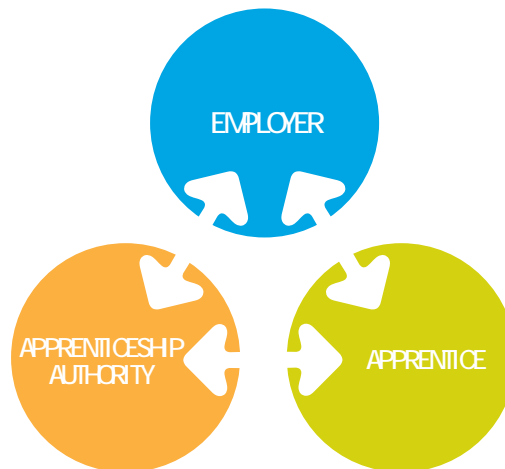
80%

**FAST
FACT**

of all job openings are never advertised!

APPRENTICESHIP – A Partnership for Success

A successful apprenticeship relies on the full support and participation of the apprentice, the employer, and the government. Below is an outline of their responsibilities.



EMPLOYER

1. Provide the apprentice with on-the-job training supervised by a certified journey person.
2. Maintain a work environment that is conducive to learning and offers the apprentice a safe place to work with proper equipment and shop facilities.
3. Pay the apprentice's wages (usually set at a rising percentage of the journey person wages).
4. Arrange for the apprentice to have time for in-school technical training.
5. Keep accurate records of the on-the-job training hours and type of work accomplished- usually in an official record book or log. In some provinces/territories the employer may also be responsible for providing a letter verifying the apprentice has completed all certification requirements.
6. Notify the local apprenticeship office if:
 - There are changes to facilities, equipment, or staffing which could affect the ability to provide on-the-job training or supervision.
 - The company relocates or changes its mailing address.
 - The apprentice leaves.

APPRENTICE

1. Find appropriate employment.
2. Actively participate in and successfully complete the required on-the-job and in-school training.
3. Keep track of his or her progress, including the required hours and skills sets needed to complete the apprenticeship. In some provinces/territories the apprentice may be given a log book that he or she is responsible for updating.
4. Provide honest and loyal service, showing due regard for the property of the employer.
5. Obey all lawful orders given by the employer or any person designated by the employer.
6. Work safely not just for personal safety but for that of co-workers.

APPRENTICESHIP AUTHORITY

1. Work with industry to develop and maintain occupational definitions, training and certification standards.
2. Designate training institutions that are authorized to deliver the in-school technical training portion of apprenticeship.
3. Set tuition fees and pay in-school technical training costs not covered by these fees.
4. Keep employers and apprentices informed about the system.
5. Issue certificates, monitor, and verify record books for apprentices and qualified journey persons.
6. Develop and manage examinations for each level of the program and final qualification for certification.
7. Assist in the scheduling of in-school technical training (in most provinces & territories).

MORE QUESTIONS? WE HAVE ANSWERS...

What is a journey person?

A journey person is an expert in a particular trade. He or she must have provincial or inter-provincial certification in their trade. The journey person is responsible for mentoring and training the apprentice in the workplace according to the provincial/territorial government guidelines. Once an apprentice is certified, they become a journey person.

Who is responsible for apprenticeship training?

Apprenticeship training is the responsibility of the provincial or territorial government.

Who can employ an apprentice?

Only employers who have a qualified journey person on staff to mentor an apprentice are able to hire apprentices, as well as those who adhere to all health and safety legislation within a jurisdiction.

Does an apprentice need to complete their training with one employer?

No. However, it is necessary that both the apprentice and the new employer notify their local apprenticeship authority about this change. All of the training documentation is required from the previous employers to verify the required skills have been obtained by the apprentice.

Where does in-school training take place?

The majority of apprenticeship programs involve technical training at community colleges or industry training centres. In some trades, private colleges also provide apprenticeship training.

What is certification?

Certification is a term used by most provincial and territorial governments to indicate that an apprentice has the necessary training requirements and has passed the certification examinations required within their trade. It shows both customers and employers that you have the skills and experience to practice your trade.

Are all trades certified?

No, not all trades are certified. However, there are some trades that are compulsory trades, meaning that they must be practiced only by certified journey persons and registered apprentices. Certification is voluntary in other trades.

Why is it important to be certified?

Being a certified journey person is a real advantage in today's workforce. First, there is proof that a tradesperson has all the training and skills needed to perform tasks – this is important to many employers and to customers. Certified journey persons also have a better chance of being promoted and making more money.

Is a high school diploma necessary to become an apprentice?

Most apprenticeship programs require a high school diploma. However, there may be exceptions based on the employer and the minimum requirements that are needed to enter into an apprenticeship program which is determined by the province or territory. Employers generally prefer an apprentice that has finished their secondary education, but they also consider the attitude, the aptitude, and the current skills of the youth to perform the job requirements.

Are there any opportunities for apprenticeship in high school?

Many provincial/territorial governments have introduced special programs for secondary school students who are interested in apprenticeship. These programs offer early training in the trades and opportunities to try working on-the-job. Students have a chance to earn credit towards their apprenticeship in a "pre-apprenticeship" program. The exact provisions of these programs vary by trade and jurisdiction. Currently, several provinces and territories offer youth apprenticeship programs. For more information, please contact your local apprenticeship authority (see contact list in Section 4).

"Apprentices are the future of skilled trades; we need them. Without apprentices there will be no skilled trade workforce."

Tim Flood, Co-chair of Construction Sector Council, John Flood and Sons Ltd.



Activities to Explore Skilled Trades and Apprenticeship

In this section, we explore:

- ideas for bringing skilled trades into your classroom
- classroom experiments to demonstrate the complexity of tasks that skilled tradespeople perform every day.

There are many interesting ways to explore skilled trades and apprenticeship with your students. This section includes a number of classroom activities to get your students thinking about the skills and knowledge required to perform a trade. You will also find a number of "Quick Tips" to get you started.

"I advise youth to take stock of their interests, skills and abilities and investigate a match to one of the many diverse trades occupations that are available. With good wages, challenging activities and stimulating workplace environments, trades jobs are able to provide them with fulfilling and satisfying careers."

Valerie Overend, Women in Trades and Technologies (WTT) Facilitator, Saskatchewan Institute of Applied Science and Technology (SIAT)

CLICK TIPS

- ▶▶ Invite a skilled tradesperson to your classroom to talk about their occupation. Tradespeople can be found through:
 - local businesses.
 - trade associations.
 - labour groups.
 - community colleges.
- ▶▶ Contact your local **apprenticeship authority** and the **Skills/Compétences Canada** office nearest you (see contact list in Section 4). Their staff would be happy to help you organize a classroom presentation about skilled trades for your students.
- ▶▶ Organize a field trip for your students to a skills competition in your region. These exciting Olympic-style skills competition showcase students' technical and leadership skills. Students participate in practical challenges designed to test skills required in technology and trade occupations. For more information, contact the Skills/Compétences Canada office nearest you.
- ▶▶ Assign a research project on a skilled trade. Start by dividing your class into groups. Have each group select a trade they are most interested in. Have them write down their initial perceptions and knowledge of their chosen trade.
Then have each group research their trade to identify:
 - the duties involved.
 - the education and skills needed to perform the trade.
 - the wage and the number of hours generally worked.
 - the work environment.Finally have each group make a presentation on their trade to the class. Make sure they talk about their initial perceptions and how they are different from the reality of the trade.



Activities for the classroom

Test Your Student's Skilled Trade IQ

Discover how much your students really know about skilled trades, and allow them to find out for themselves whether they're an apprentice, a journey person or master journey person! This fun and interactive quiz can be used to spark a dynamic discussion about skilled trades. The answer guide is on page 31. Good luck and have fun!

TEST YOUR SKILLED TRADES IQ

Are you an apprentice, journey person or master journey person?

Skills Shortage

- By what year will Canada have a shortage of 1 million skilled workers?
 - 2010
 - 2025
 - 2015
 - 2020
- What percentage of the Canadian workforce will be eligible to retire in the next 5 to 10 years?
 - 58%
 - 48%
 - 38%
 - 28%
- What percentage of current tradespeople plan on retiring within the next 7 to 10 years?
 - 25%
 - 50%
 - 75%
 - 35%
- How many workers in the manufacturing sector will be needed in the next 15 years due to retirement?
 - 100,000
 - 200,000
 - 500,000
 - 400,000

About Skilled Trades

- What percentage of new jobs will be in the skilled trades and technology sectors in the next two decades?
 - 70%
 - 40%
 - 60%
 - 30%
- How many skilled trades occupations are available in Canada?
 - over 150
 - over 200
 - over 50
 - over 100
- While the average national salary for a Canadian is \$40,000/year, what is the average salary of a certified skilled tradesperson?
 - \$35,000/year
 - \$70,000/year
 - \$50,000/year
 - \$60,000/year
- Skilled trades fall under four main sectors of the economy. What are they?
 - transportation, manufacturing, business administration, health sciences
 - construction, transportation, earth sciences, service
 - service, manufacturing, construction, transportation
 - business administration, construction, service, transportation

About Apprenticeship and Education

9. What is the average debt of a university student at the end of his or her studies?
- \$5,000
 - \$10,000
 - \$15,000
 - \$20,000
10. What is the percentage of students that graduate and complete college or university?
- 40%
 - 65%
 - 20%
 - 80%
11. Red Seal certified workers:
- have completed their apprenticeship training.
 - can work anywhere in Canada where their trade is designated.
 - have passed an inter-provincial exam
 - all of the above
12. What was the base salary (not including vacation pay) of a general carpenter apprentice in his or her first term in 2003? (Hint: It is 50% of the wage earned by a certified carpenter.)
- \$8.64/hour
 - \$12.50/hour
 - \$21.07/hour
 - \$14.49/hour
13. What is the ratio of on-the-job to in-school training for an apprentice during the full length of his or her apprenticeship?
- 60% classroom training; 40% on-the-job training
 - 80% classroom training; 20% on-the-job training
 - 20% classroom training; 80% on-the-job training
 - 40% classroom training; 60% on-the-job training
14. What does an apprentice receive after successfully completing his or her apprenticeship?
- a permit
 - a certificate of qualification
 - a record of achievement
 - a diploma.
15. What are some of the steps involved to completing an apprenticeship?
- Finish high school and find a trade that suits you.
 - Find an employer.
 - Register as an apprentice.
 - All of the above.
16. Approximately how many apprentices were registered in Canada in 2003?
- 236,000
 - 525,000
 - 248,000
 - 62,000

ARE YOU...***Just getting started (0-9/16)***

This is the perfect opportunity to learn as much as you can. If you're thinking about careers and are not sure where to start, or where your interests lie, be sure to check out www.jobfutures.ca and take the "Know Yourself Quiz." It's a great place to start!

An Apprentice (10-11/16)

Congratulations! You're ready to start your journey as a skilled tradesperson. With a little bit of work you too can gain a "Certificate of Qualification!" For more information about skilled trades in your area, go to www.apprenticetrades.ca.

A Journeyperson (12-13/16)

That's the ticket! You've got the knowledge, now you just need the experience. Apprenticeship can even start in high school. Your guidance counsellor will know tons of information on skilled trades – including how much of a rewarding experience it can be! Go to www.careersintrades.ca to find out even more cool facts about skilled trades.

A Master Journeyperson (14-16/16)

Wow! You've definitely demonstrated the aptitude and knowledge of a master journeyperson – a definite challenge. Visit www.red-seal.ca to find out how you can earn while you learn and travel across the country!

Test Your Skilled Trade IQ

ANSWER GUIDE

Skilled Shortage

1. D, 2020 (Conference Board of Canada)
2. B, 48% (Statistics Canada)
3. B, 50% (Information Technology Association of Canada)
4. D, 400,000 (Canadian Manufacturers and Exporters, Ensuring the Future of Canadian Manufacturing, February 2005)

About Skilled Trades

5. B, 40% (Information Technology Association of Canada)
6. B, Over 200 (Canadian Apprenticeship Forum)
7. C, \$50,000 (www.schod.tocareer.ca)
8. C, service, manufacturing, construction, transportation

About Apprenticeship and Education

9. D, \$20,000 (The Daily, 4/26/04, Statistics Canada)
10. A, 40% (www.schod.tocareer.ca)
11. D, all of the Above (Red Seal, Canada, www.red-seal.ca)
12. D, \$14.49/hour (Carpenters' Local Union 27 Joint Apprenticeship & Training Trust Fund Inc.)
13. C, 80%, 20%
14. B, a certificate of qualification
15. D, all of the above
16. C, 248,000 apprentices (Statistics Canada)

Activities for classroom fun*

Classroom Activity 1

WE ALL SCREAM FOR ICE CREAM

Trade Link: Cook/Chef

(A tasty activity on chemical reactions and heat transfer)

TEACHER BACKGROUND

- Duration:** one (1) 45 minute class
- Group Size:** small groups of 4 students (or smaller if you have sufficient supplies).
- Setting:** indoors (classroom).

RATIONALE

At this level, students explore properties of fluids and use the particle theory to explain their observations. They also learn about chemical reactions and try to relate them to their own experiences. Cooks take advantage of this knowledge in their preparation of foods. Kitchen chemistry can involve a range of scientific principles from the simplest to the most complex.

METHOD

In this activity, you will cool down milk, sugar and vanilla by putting the solution in a test tube and placing it in a container filled with an ice and salt mixture. It will cool down enough to freeze. In essence, the salt and ice takes heat away from the milk solution.

MATERIALS

- Soup can, coffee can or small metal container.
- A test tube or baby food jar.
- 10ml of salt.
- Crushed ice.
- Celsius thermometer.
- 15 ml homo milk (or half and half cream).
- Pinch of sugar.
- Vanilla.
- Swizzle stick, popside stick or thin stick (for stirring), about 15cm long.

GETTING STARTED

Chemical reactions have become a part of our everyday life. They are all around us. You may have learned how we can affect the properties of some objects by adding new substances to them. In some places, in the winter time, people add salt to roads to lower the freezing point of water. This helps to keep roads free of snow and ice. In this activity, you will take advantage of this scientific principle and get a "tasty" result.

*The activities on pages 33-44 are based on a resource called, "Making Connections: Linking Science and Math with Trades and Occupations," developed by the NWT Apprenticeship and Occupational Certification.

THE ACTIVITY

1. Put crushed ice in the metal container so that it is about 1/2 full.
2. Add 10 ml of salt to the ice and stir until the temperature is between -8 degrees Celsius and -10 degrees Celsius.
3. If the temperature is not low enough, add more salt and keep stirring.
4. Put 15 ml of milk (or half and half), a pinch of sugar and one drop of vanilla into a CLEAN test tube (or baby food jar).
5. Place the test tube in the metal container and pack the ice around it.
6. Stir your mixture for the next 15 to 20 minutes until your ice cream is ready to eat.
7. Describe all the reactions (physical and chemical) which took place during this experiment.

BRANCHING OUT (EXTENSIONS AND VARIATIONS)

1. Challenge students to lift an ice cube floating in water out of a container without touching it. All they are allowed to use is a string and some salt. (Solution: salt lowers the freezing point of water, so when you put salt on the string and touch it to the ice, the ice cube under the string melts a little. As the ice melts, the air around it cools and causes the ice cube to refreeze and the string becomes frozen to the ice cube.)
2. Invite a cook to come into the classroom and talk about chemical reactions and food chemistry.

INFORMATION BITE

During your training as a cook, you will not only learn about kitchen safety and basic cooking principles, you will also learn advanced preparation techniques for both small and large situations. A strong background in classification systems will assist you in learning about various types of foods such as sauces, stocks, soups, salads, fish, dairy products and cheeses, baked goods and desserts. Cooks are employed in hotels, restaurants, catering firms, cafeterias, institutions and isolated camps. Kitchen mathematics includes ratios, recipe conversions, fractions, decimals, and working with invoices and orders.

Classroom Activity 2

GOING UP?

Trade Link: Inspector (Electrical)

(An activity on hydraulics)

TEACHER BACKGROUND

Duration: one (1) 45 minute class
Group Size: small groups of 2-3 students.
Setting: indoors (classroom).

RATIONALE

Students, when studying fluids and hydraulics, learn that fluids have special properties such as viscosity, density, buoyancy and compressibility which are useful in industry and in our daily lives. Most people think of liquids when they hear the word “fluids”, but gases are also fluids. These concepts, combined with a basic understanding of Pascal’s law have led to numerous inventions such as hydraulic and pneumatic which are used every day by heavy duty equipment operators and mechanics. Systems that use fluids to transfer forces are called hydraulic systems.

METHOD

This activity should be done over a sink. Students create a hydraulic press using two identical syringes connected by plastic tubing. The experiment can be repeated using one large and one small syringe. In both scenarios, the moving part of the syringe represents a movable piston. Students can use their sense of touch to compare the amount of force required in both cases to move an identical object resting on the larger sized syringe.

MATERIALS

- Two identical syringes (approximate 60ml size).
- One syringe (10ml).
- Beaker or glass of water.
- Plastic tubing approximately 100cm in length (airline tubing for aquarium filters works well).
- Clamps and retort stands to hold syringes (optional).
- Heavy object or weights (kg).

GETTING STARTED

The study of fluids and their various properties such as buoyancy, density, viscosity and compressibility has led to inventions which have helped us to do work or make our lives easier. These systems are called hydraulic systems. In this activity, you will design a hydraulic press.

THE ACTIVITY

1. Connect two identical large syringes (plungers removed) with plastic tubing (100cm in length).
2. Add water to one until both syringes are full.
3. Keeping the two syringes level, place a plunger into one syringe, pushing it all the way in.
4. Place the second plunger into the open syringe, pushing gently until both plungers are halfway down. You now have a closed system with no air in it.
5. The syringes should be level and held carefully or supported on retort stands with clamps. Place a small weighted object on top of one of the syringe plungers and push against the other plunger to make it rise. You will need to compare the force used to raise the object in this activity with the force needed in the activity identified in the next step.
6. Repeat this experiment using one syringe from the previous activity and a second smaller syringe. Compare the force needed to move the same weighted objects (placed on the larger plunger) as in the first activity. Which activity required the least amount of force?

BRANCHING OUT (EXTENSIONS AND VARIATIONS)

1. Repeat experiment using a 10ml and a 100ml syringe (if available). Were the results what you expected?
2. Design an experiment to show if the type of liquids used affects the results.
3. Test to see if the experiment will work using "air" as your liquid.
4. Design posters on elevator safety or handicap lifts to promote safety among younger students at your school.
5. Find out how often lift devices in your school are inspected and by whom?

INFORMATION BITE

To be an electrical and/or elevator inspector requires a journeyman ticket as an electrician and/or elevator constructor. Elevator constructors train to install, modify, service and repair electrical and hydraulic elevators, hoists, moving walkways, and escalators. Electricians learn about electrical systems, controls and switches, heating and cooling systems, electronics and lighting. To be successful in either trade, you will need mechanical aptitude, the ability to do detailed and precise work, the ability to read blueprints, and a willingness to continually upgrade your knowledge and skill levels regarding new innovations in the industry. Inspectors generally have extensive experience in the trades area and work for government and/or regulatory agencies.

Classroom Activity 3

KEEP YOUR COOL

Trade Link: Refrigeration and Air Conditioning Mechanic

(An activity on minimizing heat energy transfer)

TEACHER BACKGROUND

Duration: two 45 minute classes (includes taking temperature readings during the day).

Group Size: small groups of 4 students.

Setting: indoors (classroom).

RATIONALE

Heat is a form of energy very important to our lives and to our community. Students should have an opportunity to explore properties of heat through discovery. Students at this level learn about the kinetic molecular theory and the particle theory. They can explain heat loss or transfer using these theories.

METHOD

In this activity, students will be asked to design a device to minimize heat loss. Using classroom materials provided by the teacher, students will create a device to hold a container of ice cold water. Although the teacher provides generic materials for this activity, students should be encouraged to be creative and to identify other readily available materials for use in their designs. The students will take the temperature of the ice cold water at the beginning of the activity and after each half hour until the end of the day or until the water's temperature is at room temperature. The data can be displayed in a graph that charts time versus temperature.

MATERIALS

- Container of ice water (plastic bottle, cup with lid, graduated cylinder, etc.).
- Tape (duct tape or masking tape).
- Materials for container could include cardboard, rigid insulation, plastic wrap, tinfoil.

GETTING STARTED

Heat is a form of energy that people living in cold climates are very familiar with. In this activity, you will explore heat loss. The goal is to design a container that allows a cold liquid to stay cold for the longest possible time.

THE ACTIVITY

Day One:

1. In your group, brainstorm ideas on what your design might look like and what materials you would like to use.
2. Once you have a design in mind, make a sketch of it on a piece of paper and list all the materials you will be using on the same sheet of paper.
3. Before you build your prototype, have your teacher initial it to indicate that your design has been approved for construction.
4. Choose someone from your group to measure out 100ml of the ice cold liquid once you have built your prototype.
5. Place the container of ice cold liquid in your newly created design after you take a temperature reading of the ice water.
6. Take a temperature reading every half hour for the rest of the day or until you have to go home.

Day Two:

1. Plot a graph of temperature versus time to show your data, using your group's temperature readings.
2. Once everyone in the class has had a chance to record their data, determine which designs were the most effective.

BRANCHING OUT (EXTENSIONS AND VARIATIONS)

1. Try using different materials or improving on your design by combining the best ideas generated in various students designs.
2. Create different containers to hold the ice water and repeat the experiment using your original device.
3. Organize data in a spreadsheet (use of computer application optional).

INFORMATION BITE

As a refrigeration and air conditioning mechanic apprentice, you would learn about the science related to changes of state, heat and temperature, properties of coolants, compression, heating systems, electricity, equipment controls, gas laws, and small engines. Training involves ordering, assembling, installing, calibrating and testing of industrial and commercial equipment. You would work for companies that install and service air conditioning and refrigeration systems.

Classroom Activity 4

ONLY YOUR HAIRSTYLIST KNOWS FOR SURE

Trade Link: Hairstylist

(Chemical reactions involving the bleaching and/or streaking of hair)

TEACHER BACKGROUND

Duration: two (2) 45 minute classes.
Group Size: small groups of 4 students.
Setting: indoors (classroom).

RATIONALE

Modern chemistry is founded on the science related to atomic theory. Chemical reactions have become such a common place in our daily lives that we take them for granted. Using examples that are part of a student's normal experience, such as hair colouring, can help create strong connections between theory and understanding. In this activity, students will explore the dyeing or bleaching of hair - a common trend among today's youth.

METHOD

Using clean hair (collected from hair stylist/barber shop, student volunteer or animal hair), students will experiment with the bleaching process and monitor colour change over time. When dyeing hair, you will notice a gradual change over time. Students can leave the last piece of treated hair to sit overnight and check on it the next morning. This activity works best if you start with brown hair and use a commercial bleaching or streaking kit.

MATERIALS

- Bleach kit or streak kit for hair (available commercially).
- Hair- (ask hairstylist for a small bag of clean dark brown hair or have someone in class volunteer hair).
- Beaker or glass jar.
- Scotch tape.
- Pencil or stick.
- Stopwatch or watch with timer.

GETTING STARTED

Chemical reactions have become such a commonplace occurrence in our daily lives that we take them for granted. As you study atoms and elements, you will learn more about what happens when a chemical reaction takes place. In this activity, you will bleach or streak hair and observe the chemical reactions that take place over time.

Note: Black hair requires additional treatment to successfully bleach it.

THE ACTIVITY

1. In this activity, you will use six small samples of human or animal hair about 5-10cm long.
2. Put tape around one end of each sample of hair. Put one of them on the side to use as a starting reference point. Tape remaining samples to a pencil (or other object) so that they are lined up in a row and hang down.
3. Treat each sample of hair according to the instructions included with the kit. Make note of the time.
4. At fifteen minute intervals, remove one sample of hair, rinse it with water and tape it to a piece of paper once it has dried.
5. Leave the last sample of treated hair to sit overnight and remove it the next morning.
6. You should have six samples of hair hanging on your sheet in the order in which they were removed from the chemicals. Beside each bundle of hair, write the number of elapsed minutes before it was removed.
7. What observation can you make?

BRANCHING OUT (EXTENSIONS AND VARIATIONS)

1. Repeat the experiment with different coloured hair and try to predict the various colour changes ahead of time.
2. Repeat the experiment using natural dyes such as lichens and berries.
3. Is there a relationship between hair colour, thickness and dyeing time?
4. Invite a hairstylist to come in and do a demonstration of streaking techniques.

INFORMATION BITE

During your training as an apprentice hairstylist, you will learn the science related to the dyeing and bleaching of hair. Other tasks in the hairstylist trade include hair and scalp treatment, chemical preparations, hair cutting and salon management. You will also learn about servicing wigs, eyebrow/eyelash treatment and manicuring. Most hairstylists work in salons, but many are self-employed, working part-time or in a sales-related position.

Classroom Activity 5

FEELING BOXED IN?

Trade Link: Carpenter

(An activity on geometry turning 2-D design (nets) to 3-D models)

TEACHER BACKGROUND

Duration: one (1) 45 minute class.

Group Size: individual.

Setting: indoors (classroom).

RATIONALE

This activity reinforces in the student's mind the prevalence of geometry in our everyday world. A simple design for a small cabin can be created when a 2-D design is translated into a 3-D model. The economics of packaging and design start on the 2-D plane and evolve to the 3-D product after much deliberation and study. One of the skills of carpentry is to be able to think freely between 2-D plans and 3-D products.

METHOD

In this activity, students do some backward design in terms of unravelling a pre-made package so that it looks like a 2-D polygon. The notion of not wasting any materials is important to the design and production processes. Students also do some forward thinking design by creating a 2-D polygon design that, when folded together, becomes their new 3-D "product". Students are asked to create a 2-D floor plan of a small cabin or house which, when folded together, becomes the end product.

MATERIALS

- Various cardboard containers – herbal tea boxes, toothpaste box, spaghetti noodle box, Kraft Dinner box, file folder box, cereal box, milk carton, etc.
- Ruler.
- Graph paper.

GETTING STARTED

In this activity, you will move back and forth between two-dimensional plans and three-dimensional models. Many people who work from plans or blueprints have the ability to do this with relative ease. You can too, with a little practice.

THE ACTIVITY

1. Take one of the cardboard boxes provided and try "backward design" – carefully unwrap or unfold it until it is a flat two-dimensional object sitting in front of you. Keep in mind that when this package was designed, it started out as an idea on paper like this 2-D object, long before it was ever put together.
2. Fold your package from step 1 back together and try to imagine it being unfolded in your mind as you sketch it on a piece of graph paper. Unfold it and compare it to your sketch.
3. Imagine that you are going to build a design for a small cabin or house out of cardboard. Sketch on graph paper what it would look like. Remember - the idea is to design it in such a way that it can be cut out as one piece and folded (just like a model of a polygon) into the final product. Cut out your design, fold it together and see how it looks. Be sure to put in some flaps for gluing and taping.

BRANCHING OUT (EXTENSIONS AND VARIATIONS)

1. Transfer your design to balsa wood, styrofoam or Bristol board and construct your model.
2. Try adding little extras to your original design such as a front porch, stairs, maybe even a garage.
3. Try working with a CAD (computer assisted drawing) program to develop your design.
4. Put your model house on a landscaped lot.

INFORMATION BITE

Working with drawings and blueprints is a daily activity for a carpenter. This trade involves knowledge about the many materials used in construction, hand and power tools, and the science of building construction (footings, formwork, walls, roofs, floors, room finishes, etc.). An apprentice carpenter learns to construct, erect and repair structures and fixtures made of wood. Most carpenters are employed by construction contractors, are self-employed or perform construction or maintenance work for government agencies or manufacturing firms.

Classroom Activity 6

TECHNO-QUILT

Trade Link: Printing and Graphic Arts

(A visual arts activity using iron-on transfers)

TEACHER BACKGROUND

Duration: one (1) 45 minute class

Group Size: pairs or small groups of 2-3 students

Setting: indoors – classroom with computers or computer lab

RATIONALE

Images designed to convey specific messages are all around us. Billboards, advertisements and magazines geared to students use strong visual images to get their point of view across. In this activity, students design visual images which, when printed on a large white bed sheet via iron-on transfers, become a striking quilt (banner) used to convey a message to the rest of the school.

METHOD

You will need a commercial Iron-On T-shirt Transfer Kit in order to do this activity. Each package normally contains ten iron-on transfers. Students will need to follow the instructions that come with the kit closely. Kits are very clear as to which type of platform (IBM/MAC), software program (must be able to reverse images), sheet (cotton), and printer types can be used. Examples of a theme for visual presentation selected by the class include education week, science fairs or spirit week. In order to make the end result look like a quilt, specific frames or border types could be used in each student generated transfer. This will give the impression of each sheet being closely linked to others.

MATERIALS

- Iron-on T-shirt Transfer Kit(s) i.e. HP Iron-On T-shirt Transfers, Invent It Iron-On Transfers.
- Sheet (cotton).
- Hand iron and ironing surface – formica counter, not ironing board or metal.
- Computer and graphics software (i.e. Adobe Photoshop) with the ability to flip horizontal or mirror the image, and a compatible printer.

THE ACTIVITY:

1. Your teacher will provide direction as you decide on a topic or theme to present. As a class, brainstorm possible images or symbols that might be created.
2. The iron-on transfer kit(s) you will be using comes complete with instructions as to which type of computer platform (IBM/ MAC), software program (must be able to reverse images), and type of sheet (cotton), and printer types can be used. Read the instructions carefully.
3. Once your transfer has been generated on the computer, run a test print before using the actual transfer on your printer. Make sure your image is reversed and the printer is compatible with the transfers (check instructions).
4. Hand iron the transfers onto a white sheet to make it look like a quilt. (Hint: each image should have a recognizable frame or border pattern to give it a quilt-like look when put together.)

BRANCHING OUT (EXTENSIONS AND VARIATIONS):

1. Design a visual graphic for a Halloween loot bag and transfer your iron-on to a pillowcase. Use it as a door prize at a school assembly.
2. Design T-shirts for a special event, a school assembly or for student council elections.

INFORMATION BITE

The technology used by printing and graphic arts tradespeople has changed significantly over the past ten years, moving more and more to desktop publishing systems. Printing and graphic tradespeople generally work for printing and publishing companies, and large corporations with in-plant printers. The length of apprenticeship is usually four years with related in-school training each year. To be successful in this trade, one needs good literacy and numerical skills, computer literacy, accurate colour perception, the ability to pay careful attention to detail, and the ability to work under the pressure of deadlines.

Helpful Resources

Following are references to web sites for future job forecasts and additional skilled trades career information.

A) WEB SITES

LINK	SPONSOR	CONTENT
ABOUT SKILLED TRADES		
www.careersintrades.ca	Canadian Apprenticeship Forum- Forum canadien sur l'apprentissage (CAF-FCA) and Skills/Compétences Canada®	Campaign Website: "Skilled Trades: A Career You Can Build On"
www.skillscanada.com www.hrsdc.gc.ca	Skills/Compétences Canada Human Resources and Social Development (HRSD)	Information about skilled trades and Skills Competitions About Human Resources and Social Development and programs and services they provide for more information about developing skills for the workforce
www.red-seal.ca	Red Seal Program	Red Seal Program and the requirements for tradespeople to work across Canada
www23.hrdc-drlhc.gc.ca	National Occupation Classification	Job descriptions, pre-requisites, job duties and similar occupations can be explored for all skilled trades
www.councils.org www.jobfutures.ca	The Alliance of Sector Councils Job Futures	A link to all Sector Council information Average salaries, outlook and average unemployment
ABOUT APPRENTICESHIPS		
www.apprenticetrades.ca www.caf-fca.org	CAF-FCA CAF-FCA	About apprenticeship across each province and territory Information about Canadian Apprenticeship Forum
JOB OPPORTUNITIES		
www.jobbank.gc.ca	Service Canada	Job Bank is the largest Web-based network of job postings available to Canadians
www.labourmarketinformation.ca	Service Canada	Information about jobs, skills and the availability of workers in local areas across Canada
www.monster.ca www.workopolis.com	Monster Network Workopolis	"Canada's #1 career website" "Canada's biggest job site"
SELF ASSESSMENT & CLASSROOM TOOLS		
www.aacc.ca	Association of Canadian Community Colleges	A national organization representing Canadian colleges that provides a database of skilled trades training programs available in Canada.
www.jobsetc.ca (click on "career exploration" followed by "identify your career option" link)	HRSD (All ages)	Career quizzes include: abilities quiz / data, people, things quiz / work preference quiz / work values quiz / essential skills equalizer Learning style quizzes include: multiple intelligence quiz / seeing, hearing, doing Provides exercises to identify/measure an individual's values / interests / skills The assessment leads to developing goals / next steps / action plan
www.mazemaster.on.ca	HRSD (Youth oriented)	Rodger Harp's three-step career quiz targeted to students take the quiz / identify options / research careers and schools
www.schoolfinder.com	EDge Interactive	

B. PROVINCIAL/TERRITORIAL APPRENTICESHIP AUTHORITIES - CONTACT INFORMATION

One of your key sources of information about apprenticeship is the provincial/territorial government departments or ministries responsible for education, training, or labour. Below you will find the direct contact information for each provincial/territorial apprenticeship authority.

APPRENTICESHIP AUTHORITIES AND CONTACT INFORMATION**Alberta**

Apprenticeship and Industry Training
7th Floor, South Tower
Capital Health Centre
10030- 107 Street
Edmonton AB T5J 4K7

Telephone: (780) 427-8517

Fax (780) 422-3734

Website: www.tradesecrets.org

British Columbia

Industry Training Authority
Suite 223- 4600 Kingsway
Burnaby BC V5H 4L9

Toll Free: 1-866-660-6011

Telephone: (604) 775-2860

Fax (604) 775-3033

Website: www.itabc.ca

Manitoba

Manitoba Advanced Education and
Training - Apprenticeship
1010- 401 York Avenue
Winnipeg MB R3C 0P8

Toll Free: 1-877-978-7233

Telephone: (204) 945-3337

Fax (204) 948-2539

Website: www.gov.mb.ca/tradecareers

New Brunswick

Department of Training and
Employment Development
Apprenticeship and Certification
P.O. Box 6000
Chestnut Complex
Fredericton NB E3B 5H1

Telephone: (506) 453-2260

Fax (506) 453-5317

Website: www.vacc-acp.gnb.ca

Newfoundland and Labrador

The Institutional and Industrial
Training Division
Department of Education
P.O. Box 8700
St. John's NL A1B 4J6

Telephone: (709) 729-2729

Fax (709) 729-5878

Website: www.gov.nl.ca/app

Nova Scotia

Department of Education Apprenticeship
Training and Skills Development Division
PO Box 578
2021 Brunswick St.
Halifax NS B3J 2S9

Toll Free: 1-800-494-5651

Telephone: (902) 424-5651

Website: www.apprenticeship.ednet.ns.ca

Northwest Territories

Government of NWT
 Education, Culture and Employment
 Apprenticeship and Occupational
 Certification
 PO Box 1320
 Yellowknife NT X1A 2L9

 Telephone: (867) 873-7357
 Fax: (867) 873-0200
 Website: [www.wcee.gov.nt.ca/divisions/
 apprenticeship](http://www.wcee.gov.nt.ca/divisions/apprenticeship)

Nunavut

Department of Education
 Apprenticeship & Occupational
 Certification
 P.O. Box 390
 Arviat NU X0C 0E0

 Telephone: (867) 975-5600
 Fax: (867) 975-5605
 Website: www.gov.nu.ca/education

Ontario

Ministry of Training, Colleges and
 Universities
 17th Floor - Mowat Block
 900 Bay Street
 Toronto ON M7A 1L2

 Toll-free: 1-800-387-5514
 Telephone: (416) 325-2929
 Fax: (416) 325-6348
 Website: [www.edu.gov.on.ca/eng/tcu/
 apprentices](http://www.edu.gov.on.ca/eng/tcu/apprentices)

Prince Edward Island

Department of Education
 Apprenticeship Training
 3rd Floor Sullivan Building
 16 Fitzroy Street
 Charlottetown PE C1A 7N8

 Telephone: (902) 368-4460
 Fax: (902) 368-6144
 Website: www.apprenticeship.pe.ca

Quebec

Direction du Développement des
 compétences en milieu de travail
 Commission des partenaires du marché
 du travail
 800, rue du Square-Victoria,
 Bureau 2800
 Montréal QC H4Z 1B7

 Pour tout renseignement: 1-888-367-5647
 Telephone: (514) 725-5221
 Fax: (514) 725-4311
 Website: empliquebec.net

Saskatchewan

Apprenticeship and Trade Certification
 Commission
 2140 Hamilton Street
 Regina SK S4P 2E3

 Toll Free: 1-877-363-0536
 Telephone: (306) 787-2444
 Fax: (306) 787-5105
 Website: www.saskapprenticeship.ca

Yukon

Department of Education
 Advanced Education Branch
 Box 2703
 Whitehorse YT Y1A 2C6

 Toll free: 1-800-661-0408
 local 5298
 Telephone: (867) 667-5298
 Fax: (867) 667-8555
 Website: [www.education.gov.yk.ca/
 advanceded/apprenticeship](http://www.education.gov.yk.ca/advanceded/apprenticeship)

C) SKILLS/COMPÉTENCES CANADA

There are regional offices in each province and territory to help promote skilled trade and technology careers. Contact them for additional information on how they can help you explore skilled trades careers.



"Skills/Compétences Canada® is a national, not for profit organization that actively promotes careers in skilled trades and technologies to Canadian youth"

Skills/Compétences Canada
(National Office)
205-260 Saint Raymond Boulevard
Gatineau QC J9A 3G7

Toll Free: 1-877-754-5226
Tel.: (819) 771-7545
Fax (819) 771-5575
Website: www.skillscanada.ca

Skills Canada British Columbia
5- 3777 Kingsway
Burnaby BC V5H 3Z7

Tel.: 604.432.4229
Fax 604.433.1241
Website: www.skillscanada.bc.ca

Skills Alberta
11th Floor, 10035 - 102 Ave.
Edmonton AB T5J 0E5

Tel.: (780) 493-2630 (general reception)
Fax (780) 423-4758
Website: www.skillsalberta.com

Skills Canada Saskatchewan
602 Lenore Drive
Saskatoon SK S7K 6A6

Tel.: (306) 683-0404
Fax (306) 657-3949
Website: www.skillscanadasask.com

Skills Canada Manitoba
31-1313 Border Street
Winnipeg MB R3H 0X4

Tel.: (204) 927-0250
Fax (204) 927-0258
Website: www.skillscanada.mb.ca

Skills Canada Ontario
102-630 Riverbend Drive
Kitchener ON N2K 3S2

Tel.: (519) 749-9899
Fax (519) 749-6322
Website: www.skillsontario.com

Compétences Québec
190 Dorchester Road, Suite 30
Québec QC G1K 9M6

Tel.: (418) 646-3534
Fax (418) 643-6336
Website: www.compétencesquebec.com

Skills Canada New Brunswick
527 Beaverbrook Court, Suite 426
Fredericton NB E3B 1X6

Tel.: (506) 457-2762
Fax (506) 453-5317
Website: www.skillscanada.nb.ca

Skills Canada Nova Scotia
2021 Brunswick Street
P.O. Box 578
Halifax NS B3J 2S9

Tel.: (902) 424-6457
Fax (902) 424-0717
Website: skillsns.ednet.ns.ca

Skills Canada P.E.I.
Holland College
Royalty Centre
40 Enman Crescent
Charlottetown PE C1E 1E6

Tel.: (902) 566-9352
Fax (902) 566-9323
Website: www.skillscanada.pe.ca

Skills Canada Newfoundland and Labrador
P.O. Box 8561
St. John's NL A1B 3P2

Tel.: (709) 739-4172
Fax (709) 739-4198
Website: www.skillscanada-nfld.com

Skills Canada Yukon
103 Platinum Road
Whitehorse YT Y1A 5M8

Tel.: (867) 668-2709
Fax (867) 668-2704
Website: www.skillsyukon.com

Skills Canada Northwest Territories
5013, 44th Street
P.O. 1403
Yellowknife NT X1A 2P1

Tel.: (867) 873-8743
Fax (867) 873-8197
Website: www.skillscanadanwt.org

Skills Nunavut
First Floor, Brown Building
Box 1000, Station 940
Iqaluit NU X0A 0H0

Tel.: (867) 975-6574
Fax (867) 975-6572
Website: www.skillscanadanunavut.ca

D) SECTOR COUNCILS

What is a sector council?

A sector council is an organization that promotes an industry or “sector” of the Canadian economy. For example, there is a sector council that promotes the construction industry, a sector council that promotes the automotive repair and service industry, a sector council that promotes the tourism industry, and many others. A sector council may also promote skilled trades and occupations within their industry. Therefore, they can be another good source of information about careers in the skilled trades.



The Alliance of Sector Councils (TASC)

151 Slater Street, Suite 608
Ottawa, Ontario, K1P 5H3
Phone: (613) 565-3637
Fax: (613) 231-6853
Website: www.councils.org

What does a sector council do?

Among many other benefits, a sector council may be able to

- help you to discover careers in their industry
- provide you with links to job boards or postings.
- guide you through the process of learning a skilled trade or occupation, or upgrading your current skills.



Biotechnology Human Resource Council (BHRC)

1701 - 130 Albert Street
Ottawa, Ontario, K1P 5G4
Phone: (613) 235-1402
Fax: (613) 233-7541
Website: www.bhrc.ca



Apparel Human Resources Council (AHR)

9310 boulevard St-Laurent, blvd, Suite 1114
Montréal, Québec, H2N 1N4
Phone: (514) 388-7779
Fax: (514) 388-6926
Website: www.apparel-hrc.org



Canadian Automotive Repair and Service Council (CARS)

500 - 29 Camelot Drive
Nepean, Ontario, K2G 5W6
Phone: (613) 798-0500
Fax: (613) 798-9963
Website: www.cars-council.ca



Canadian Aviation Maintenance Council (CAMC)

955 Green Valley Crescent, Suite 155

Ottawa, Ontario, K2C 3V4

Phone: (613) 727-8272

Fax (613) 727-7018

Website: www.camc.ca



Canadian Food Industry Council (CFIC)

191 The West Mall, Suite 1160

Toronto, Ontario, M9C 5K8

Phone: (416) 675-3115

Fax (416) 675-3135

Website: www.cfic-ccia.ca



**Canadian Council of Human Resource Associations
(CCHRA-CCARH)**

2 Bloor Street West, Suite 1903

Toronto, Ontario, M4W 3E4

Phone: 1 (866) 560-1288 or (416) 323-0031

Fax (416) 323-9530

Website: www.cchra-ccarh.ca



Canadian Plastics Sector Council (CPSC)

190 Connaught Road, Unit 201

Ottawa, Ontario, K2E 7J5

Phone: (613) 231-4470

Fax (613) 231-3775

Website: www.cpsc-ccsp.ca



Canadian Council of Professional Fish Harvesters (CCPFH)

1 Nicholas Street, Suite 712

Ottawa, ON K1N 7B7

Phone: (613) 235-3474

Fax (613) 231-4313

Website: www.ccpfh-cppf.org



Canadian Professional Logistics Institute (CPLI)

160 John Street, Suite 200

Toronto, Ontario, M5V 2E5

Phone: (416) 363-3005

Fax (416) 363-5598

Website: www.loginstitute.ca



Canadian Steel Trade and Employment Congress (CSTEC)
 234 Eglinton Avenue East, Suite 501
 Toronto, ON M4P 1K7
 Phone: (416) 480-1797
 Fax: (416) 480-2986
 Website: www.cstec.ca



Child Care Human Resources Sector Council (CCH-RSC)
 151 Slater Street, Suite 714
 Ottawa, ON K1P 5H3
 Phone: (613) 239-3100 or (866) 411-6960
 Website: www.cchsc-cssge.ca



Canadian Tourism Human Resource Council (CTHRC)
 151 Slater Street, Suite 608
 Ottawa, Ontario, K1P 5H3
 Phone: (613) 231-6949
 Fax: (613) 231-6853
 Website: www.cthrc.ca



Construction Sector Council (CSC)
 220 Laurier Ave West, Suite 1150
 Ottawa, Ontario, K1P 5Z9
 Phone: (613) 569-5552 ext. 222
 Fax: (613) 569-1220
 Website: www.csc-ca.org



Canadian Trucking Human Resources Council (CTHRC)
 720 Belfast Road, Suite 203
 Ottawa, Ontario, K1G 0Z5
 Phone: (613) 244-4800
 Fax: (613) 244-4535
 Website: www.cthrc.com



Contact Centre Canada (CCCC)
 275 Bank Street, Suite 400
 Ottawa, Ontario, K2P 2L6
 Phone: (613) 232-2063
 Fax: (613) 232-9164
 Website: www.contactcentrecanada.ca



Council for Automotive Human Resources (CAHR)

10 Four Season Place, Suite 801
Toronto, Ontario, M9B 6H7
Phone: (416) 621-2614 or 1(800) 242-2078
Fax (416) 621-5926
Website: www.cahr-crha.ca



Energy Council of Canada

350 Sparks Street, Suite 608
Ottawa ON K1R 7S8
Phone: (613) 232-8239
Fax (613) 232-1079
Website: www.energy.ca



Cultural Human Resources Council (CHRC)

17 York Street, Suite 201
Ottawa, Ontario, K1N 9J6
Phone: (613) 562-1535
Fax (613) 562-2982
Website: www.culturalhrc.ca



Environmental Careers Organization of Canada (ECO)

700 - 4th Avenue SW Suite 1450
Calgary, Alberta, T2P 3J4
Phone: (403) 233-0748
Fax (403) 269-9544
Website: www.eco.ca



Forum for International Trade Training (FITT)

30 Metcalfe Street, 4th Floor
Ottawa, Ontario, K1P 5L4
Phone: (613) 230-3553
Fax (613) 230-6808
Website: www.fitt.ca

Electricity Sector Council

3025 Albion Road N, P.O. Box 8700
Ottawa, Ontario K1G 3S4
Phone: 613 738 5499 Ext. 7442
Fax 613 738 6409
Website: www.brightfutures.ca



Installation, Maintenance and Repair Sector Council (IMR)
 160 John Street, Suite 201
 Toronto, Ontario, M5V 2E5
 Phone: (416) 241-3550
 Fax: (416) 363-5598
 Website: www.imrsectorcouncil.ca



National Seafood Sector Council (NSSC)
 130 Albert Street Suite 910
 Ottawa, Ontario, K1P 5G4
 Phone: (613) 782-2391
 Fax: (613) 782-2386
 Website: www.nssc.ca



Mining Industry Human Resources Council (MIHR)
 260 Hearst Way, Suite 102
 Kanata, Ontario, K2L 3H1
 Telephone: (613) 270-9696
 Fax: (613) 270-9399
 Website: www.mihr.ca



Petroleum Human Resources Council of Canada (PHRCC)
 800 - 6th Avenue S.W., Suite 410
 Calgary, Alberta, T2P 3G3
 Phone: (403) 537-1230
 Fax: (403) 537-1232
 Website: www.petrchrsc.ca



Motor Carrier Passenger Council of Canada (MCPCC)
 8300 Yonge Street
 Thornhill, Ontario, L4J 7R3
 Phone: (905) 762-0414
 Fax: (905) 762-0415
 Website: www.busouncil.ca



Police Sector Council (PSC)
 303-1545 Carling Ave.
 Ottawa, Ontario, K1Z 8P9
 Phone: (613) 729-2789
 Fax: (613) 729-9691
 Website: www.pdicerouncil.ca



Software Human Resource Council (SHRC)

30 Metcalfe Street, 4th Floor

Ottawa, Ontario, K1P 5L4

Phone: (613) 237-8551

Fax (613) 230-3490

Website: www.shrc.ca



Wood Manufacturing Council (WMC)

130 Albert Street, Suite 514

Ottawa, Ontario, K1P 5G4

Phone: (613) 567-5511

Fax (613) 567-5411

Website: www.wmc-cfb.ca



Textiles Human Resources Council (THRC)

222 Somerset St. West, Suite 500

Ottawa, Ontario, K2P 2G3

Phone: (613) 230-7217

Fax (613) 230-1270

Website: www.thrc-ohit.org

