

# Carpenter

# On-the-Job Training Guide

2019



Online: [www.saskapprenticeship.ca](http://www.saskapprenticeship.ca)

*Recognition:*

*To promote transparency and consistency, portions of this document has been adapted from the 2013 Carpenter National Occupational Analysis (Employment and Social Development Canada).*

*A complete version of the Occupational Standard can be found at [www.red-seal.ca](http://www.red-seal.ca)*

# STRUCTURE OF THE ON-THE-JOB TRAINING GUIDE

To facilitate understanding of the occupation, this on-the-job training guide contains the following sections:

**Description of the Carpenter trade:** an overview of the trade's duties and training requirements.

**Essential Skills Summary:** an overview of how each of the nine essential skills is applied in this trade.

**Harmonization:** a brief description on the pan-Canadian Harmonization Initiative for the Carpenter trade.

**Task Matrix:** a chart which outlines graphically the major work activities, tasks and sub-tasks of this standard detailing the essential skills and the level of training where the content is covered.

**Block:** the largest division within the standard that is comprised of a distinct set of trade activities.

**Task:** distinct actions that describe the activities within a major work activity.

**Sub-task:** distinct actions that describe the activities within a task.

**On-the-Job and In-school Training Content for the Carpenter Trade:** a chart which outlines on-the-job examples for apprentices to achieve relevant work experience to prepare for topics of technical training.

# DESCRIPTION OF THE CARPENTER TRADE

*Carpenters construct, renovate and repair buildings and structures made of wood and other materials.*

They can work for a wide array of employers, including new home builders and renovation firms, construction firms, building owners, property managers and tenants, building developers and government departments. Some carpenters are union members and a significant number are self-employed.

While the scope of the carpenter trade includes many aspects of building construction, a growing number of carpenters work for contractors who specialize in such areas of trade practice as concrete forming, framing, finishing, interior systems and renovation. Carpenters are employed in a variety of job environments, including houses under construction or renovation, ICI and infrastructure projects, and plants that pre-fabricate buildings. They must be prepared to work in a variety of working environments.

Safety is of prime importance to all carpenters. In addition to typical risks of injury resulting from slips and falls, falling objects and the use of hand and power tools, carpenters must be aware of constantly changing work surroundings to mitigate the chance of injury to self and others. The proper use of personal protective equipment (PPE) and related training is very important to carpenters regardless of their location of work. Risk/hazard assessments prior to performing tasks are necessary and important.

Some important competencies of a carpenter are good knowledge of mathematics, the ability to use metric and imperial measurements, an understanding of building science, communication and problem solving skills, and the ability to work independently or as part of a team. Other skills present in a competent carpenter are the ability to work at heights, the ability to stand or kneel for long periods of time, manual dexterity and good balance. Carpentry is a physically demanding occupation requiring the lifting of heavy tools and materials. Journeyman carpenters are expected to mentor apprentices given the hands-on nature of the trade.

**Training Requirements:** To graduate from each level of the apprenticeship program, an apprentice must successfully complete the required technical training and compile enough on-the-job experience to total at least 1800 hours each year. Total trade time required is 7200 hours and at least 4 years in the trade.

Journeyman to apprentice ratio for this trade is: 1:2

The information contained in this document serves as a guide for employers and apprentices. Apprenticeship training is mutually beneficial to both employer and apprentice. The employer's investment in training apprentices results in skilled and certified workers. The document summarizes the tasks to be covered by the apprentice during their on-the-job portion of apprenticeship training. An apprentice spends approximately 85% of their apprenticeship term training on-the-job.

**It is the employer's or journeyman's responsibility to supervise an apprentice's practical skills development until a satisfactory level of proficiency has been reached.**

## EMPLOYER TRAINING RESPONSIBILITY

- promote a safety-conscious workplace
- provide mentored, hands-on practice in the use of tools and equipment
- demonstrate procedures relevant to layout, forming, framing, exterior and interior finishing
- further the apprentice's ability to interpret technical drawings
- allow the apprentice to apply procedures used for estimating materials, costing projects and supervising personnel
- ensure that the apprentice can evaluate the end product
- where possible, expose the apprentice to new technology in the Carpenter trade

Employers should make every effort to expose their apprentices to work experience in as many areas of the trade as possible.

In the On-the-Job Training Guide, in-school instruction is listed first; on-the-job suggestions to help employers assist the apprentice to prepare for in-school training are listed next.

The content of the training components is subject to change without notice.

### Entrance Requirements for Apprenticeship Training

Your grade twelve transcript (with no modified classes) or GED 12 is your guarantee that you meet the educational entrance requirements for apprenticeship in Saskatchewan. In fact, employers prefer and recommend apprentices who have completed high school. This ensures the individual has all of the necessary skills required to successfully complete the apprenticeship program, and receive journey-person certification.

Individuals with “modified” or “general” classes in math or science do not meet our entry requirements. These individuals are required to take an entrance assessment prescribed by the SATCC.

English is the language of instruction in all apprenticeship programs and is the common language for business in Saskatchewan. Before admission, all apprentices and/or “upgraders” must be able to understand and communicate in the English language. Applicants whose first language is not English must have a minimum Canadian Language Benchmark Assessment of six (CLB6).

Note: A CLB assessment is valid for a one-year period from date of issue.

Designated Trade Name	Math Credit at the Indicated Grade Level <sup>❶</sup>	Science Credit at Grade Level
Carpenter	Grade 10	Grade 10
<p><sup>❶</sup> - (One of the following) WA – Workplace and Apprenticeship; or F – Foundations; or P – Pre-calculus, or a Math at the indicated grade level (Modified and General Math credits are not acceptable.).</p> <p>*Applicants who have graduated in advance of 2015-2016, or who do not have access to the revised Science curricula will require a Science at the minimum grade level indicated by trade.</p> <p>For information about high school curriculum, including Math and Science course names, please see:  <a href="http://www.curriculum.gov.sk.ca/#">http://www.curriculum.gov.sk.ca/#</a></p> <p><b>Individuals not meeting the entrance requirements will be subject to an assessment and any required training</b></p>		

# ESSENTIAL SKILLS SUMMARY

Essential skills are needed for work, learning and life. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change.

Through extensive research, the Government of Canada and other national and international agencies have identified and validated nine essential skills. These skills are used in nearly every occupation and throughout daily life in different ways.

A series of CCDA-endorsed tools have been developed to support apprentices in their training and to be better prepared for a career in the trades. The tools can be used independently or with the assistance of a tradesperson, trainer, employer, teacher or mentor to:

- understand how essential skills are used in the trades;
- learn about individual essential skills strengths and areas for improvement; and
- improve essential skills and increase success in an apprenticeship program.

The tools are available online or for order at: [www.esdc.gc.ca/eng/jobs/les/profiles/index.shtml](http://www.esdc.gc.ca/eng/jobs/les/profiles/index.shtml)

The application of these skills may be described throughout this document within the skills and knowledge which support each sub-task of the trade. The most important essential skills for each sub-task have also been identified. The following are summaries of the requirements in each of the essential skills, taken from the essential skills profile. A link to the complete essential skills profile can be found at [www.red-seal.ca](http://www.red-seal.ca).

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## READING

Carpenters need to read work orders, invoices and brief notes from co-workers. They also read and interpret technical documents, drawings, specifications, building codes, regulations, bylaws and standards. Carpenters read notices, bulletins and newsletters to stay up-to-date on workplace issues as well as trade journals and website articles to keep current on industry trends.

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## DOCUMENT USE

Carpenters scan documents, products and signs for symbols and icons to identify workplace hazards. They complete checklists and forms by checking boxes and entering data, such as dates, times and quantities. They locate data in a variety of tables. Carpenters complete a variety of documents such as log books, work orders and building permit applications.

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## WRITING

Carpenters write reminders and notes to themselves, customers and co-workers. They write comments in field books, on forms and on schedules about obstacles such as overhead power lines for example. They may also write accident or incident reports depending on the jurisdiction.

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## ORAL COMMUNICATION

Carpenters speak with suppliers to learn about products, prices and delivery schedules. They talk with co-workers and other tradespeople about timelines, procedures, expectations and other work-related matters. They speak with safety and building inspectors, manufacturer representatives and customers,

and they participate in worksite meetings. Carpenters may also provide detailed instructions to co-workers and apprentices.

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## **NUMERACY**

Carpenters must have a thorough understanding of basic arithmetic, geometry and trigonometry. They often work with both the metric and the imperial systems of measurement. They perform calculations and apply formulas to determine offsets, elevations and grades. Furthermore, they use formulas to determine area, volume and quantities, and they calculate runs and rises to build stairs and rafters. Carpenters estimate material and time requirements to complete a project.

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## **THINKING**

Carpenters decide on the order of tasks based on priorities and delays. They consult with coworkers and other tradespeople when they encounter problems to exchange ideas and select the best approach. They choose tools, methods and products for projects based on project specifications, building code requirements and the availability of products, time and labour. Carpenters evaluate the safety of a work site and potential hazards.

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## **WORKING WITH OTHERS**

Carpenters work in pairs some of the time as this promotes efficiency and productivity. They also work with apprentices some of the time to direct, mentor and monitor their work. Carpenters may also work alone when the task may be performed unassisted. Carpenters are often leaders of the construction team, working together on a daily basis with other trades, forepersons, suppliers and engineers to complete the job through combined effort and organized co-operation.

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## **DIGITAL TECHNOLOGY**

Carpenters use digital survey equipment, calculators and portable electronic devices to complete numeracy-related tasks such as calculating material requirements. They may use a variety of software such as word processing, spreadsheets, databases, accounting, communication and estimating software. They access information online from suppliers, manufacturers, unions and associations. They may also use the Internet to access training courses and seminars.

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## **CONTINUOUS LEARNING**

There is a requirement for ongoing learning to maintain current knowledge of changing codes, regulations, standards and materials for new construction and renovations. It is also very important to apply new skills and methods emerging due to technological and environmental advancements.

# HARMONIZATION

At the request of industry, the Harmonization Initiative was launched in 2013 to *substantively align* apprenticeship systems across Canada by making training requirements more consistent in the Red Seal trades. Harmonization aims to improve the mobility of apprentices, support an increase in their completion rates and enable employers to access a larger pool of apprentices.

As part of this work, the Canadian Council of the Directors of Apprenticeship (CCDA) identified four main harmonization priorities in consultation with industry and training stakeholders:

## **1. Trade name**

The official Red Seal name for this trade is Carpenter.

## **2. Number of Levels of Apprenticeship**

The number of levels of technical training recommended for the Carpenter trade is four.

## **3. Total Training Hours during Apprenticeship Training**

The total hours of training, including both on-the-job and in-school training for the Carpenter trade is 7200.

## **4. Consistent sequencing of training content (at each level) using the most recent Occupational Standard**

Implementation for harmonization will take place progressively. Level one to be implemented in 2016/2017, level two 2017/2018, level three 2018/2019, and level four in 2019/2020.

# CARPENTER TASK MATRIX CHART

This chart outlines the major work activities, tasks and sub-tasks from the 2013 Carpenter National Occupational Analysis. Each sub-task details the corresponding essential skill and level of training where the content is covered\*.

\* Sub-tasks with numbers in the boxes is where the content will be delivered in training. The Task Matrix Chart will be updated every year until Harmonization implementation is complete. Implementation for harmonization will take place progressively. Level one to be implemented in 2016/2017, level two 2017/2018, level three 2018/2019, and level four in 2019/2020.

## A - COMMON OCCUPATIONAL SKILLS

<b>A-1 Uses and maintains tools and equipment</b>	<b>1.01 Maintains hand, power and pneumatic tools</b>  1	<b>1.02 Maintains stationary tools</b>  1	<b>1.03 Uses powder-actuated tools.</b>  1	<b>1.04 Uses lifting, rigging and hoisting equipment</b>  1	<b>1.05 Uses layout equipment</b>  1, 2
<b>A-2 Performs safety related activities</b>	<b>2.01 Uses personal protective equipment (PPE) and safety equipment</b>  1	<b>2.02 Maintains safe work environment</b>  1			
<b>A-3 Uses building materials</b>	<b>3.01 Installs fasteners, adhesives and connectors</b>  1, In Context in 2,3,4	<b>3.02 Installs membranes and sealants</b>  1, In Context in 2,3,4	<b>3.03 Installs foundation protection</b>  1, In Context in 2,3,4	<b>3.04 Installs insulating materials</b>  1, In Context in 2,3,4	
<b>A-4 Builds and uses temporary access structures</b>	<b>4.01 Uses stationary access equipment</b>  1	<b>4.02 Uses mobile access equipment</b>  1	<b>4.03 Erects/dismantles scaffolding</b>  1	<b>4.04 Modifies specialized scaffolding</b>  1	

## B – PLANNING AND LAYOUT

<b>B-5 Interprets documentation</b>	<b>5.01 Interprets project drawings</b>	<b>5.02 Interprets specifications</b>	<b>5.03 Interprets safety documentation</b>	<b>5.04 Interprets workplace documentation</b>	
	1, In Context in 2,3,4	1, In Context in 2,3,4	1	1	
<b>B-6 Organizes work</b>	<b>6.01 Schedules work sequence</b>	<b>6.02 Performs site preparation</b>	<b>6.03 Performs quantity take off</b>	<b>6.04 Organizes materials</b>	
	1	1	1	1	
<b>B-7 Performs layout</b>	<b>7.01 Performs site layout</b>	<b>7.02 Lays out concrete formwork</b>	<b>7.03 Lays out floor systems</b>	<b>7.04 Lays out deck systems</b>	<b>7.05 Lays out wall systems</b>
	1	1,3	1	1	2
	<b>7.06 Lays out ceiling systems</b>	<b>7.07 Lays out roof systems</b>	<b>7.08 Lays out stairs</b>		
	2,3	2,3,4	2,3,4		

## C – CONCRETE

<b>C-8 Constructs formwork</b>	<b>8.01 Erects excavation shoring and underpinning</b>	<b>8.02 Erects concrete falsework</b>	<b>8.03 Constructs footing forms</b>	<b>8.04 Constructs wall and grade beam formwork</b>	<b>8.05 Constructs slab on-grade formwork</b>
	3	3	1	1	1
	<b>8.06 Constructs column formwork</b>	<b>8.07 Constructs stair formwork</b>	<b>8.08 Installs embedded steel</b>	<b>8.09 Dismantles formwork</b>	
	3	3	3	1	
<b>C-9 Installs concrete, cement-based and epoxy products</b>	<b>9.01 Places concrete</b>	<b>9.02 Facilitates curing of concrete</b>	<b>9.03 Performs basic concrete finishing</b>	<b>9.04 Installs pre-case components</b>	<b>9.05 Installs grout</b>
	1	1	1	3	3

## D – FRAMING

<b>D-10 Constructs floor systems</b>	<b>10.01 Installs engineered floor systems</b>  1	<b>10.02 Constructs dimensional lumber floor framing</b>  1
<b>D-11 Constructs deck systems</b>	<b>11.01 Constructs decks</b>  1	<b>11.02 Installs deck components</b>  1
<b>D-12 Constructs wall systems</b>	<b>12.01 Installs engineered wall systems</b>  2	<b>12.02 Constructs dimensional lumber wall framing</b>  2
<b>D-13 Constructs roof and ceiling systems</b>	<b>13.01 Installs engineered trusses</b>  2,3,4	<b>13.02 Constructs roof and ceiling framing</b>  2,3,4

## E – EXTERIOR FINISH

<b>E-14 Installs exterior doors and windows</b>	<b>14.01 Installs exterior jambs/frames</b>  2	<b>14.02 Installs exterior doors</b>  2	<b>14.03 Installs specialty exterior doors</b>  2	<b>14.04 Installs exterior windows</b>  2	<b>14.05 Installs exterior door and window hardware</b>  2
<b>E-15 Installs roofing</b>	<b>15.01 Installs roofing components</b>  2	<b>15.02 Installs roof coverings</b>  2			
<b>E-16 Installs exterior finishes</b>	<b>16.01 Installs exterior wall components</b>  2	<b>16.02 Installs exterior wall coverings</b>  2			

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## F – INTERIOR FINISH

<b>F-17 Applies wall and ceiling finishes</b>	<b>17.01 Installs wallboard</b>  3	<b>17.02 Applies wall compound</b>  3	<b>17.03 Installs panels, tiles and solid wood finishes</b>  3,4	<b>17.04 Installs suspended ceiling</b>  3	<b>17.05 Installs demountable wall systems</b>  3
<b>F-18 Installs flooring</b>	<b>18.01 Installs underlayment</b>  4	<b>18.02 Installs floor coverings</b>  4	<b>18.03 Installs access flooring</b>  4		

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## G – RENOVATIONS

<b>G-21 Performs renovation-specific support activities</b>	<b>21.01 Removes existing material</b>  4	<b>21.02 Protects structure during renovations</b>  4
<b>G-22 Performs renovation-specific construction activities</b>	<b>22.01 Joins new to existing construction</b>  4	<b>22.02 Changes existing structure during renovations</b>  4

# ON-THE-JOB AND IN-SCHOOL TRAINING CONTENT FOR THE CARPENTER TRADE

This chart outlines on-the-job examples for apprentices to achieve relevant work experience to prepare for the topics of technical training. Topics of technical training are provided with the associated learning outcomes.

<b>Level One</b>	<b>7 weeks</b>	<b>210 hours</b>
<b>Safety Awareness</b> <ul style="list-style-type: none"> <li>• Occupational Health &amp; Safety (OH&amp;S) legislation</li> <li>• personal protective clothing and equipment</li> <li>• fall protection equipment</li> <li>• unsafe working environments</li> <li>• fire safety procedures and control</li> <li>• types of industrial health hazards</li> </ul>		<b>12 hours</b>
<b>Mentors can assist the apprentice to prepare for this section of technical training by:</b> <ul style="list-style-type: none"> <li>• <i>ensuring familiarization with the scope and content of the OH&amp;S Regulations</i></li> <li>• <i>making the use of personal protective equipment mandatory</i></li> <li>• <i>demonstrating the proper use and maintenance of fall protection equipment</i></li> <li>• <i>describing unsafe working conditions and industrial health hazards and monitoring for action appropriate to situations</i></li> <li>• <i>ensuring the use of site fire equipment is described and demonstrated</i></li> <li>• <i>describing the seriousness of confined space entry and methods to safely enter these areas</i></li> <li>• <i>identifying hazardous materials in the workplace and instruct in the use of the Material Safety Data Sheets(MSDS)</i></li> <li>• <i>ensuring the proper understanding of the Workplace Hazardous Material Information System (WHMIS) system and symbols</i></li> </ul>		
<b>Tools</b> <ul style="list-style-type: none"> <li>• hand tools</li> <li>• portable power tools</li> <li>• stationary power tools and equipment</li> <li>• powder actuated tools</li> </ul>		<b>36 hours</b>
<b>Mentors can assist the apprentice to prepare for this section of technical training by:</b> <ul style="list-style-type: none"> <li>• <i>demonstrating the use and care of common hand, portable and stationary tools and equipment</i></li> <li>• <i>monitoring the use and care of these tools to ensure competency in their use</i></li> <li>• <i>having the apprentice complete repetitive projects using these tools and equipment</i></li> <li>• <i>having the apprentice maintain and sharpen tools</i></li> </ul>		
<b>Scaffolds and Rigging</b> <ul style="list-style-type: none"> <li>• safe use of ladders and ramps</li> <li>• erection, maintenance and dismantling of wood and metal access scaffolds</li> <li>• basic rigging operations</li> </ul>		<b>12 hours</b>

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *explaining the relationship between access equipment and OH&S Regulations and ensuring the apprentice is familiar with the regulations for this equipment*
- *monitoring the use of ladders and ramps and ensuring their proper installation*
- *exposing the apprentice to installation, maintenance and dismantling procedures of numerous types of scaffolds and other access equipment*
- *demonstrating the application and uses of various types of rigging equipment and accessories*
- *demonstrating various knots and hitches and describing their correct applications*
- *demonstrating correct crane signalling and allowing the apprentice to direct operations under supervision*

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**Construction Documents**

**12 hours**

- basic residential construction drawings
- building codes and permit

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *explaining the various pages of construction documents, their functions and having the apprentice interpret various aspects of the job using these documents*
- *assisting to interpret construction document lines, symbols, and abbreviations*
- *explaining the content and use of the Canadian Building Code and explaining the requirements and reasons for building permits*
- *providing instruction and opportunity for the sketching of miscellaneous simple building components*
- *requiring the repetitive use of the math required to interpret construction documents and calculate quantities using fractions, decimals, percentages, ratios, perimeters, volumes and areas by hand and using calculators*

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**Site Layout**

**30 hours**

- elevations with a builder's level
- building layout with hand tools
- elevations with a laser level

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *explaining and demonstrating how building foundations can be located with hand tools only using tape measures, string lines, levels, and the 3-4-5 method*
- *demonstrating the set-up and use of a builder's level to determine elevations*
- *explaining how different styles of grade rods are marked and how they are read*
- *demonstrating the set-up and use of a laser level and ensuring that specific safety aspects of laser equipment is explained and followed*
- *ensuring that the metric and imperial graduations on measuring tools and instruments are fully understood*

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**Concrete**

**15 hours**

- concrete mixtures and admixtures
- concrete testing
- place, finish and cure concrete
- concrete maintenance and repair

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *explaining the contents of a concrete mix and the effect different admixtures have on this mix*
- *allowing observation and participation in the testing procedures for concrete*

- *providing opportunities to assist in the placement, finishing and curing of concrete in the various types of building foundation and slab formwork*
  - *allowing the apprentice to install various concrete grouting and maintenance products*
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## **Floor Framing**

**36 hours**

- beams and supports
- floor systems
- floor sheathing and installation procedures
- deck systems

### **Mentors can assist the apprentice to prepare for this section of technical training by:**

- *providing instruction and opportunities to set-up various types of formwork in various applications*
  - *providing manufacturer's installation guides for various formwork applications from websites*
  - *explaining the principles and processes for the installation of different types of piling and allowing the observation of installation*
  - *demonstrating or providing information for correct drainage and backfilling techniques*
  - *exposing the apprentice to the interpretation of wall framing construction documents and details*
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## **Foundations**

**45 hours**

- formwork for footings
- grade beam formwork and pilings
- formwork for foundation walls
- foundation drainage, damproofing, waterproofing, and backfilling
- formwork for slabs-on-grade
- concrete reinforcement
- permanent wood foundations

### **Mentors can assist the apprentice to prepare for this section of technical training by:**

- *providing instruction and opportunities to set-up various types of formwork in various applications*
  - *providing manufacturer's installation guides for various formwork applications from websites*
  - *explaining the principles and processes for the installation of different types of piling and allowing the observation of installation*
  - *Demonstrating or providing information for correct drainage and backfilling techniques*
- 

## **Building Materials**

**12 hours**

- wood and lumber used in the construction process
- engineered panels used in the construction process
- engineered wood products used in the construction process
- storage for various building materials
- fasteners and procedures for their use
- metals used construction

### **Mentors can assist the apprentice to prepare for this section of technical training by:**

- *continually identifying and explaining the use of various types of wood, engineered wood and panel products and the proper storage techniques for each*
  - *describing the terminology used to identify the various types of nails, screws and fasteners and giving examples of their applications*
  - *having the apprentice select the proper materials for projects*
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## Level Two

7 weeks

210 hours

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### Construction Documents

27 hours

- residential construction drawings

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *assisting in the interpretation of various pages of construction drawings*
  - *ensuring various aspects of the job are interpreted using these documents*
  - *explaining and demonstrating the use of various types of scales and the use of scale rulers*
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### Wall Systems

36 hours

- wall framing systems
- engineered wall systems
- structural timber materials

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *ensuring familiarity with the contents of the Canadian National Building Code and how these contents relate to all types of wall and ceiling framing requirements*
  - *exposing the apprentice to the interpretation of wall framing construction drawings and details*
  - *allowing participation in, or exposure through information, to all aspects of layout, assembly and sheathing of various types of framed walls including standard wood, steel stud and heavy timber types of construction*
  - *exposing apprentice to the various types of engineered products used in wall framing and explaining their special installation requirements*
  - *providing manufacturer's installation instructions for various engineered products from web sites*
  - *explaining the framing requirements for the installation of steel door frames*
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### Roof Framing

36 hours

- conventional gable and shed roofs
- engineered roof trusses and sheathing
- gable roofs using metric measurements

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *ensuring familiarity with the contents of the Canadian National Building Code and how these contents relate to all types of roof framing requirements*
  - *explaining the terminology used to describe different roof styles and shapes*
  - *ensuring interpretation of roof framing construction drawings and details*
  - *allowing participation in, or exposure through information, to all aspects of layout, assembly and sheathing of various types of framed roofs including standard wood rafter and wood truss systems*
  - *explaining the framing requirements for the installation of skylights and other roof openings such as chimney chases*
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### Roof Coverings

12 hours

- roof coverings

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *explaining the requirements for different roof covering systems*
- *ensuring familiarity with the contents of the Canadian National Building Code and how these contents relate to the requirements for all types of roof coverings*
- *allowing participation in the installation of various types of roof coverings*
- *providing examples of special roof coverings and information regarding their installation requirements*

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**Exterior Windows and Doors****9 hours**

- exterior windows
- exterior doors

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *allowing participation in the installation of exterior doors and windows; and in the measuring and retrofitting of windows*
  - *demonstrating proper techniques with materials used to seal windows, doors and build-outs*
  - *explaining the different applications for various types of caulking and sealants and allow the apprentice to install these products while monitoring speed and technique*
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**Exterior Finishes and Accessories****24 hours**

- cornices
- exterior wall covering

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *providing opportunities to install soffit, fascia and various types of wall cladding*
  - *demonstrating how a storey pole or layout rod is created and used for siding installation*
  - *describing how trim pieces are cut and the installation is sequenced to ensure the shedding of water*
- 

**Transits****30 hours**

- basic transit functions
- building layout with transit

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *demonstrating the set-up and use of a transit*
  - *demonstrating the use of a transit to locate building foundations*
  - *exposing the apprentice to building layout using this instrument*
  - *monitoring the apprentice's ability to perform the math functions required to use these systems*
  - *coaching the apprentice in the use of scientific calculators for this work*
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**Wood Stairs****36 hours**

- basic wood stairs
- straight stairwell openings

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *providing opportunities to calculate the size of stairwell openings*
- *allowing the apprentice assist in the layout and construction of various types of stairs and balustrades*
- *giving exposure and examples using the various formulas used to calculate geometric stairs on paper*

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## Level Three

7 weeks

210 hours

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### Construction Documents

30 hours

- basic construction freehand sketches
- commercial drawings and specifications

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *providing instruction and opportunity for the sketching of miscellaneous simple and more elaborate building components*
  - *continuing to assist in the interpretation of various pages of a set of commercial blueprints, specifications and room schedules and explaining how they are associated to each other*
  - *providing an old set of specifications for the apprentice to study and become familiar with the contents*
  - *providing exposure to basic masonry and light structural steel terminology, definitions and applications*
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### Commercial Formwork

42 hours

- formwork for columns and piers
- slab and beam formwork
- wall formwork for commercial construction

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *describing the parts and the construction of this type of formwork*
  - *allowing the apprentice to install, level and align commercial slab, beam and wall and formwork*
  - *detailing reasoning and procedures for hoarding ventilation requirements*
  - *demonstrating and monitoring the proper setup of heating equipment*
- 

### Concrete Stairs

27 hours

- formwork for concrete stairs

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *describing the components used to make stair formwork*
  - *exposing the apprentice to the techniques used to install this type of formwork*
  - *allowing the apprentice to work on the concrete placement and the finishing of a set of concrete stairs*
- 

### Roof Framing

36 hours

- conventional hip roofs
- engineered roof trusses and install sheathing
- hip roofs using metric measurements

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *ensuring familiarity with the contents of the Canadian National Building Code and how these contents relate to all types of roof framing requirements*
  - *explaining the terminology used to describe different roof styles and shapes*
  - *ensuring interpretation of roof framing construction drawings and details*
  - *allowing participation in, or exposure through information, to all aspects of layout, assembly and sheathing of various types of framed roofs including standard wood rafter and wood truss systems*
  - *explaining the framing requirements for the installation of skylights and other roof openings such as chimney chases*
-

## Interior Finish

42 hours

- interior wall systems
- finish components and accessories
- ceiling finishes
- various types of flooring

### NOA subtasks covered in this section of training:

#### B-7 Performs layout

B-7.06 Lays out ceiling systems

#### F-17 Interior Finish

F-17.01 Installs wallboard

F-17.02 Installs wall compound

F-17.03 Installs panels, tiles and solid wood finishes

F-17.04 Installs suspended ceilings

F-17.05 Installs demountable wall systems

#### F-20 Constructs and installs finish components and stairs

F-20.01 Fabricates finish components

F-20.02 Installs finish components and accessories

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## Doors and Hardware

33 hours

- commercial door frames, doors and hardware
- residential door frames, doors and hardware
- specialty doors

### Mentors can assist the apprentice to prepare for this section of technical training by:

- *explaining the rough opening requirements for various door and specialty door frames*
- *ensuring familiarity with the contents of the Canadian National Building code and how these contents relate to door and hardware requirements for residential and commercial applications*
- *explaining the importance of being able to read and comprehend installation instructions*
- *assisting the apprentice to install various styles of doors and types of hardware*
- *monitoring the apprentice's ability to interpret instructions during the installation of products*

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# Level Four

7 weeks

210 hours

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## Construction Documents

15 hours

- commercial drawings and specification

### Mentors can assist the apprentice to prepare for this section of technical training by:

- *continuing to expose, explain and allow the apprentice to interpret building documents*
- *continuing to encourage, allow and increase the difficulty of estimation duties*

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## Intersecting Roof

30 hours

- construct an intersecting roof (imperial)
- calculate an intersecting roof (metric)

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *explaining the terminology used for various components used in the construction of these types of roofs*
  - *showing the apprentice examples of styles and shapes particular to these types of roofs*
  - *having the apprentice interpret blueprints and truss shop drawings particular to this type of roof construction*
- 

**Cabinets (Exceeds)**

**42 hours**

- materials, terminology and design considerations used in the construction of cabinets
- wall cabinets
- base cabinets
- plastic laminate counter tops

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *explaining the terminology used for the construction of wall and base cabinets*
- *describing and demonstrating how a storey pole or layout rod is created*
- *exposing the apprentice to construction and installation techniques*
- *describing the types, applications and installation of hardware used for different styles of cabinets*
- *explaining the terminology used particular to laminate, solid and natural product countertops*
- *explaining the techniques and procedures used for the cutting, gluing and installing of laminate materials*
- *demonstrating techniques and tools used to level, align, clamp, join and fasten cabinet components*
- *demonstrating the techniques and tools used to scribe, cut, mitre, butt and install various styles of countertop components*

**This section of training exceeds the minimum sequencing as set out by the Carpenter NOA.**

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**Wood stairs**

**36 hours**

- stairs and balustrades
- stairwell openings
- winders and geometrical stairs

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *providing opportunities to calculate the size of stairwell openings*
  - *allowing the apprentice assist in the layout and construction of various types of stairs and balustrades*
  - *giving exposure and examples using the various formulas used to calculate geometric stairs on paper*
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**Interior Finish Components**

**12 hours**

- flooring
- panelling

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *allowing the apprentice to install interior wall and ceiling products, having them work with subtrades periodically if possible*
  - *encouraging the apprentice to watch installation techniques by experts*
  - *circulating apprentices with company experts to assist in the installation of these products*
  - *providing opportunities to install baseboard, casings, crown mouldings and other trims*
  - *ensuring familiarity with the contents of the Canadian National Building code and how these contents relate to bathroom hardware and wheelchair accessibility requirements for commercial and residential applications*
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**Renovations**

**12 hours**

- renovation-specific construction documents
- renovation-specific construction activities

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *exposing the apprentice to prints and documents specific to renovation work*
  - *demonstrating the various procedures used to protect structures and property during renovations*
  - *teaching the apprentice to identify components that no longer meet code requirements*
  - *demonstrating the techniques used to temporarily shore or underpin existing components to allow for renovation work to occur*
  - *demonstrating the procedures used to maintain and improve the building envelope*
- 

**Project Planning**

**12 hours**

- quantity take-off
- organizes work

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *continuing to expose, explain and allow the apprentice to interpret building documents*
  - *continuing to encourage, allow and increase the difficulty of estimation duties*
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**Building Envelope**

**18 hours**

- insulate and seal the building envelope
- fundamentals of building science

**Mentors can assist the apprentice to prepare for this section of technical training by:**

- *explaining and demonstrating how a correctly installed building envelope affects heat and sound transfer*
  - *providing examples of an incorrectly installed building envelope and demonstrate repair techniques*
  - *encouraging the apprentice to monitor the mechanical equipment being installed and explaining why this equipment is needed*
- 

**Carpenter Review (Exceeds)**

**27 hours**

- common occupational skills
- planning and layout
- concrete
- framing
- exterior finish
- interior finish
- renovations

**Mentors can assist the apprentice to prepare for this section of technical training by:**

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- *advising the apprentice that at the end of training they will be given an examination that covers all aspects of all four levels of technical training, not just the final level and to start studying while working*
- *encouraging the apprentice to begin reviewing all materials previously provided both during technical training and at the worksite*
- *prompting the apprentice to ask site personnel any and all questions in order to clarify understanding of past learning experiences*

**This section of training exceeds the minimum sequencing as set out by the Carpenter NOA.**

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**Consider apprenticeship training as an investment in the future of your company and in the future of your workforce. Ultimately, skilled and certified workers increase your bottom line.**

**Get involved in the apprenticeship training system. Your commitment to training helps to maintain the integrity of the trade.**

**Do you have employees who have been working in the trade for a number of years but don't have trade certification? Contact your local apprenticeship office for details on how they might obtain the certification they need.**

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