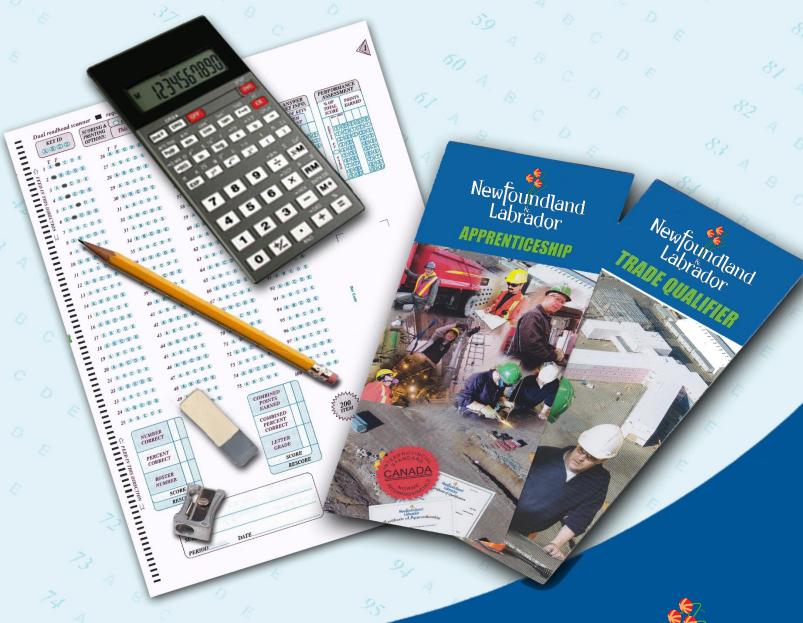
# APPRENTICESHIP & CERTIFICATION

Study Guide Bricklayer



# **Apprenticeship and Certification**

# **Study Guide**

# **Bricklayer**

(Based on Red Seal Occupational Standard – RSOS 2021)

Government of Newfoundland and Labrador Department of Immigration, Population Growth and Skills

Version 13

REVISED April 2024

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# Introduction

This Study Guide has been developed by the Newfoundland and Labrador Department of Immigration, Population Growth and Skills, Apprenticeship and Trades Certification Division, to assist apprentices and trade qualifiers as they prepare to write the Red Seal Exam. Red Seal Exams are available for all Red Seal trades. For a list of Red Seal trades please refer to the Department of Immigration, Population Growth and Skills website: https://www.gov.nl.ca/atcd/designated-trades/list-of-designated-trades/.

## Some of the specific goals of this guide are:

- ⇒ to help you understand the skills and knowledge that might be covered on the exam
- ⇒ to help you identify your strengths and weaknesses
- ⇒ to provide organization and structure for a course of study
- ⇒ to provide a list of resources to help you with your study plan
- ⇒ to support and supplement the teaching and learning process

This study guide outlines the theoretical portion of the program. The intent is not to replace technical training provided under the guidance of instructors. Rather, it is a tool to be used in conjunction with formal training.



# **Exam Process**

## **Before the Exam**

You must contact the nearest Apprenticeship and Trades Certification Divisional office to make request to write the Red Seal exam (*See Appendix A for a list of regional offices*). Upon approval, the Apprenticeship Program Officer (APO) will notify you of your eligibility to write the exam, and provide you with scheduling information. If you require special accommodations due to a disability or language barrier, please contact your regional office for information on applying for this service.

# **During the Exam**

You	must	bring:
		~

	personal identification such as a photo or signature ID or valid Newfoundland and Labrador driver's license
	your notification letter
The follow	ring will be provided:
	a calculator (see Appendix B for calculator information)

#### **Important Note:**

Personal cell phones, calculators, or other electronic equipment are NOT allowed into the exam room. If you do bring them, they will be stored away and returned to you when you have completed the exam.

□ all other items required such as pencils, scrap paper, etc.

## **After the Exam**

Results will be mailed to you approximately seven to ten days after completion of the exam. All necessary instructions and information will be provided in the results letter.

The percentage mark you obtained will be provided. You will also be given a section by section breakdown, showing how many questions were in each section, as well as the number of questions in each section you completed successfully.

If you are successful in obtaining a 70% or more on your exam, you will be issued a Newfoundland and Labrador Certificate of Qualification with a Red Seal endorsement.

# **Exam Format**

All Red Seal exams are written in multiple-choice format. Each exam has between 100 and 150 questions. A multiple choice question consists of a stem (a complete question) followed by four options (A, B, C, D). The stem contains all the information necessary to answer the question. The options consist of the one correct answer and three "distracters." Distracters are incorrect. (See Appendix C for a sample answer sheet).

Red Seal exams contain three types of questions:

# Level 1 Knowledge and Recall

Questions at this level test your ability to recall and understand definitions, facts, and principles.

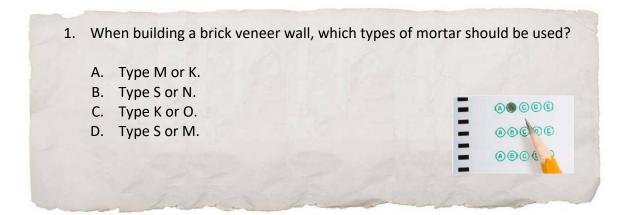
# **Level 2** Procedural and Application

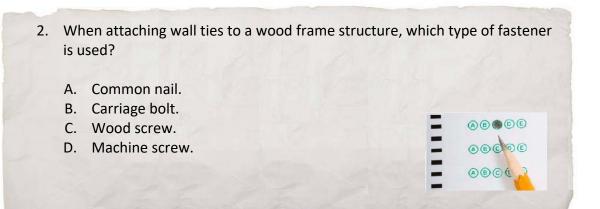
Questions at this level test your ability to apply your knowledge of procedures to a new situation.

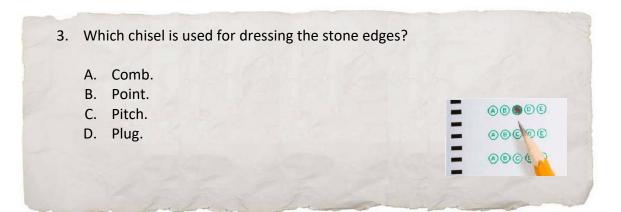
# **Level 3** Critical Thinking

Questions at this level test your ability to interpret data, solve problems and arrive at valid conclusions.

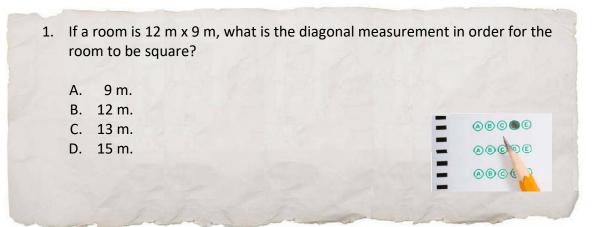
## **Level 1 Examples:**







## **Level 2 Examples:**



- 2. What is the procedure to mixing a muriatic acid solution for cleaning brick?
  - A. Mix the water into the acid.
  - B. Mix the acid into the water.
  - C. Mix the acid into the soapy water solution.
  - D. Mix the soapy water solution into the acid.



- 3. How many standard blocks are required per course on a wall that is 7 200 mm long?
  - A. 16.
  - B. 18.
  - C. 32.
  - D. 36.



## **Level 3 Examples:**

- 1. When using flagstone, which has coverage of 1.5  $m^2/t$ , how much stone is required for a patio 2 000 m. x 4 000 m?
  - A. 2.3 t.
  - B. 4.0 t.
  - C. 5.3 t.
  - D. 12.0 t.



- Concrete block is laid out so that each course gauges at 200 mm. What will be the height of the wall after 26 courses?
   A. 2.6 m.
  - B. 3.8 m.
  - C. 4.2 m.
  - D. 5.2 m.



- 3. What is the minimum height above the chimney cap that chimney liners will extend?
  - A. 25 mm.
  - B. 38 mm.
  - C. 50 mm
  - D. 75 mm.



Source of Questions:

https://www.red-seal.ca/eng/s.1mpl.2.2x.1mQ.5.2st.3.4ns.shtml?tid=36

## **Exam Content**

# **Understanding the** *Red Seal Occupational Standard* (RSOS)

The Red Seal model has historically been based on the development of the National Occupational Analysis (NOA) which supports the development of multiple-choice format examinations.

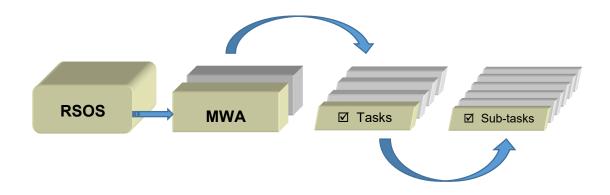
The RSOS was introduced in 2015 and is now taking the place of the NOA. Each RSOS or NOA sets the standard for a Red Seal trade. The Red Seal Examination is based on the Red Seal Standard.

The new standards provide greater consistency in learning resources and allow for increased industry involvement in the development of these standards. This new model places increases emphasis on apprenticeship training and assessing skills with industry learning objectives, outcomes and performance criteria.

The RSOS for each trade describes the tasks and sub-tasks; skills and knowledge requirements; summary of essential skills; safety information; trends affecting the trade; technical terms; names of tools and equipment; acronyms; learning objectives and outcomes; industry expected performance and essential skills related to each sub-task.

The RSOS is an excellent tool to use as you study for the Red Seal exam. RSOSs can be found at <a href="http://www.red-seal.ca/resources/n.4.1-eng.html">http://www.red-seal.ca/resources/n.4.1-eng.html</a>

RSOS material is organized into the following categories: **MWA** (*Major Working Activity*). The MWAs are further broken down into **TASKS** (*describes activities within an MWA*) and **SUB-TASKS** (*describe activities within a task* – *This is what the exam is based on*).

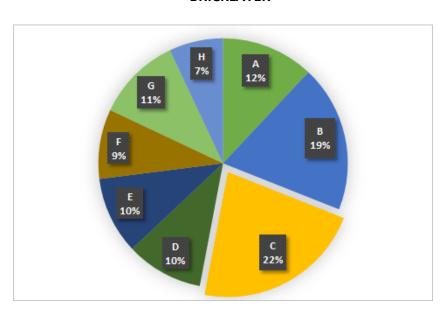


The NOA will continue to be used as the occupational standard for trades that do not yet have an RSOS developed.

# **RSOS Pie Chart**

The RSOS Pie Chart presents the MWA percentages in the form of a pie chart which tells you the approximate number of questions from each MWA. For example, 12% of the questions on the **Bricklayer** Exam will be based on **MWA A**.

## **BRICKLAYER**



	Major Working Activity (MWA) Titles			
MWA A	Performs Common Occupational Skills	MWA E	Builds Chimneys and Fireplaces	
MWA B	Performs General Masonry Practices	MWA F	Installs Refractories and Corrosion Resistant Materials	
MWA C	Builds Masonry Systems	MWA G	Performs Restoration	
MWA D	Builds Natural Stone Systems	MWA H	Performs Additional Masonry	

## **Exam Breakdown**

The **Bricklayer** exam currently has 125 questions. The following table shows a breakdown of the number of questions that come from each RSOS MWA. It is important to note that the exact number of questions can change at any time. When you are ready to write your exam, you may contact your regional office to verify the number of questions (See Appendix A).

		# of Qu	estions
MWA A	Performs Common Occupational Skills		15
Task 1	Performs safety-related functions	3	
Task 2	Uses and maintains tools and equipment	4	
Task 3	Uses scaffolding	3	
Task 4	Organizes work	3	
Task 5	Uses communication and mentoring techniques	2	
MWA B	Performs General Masonry Practices		23
Task 6	Performs substrate preparation	7	
Task 7	Performs fundamental masonry tasks	9	
Task 8	Uses mortars, grouts and adhesives	7	
MWA C	Builds Masonry Systems		27
Task 9	Builds masonry walls	11	
Task 10	Builds horizontal masonry surfaces	6	
Task 11	Builds and installs prefabricated masonry	4	
Task 12	Installs surface-bonded masonry units	6	
MWA D	Builds Natural Stone Systems		13
Task 13	Builds natural stone walls	7	
Task 14	Performs mechanically-fastened natural stone cladding procedures	6	
MWA E	Builds Chimneys and Fireplaces		13
Task 15	Builds chimneys	7	
Task 16	Builds fireplaces	6	
MWA F	Installs Refractories and Corrosion Resistant Materials		11
Task 17	Installs and Maintains refractories	7	
Task 18	Installs and maintains corrosion resistant materials	4	
MWA G	Performs Restoration		14
Task 19	Rebuilds masonry work	8	
Task 20	Repairs and cleans existing masonry work	6	
MWA H	Performs Additional Masonry		9
Task 21	Installs glass blocks	2	
Task 22	Installs ornamental and sculptured masonry	2	
Task 23	Builds arches	5	
	Total		125

# **RSOS Sub-tasks**

The following RSOS Task Profile Checklist outlines the MWAs, tasks and sub-tasks for your trade. The Red Seal exam is written to test your knowledge and abilities regarding the sub-tasks in the RSOS. This chart can be used to review your current knowledge. You can review by placing a checkmark ( $\checkmark$ ) next to those you understand fully.

Place your focus on those you do not understand and study them until you are comfortable with the material. Think of possible questions in that particular content area.

The RSOS also contains a list of "supporting knowledge and abilities" for each sub-task. They are the skills and knowledge you must have to perform a sub-task. The supporting knowledge and abilities identified under each sub-task will be very helpful as you review. The list can be found in the RSOS for your trade.

# Task Profile Checklist Based on RSOS 2021 Bricklayer

MWA A: Performs Common Occupational Skills				
	Ļ	_		
L	_	Ta	sk 1: Performs safety-related functions	
		Sub-Tasks	<ul> <li>□ Maintains safe work environment</li> <li>□ Uses personal protective equipment (PPE) and safety equipment</li> </ul>	
	Ļ		al. 2. Hann and maintains to als and assimus at	
L	7	ıa	sk 2: Uses and maintains tools and equipment	
		Sub-Tasks	<ul> <li>□ Maintains tools and equipment</li> <li>□ Uses rigging, hoisting and lifting equipment</li> <li>□ Uses access equipment</li> </ul>	
		Ta	sk 3: Uses scaffolding	
		Sub-Tasks	<ul> <li>□ Erects scaffolding</li> <li>□ Dismantles scaffolding</li> <li>□ Maintains scaffolding</li> </ul>	
		Ta	sk 4: Organizes work	
		Sub-Tasks	<ul> <li>□ Uses drawings and specifications</li> <li>□ Plans daily tasks and activities</li> <li>□ Prepares job site and materials</li> <li>□ Protects surrounding areas</li> </ul>	
		Tas	sk 5: Uses communication and mentoring techniques	
		Sub-Tasks	☐ Uses communication techniques ☐ Uses mentoring techniques	

M۱	N A	4 В	: Performs General Masonry Practices
		Ta	sk 6: Performs substrate preparation
		Sub-Tasks	<ul> <li>□ Prepares vertical substrates and foundations</li> <li>□ Applies parging</li> <li>□ Installs anchoring/tie systems</li> <li>□ Installs membrane and flashing</li> <li>□ Installs insulation</li> </ul>
		Ta	sk 7: Performs fundamental masonry tasks
			ok 7. Terrormo randamentar masom y tasks
		Sub-Tasks	☐ Lays out wall and coursing ☐ Finishes joints ☐ Cleans new masonry surfaces ☐ Seals masonry surfaces
		Ta	sk 8: Uses mortars, grouts and adhesives
		Sub-Tasks	<ul> <li>☐ Mixes mortar, concrete, grout and adhesives</li> <li>☐ Uses mortars</li> <li>☐ Uses concrete and grout</li> <li>☐ Uses adhesives</li> </ul>
M	N/	<u>۸</u> (	: Builds Masonry Systems
IVI	, v ,	٠ C	. Bullus Masolil y Systems
		Ta	sk 9: Builds masonry walls
		10	
		sks	☐ Builds nonload-bearing walls
		Sub-Tasks	☐ Builds load-bearing walls
		Ta	sk 10: Builds horizontal masonry surfaces
		S	
		ask	☐ Prepares horizontal substrate
		Sub-Tasks	☐ Lays masonry units on horizontal surfaces

M۱	MWA C: Builds Masonry Systems (Cont'd)				
		Ta	sk 11: Builds and installs prefabricated masonry		
		S	☐ Builds prefabricated masonry		
		asl	☐ Erects prefabricated masonry		
		Sub-Tasks			
		Su			
		Ta	sk 12: Installs surface-bonded masonry units		
		ks	☐ Prepares substrate for surface-bonded masonry units		
		Sub-Tasks	☐ Applies surface-bonded masonry units		
		-qr			
		Sı			

M۱	MWA D: Builds Natural Stone Systems				
		Tas	sk 13: Builds natural stone walls		
		S	☐ Prepares natural stone		
		ask	☐ Lays natural stone		
		Sub-Tasks	☐ Damp cures walls		
		Tas	sk 14: Performs mechanically-fastened natural stone cladding procedures		
		S	☐ Prepares substrate for cladding		
		Sub-Tasks	☐ Prepares natural stone for cladding		
		6-T	☐ Installs natural stone cladding		
		Sui			

M۱	MWA E: Builds Chimneys and Fireplaces					
		Ta	sk 15: Builds chimneys			
			☐ Builds foundation supports for chimneys			
		iks	☐ Lays masonry units to build chimneys			
		Tas	☐ Installs flue lining			
		Sub-Tasks	☐ Installs related flashings			
		S	☐ Installs caps			
			d ac p the Constant			
	Ш	ıa	sk 16: Builds fireplaces			
			Builds foundation for hearth, firebox, backup material and veneer			
		ks	☐ Builds hearth, firebox and backup			
		Tas	☐ Installs damper			
		Sub-Tasks	☐ Builds smoke chamber			
		Sı	☐ Prepares existing fireplace for insert			
			☐ Faces fireplaces and inserts			

M	MWA F: Installs Refractories and Corrosion Resistant Materials				
		Та	sk 17: Installs and maintains refractories		
			☐ Prepares for installation of refractories and accessories		
		ks	☐ Prepares mortar for refractories		
		Sub-Tasks	☐ Removes existing refractories		
		-qn	☐ Installs refractories		
		S	☐ Repairs refractories		
	Ш	Ta	sk 18: Installs and maintains corrosion resistant materials		
			☐ Prepares for installation of corrosion resistant materials and accessories		
		sks	☐ Prepares mortar for corrosion resistant materials		
		Sub-Tasks	☐ Removes existing corrosion resistant materials		
		Sub	☐ Installs corrosion resistant materials		
		•	☐ Repairs corrosion resistant materials		

M۱	MWA G: Performs Restoration				
		Та	sk 19: Rebuilds masonry work		
		ks	☐ Disassembles unit masonry		
		Tas	☐ Prepares restoration work area		
		Sub-Tasks	☐ Reinstalls masonry and accessories		
		S			
		-	d an Development development and		
	Ш	ıa	sk 20: Repairs and cleans existing masonry work		
			D. Berner and details and advanced and an arrangement of the control of the contr		
		S	Removes deteriorated masonry components		
		Sub-Tasks	Repoints joints		
		)-Tc	☐ Repairs masonry units		
		Suk	☐ Reinstalls masonry units and accessories		
		•	☐ Cleans existing masonry surfaces		

MV	VΑ	١Н	: Performs Additional Masonry							
	☐ Task 21: Installs glass blocks									
		Sub-Tasks	<ul><li>□ Prepares work area for installation of glass blocks</li><li>□ Lays glass blocks</li></ul>							
		Та	Task 22: Installs ornamental and sculpted masonry							
		Sub-Tasks	<ul> <li>□ Prepares for installation of ornamental and sculpted masonry units</li> <li>□ Installs ornamental and sculpted masonry units</li> </ul>							
		Ta	sk 23: Builds arches							
		Sub-Tasks	<ul> <li>□ Prepares location for installation of arch</li> <li>□ Builds template</li> <li>□ Places template</li> <li>□ Installs arch masonry units</li> <li>□ Removes template</li> </ul>							

# **Create a Study Plan**

As you prepare for your exam, it is important to plan a schedule. The following two tables will help you stay on track.

The first table is a "Weekly Study Plan." In this table list the areas you will focus your study for each day. You should include items you need to review as well as items you need to study. Remember, more time will be needed for study in areas you find difficult, whereas you may only require review in areas you are more familiar with. As you work through the RSOS sub-task list you can start to fill in this table.

The second table is a **"Study Time Table."** It is important to create a study schedule where you determine the best days of the week and times of day for you to study.

Print several copies of these tables and fill out for each week of study. It is important to stick to your study schedule.

Weekly	/ Study	y Plan for Week of:	

	Area of Study 1	Area of Study 2	Area of Study 3	Area of Study 4	Area of Study 5	Area of Study 6
Mon.						
Tues.						
Wed.						
Thu.						
Fri.						
Sat.						
Sat.						
Cure						
Sun.						

Study	Time	Table for	Week of:	

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:00 AM - 9:00 AM							
9:00 AM - 10:00 AM							
10:00 AM - 11:00 AM							
11:00 AM - 12:00 Noon							
12:00 Noon 1:00 PM							
1:00 PM - 2:00 PM							
2:00 PM - 3:00 PM							
3:00 PM - 4:00 PM							
4:00 PM - 5:00 PM							
5:00 PM - 6:00 PM							
6:00 PM - 7:00 PM						_	
7:00 PM - 8:00 PM							

## **Resources - Websites**

Study information can be drawn from a variety of sources. A sample list of study materials (websites and books) is provided below. These and other helpful resources may be found in a local college bookstore, on the internet, or at your place of employment. You may also be able to borrow them from an apprentice or journeyperson in your trade.

#### Study Strategies and Exam Preparation Guide

The *Study Strategies & Exam Preparation Guide* is used in conjunction with this study guide. It provides direction and information on such areas as study habits, test preparation and test taking techniques.

https://www.gov.nl.ca/atcd/apprentices-youth/self-study/study-guides/

### Plan of Training (POT)

A *Provincial Plan of Training* details the full scope of learning for a particular occupation, including both technical training competencies and industry experiences necessary to write a Red Seal exam (and complete the requirements for Red Seal Certification), or to write a provincial examination. The Plan of Training is based on the RSOS.

https://www.gov.nl.ca/atcd/designated-trades/pots-aacs/

#### **Red Seal Website**

**Red Seal** is a program that sets common standards to evaluate the skills of tradespeople across Canada. It is a partnership between the Federal Government and the provinces/territories.

The Red Seal model has been based on the National Occupational Analyses (NOA) which supports the development of multiple-choice examinations. A new Red Seal Occupational Standard (RSOS) was introduced in 2015 and is taking the place of the NOA.

http://www.red-seal.ca/

#### **Bricklayer PRACTICE Exam**

This is **NOT** a Red Seal exam. This is a practice exam provided by the Inter-provincial Red Seal Standards Program. It was developed using similar question types to that of a Red Seal exam. The exam is intended to be used for self-assessment in preparation for writing a Red Seal Exam.

https://www.red-seal.ca/eng/s.1mpl.2.2x.1mQ.5.2st.3.4ns.shtml?tid=36

#### Red Seal Exam Self-Assessment Guide

Use this self-assessment tool to rate your own understanding and experience with the tasks of the trade that are on the Red Seal examination:

https://www.red-seal.ca/eng/resources/selfexamspace.shtml?tid=36

#### Acronyms

The Red Seal website lists Acronyms which will be helpful in preparing for your Red Seal Exam! https://www.red-seal.ca/eng/trades/bricklayers/app-a.shtml

#### **Tools and Equipment**

The Red Seal website lists Tools and Equipment which will be helpful in preparing for your Red Seal Exam! https://www.red-seal.ca/eng/trades/bricklayers/app-b.shtml

#### **Glossary of Terms**

The Red Seal website lists a Glossary of Terms which will be helpful in preparing for your Red Seal Exam! https://www.red-seal.ca/eng/trades/bricklayers/app-c.shtml

# **Resources – Book List**

You can use this list to help you obtain information on specific topics. It is not necessary to use these books specifically, as you may find others that will be equally beneficial.

If you	wish to obtain any of the resources listed below, here is the reference information:
	Masonry, Level 1, 3 <sup>rd</sup> Edition, 2005, Pearson Prentice, ISBN 0132287188
	Modern Masonry, 2003, Kicklighter, C., The Goodheart-Wilcox Inc., ISBN 9781566379632
	Masonry, Level 2, 3 <sup>rd</sup> Edition, 2006, Prentice Hall, ISBN 0131091697

#### Disclaimer

Various external resources (websites, textbooks) have been listed in this study guide to assist an individual in preparing to write a Red Seal Exam. This does not mean the Department of Immigration, Population Growth and Skills, Newfoundland and Labrador endorses the material or that these are recommended as the best resources. There may be other resources of equal or greater value to an individual preparing for a Red Seal exam. The Department of Immigration, Population Growth and Skills has no control over the content of external textbooks and websites listed, and no responsibility is assumed for the accuracy of the material.

# **Conclusion**

We hope this guide has provided you with some useful tools as you prepare for your Red Seal exam. If you have any questions regarding your Red Seal exam please contact your regional office (see Appendix A for a list of regional offices).

We appreciate your comments and feedback regarding the usefulness of this study guide. If you have any comments or suggestions, we welcome your feedback. The feedback form at the end of this guide can be used for this purpose.

# **Appendix A: Regional Offices**

If you have any questions regarding your Red Seal exam, please contact one of the following regional offices:

Department of Immigration, Population Growth and Skills
Apprenticeship and Trades Certification Division
Toll Free: 1-877-771-3737

https://www.gov.nl.ca/atcd/contact-us/staff-listing-and-office-locations/

## **Corner Brook**

1-3 Union

Aylward Building, 2<sup>nd</sup> Corner Brook, NL A2H

Telephone: (709) 637-2366 Facsimil (709) 637-2519

## Clarenville

45 Tilley's Road Clarenville, NL A5A 1Z4

Telephone: (709) 466-3982 Facsimile: (709) 466-3987

#### **Grand Falls-Windsor**

42 Hardy Avenue Grand Falls-Windsor, NL A2A 2J9

Telephone: (709) 292-4215 Facsimile: (709) 292-4502

## St. John's

P.O. Box 8700 1170 Topsail Road Mount Pearl, NL A1B 4J6

Telephone: (709) 729-2729 Facsimile: (709) 729-5878

## **Happy Valley – Goose Bay**

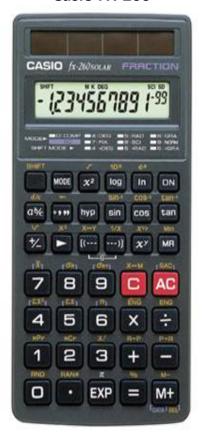
163 Hamilton River Road Bursey Building Happy Valley – Goose Bay, NL AOP 1EO

Telephone: (709) 896-6348 Facsimile: (709) 896-3733

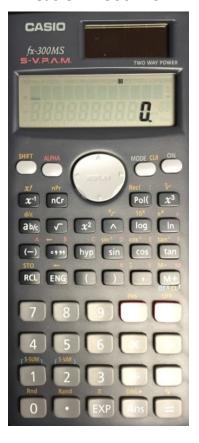
# Appendix B: Calculator Use

The picture below shows two calculators with the same functions as the one you will be provided with during your exam. It is advisable to borrow or purchase one with similar functions so that you can familiarize yourself with it before you write your exam.

Casio FX-260

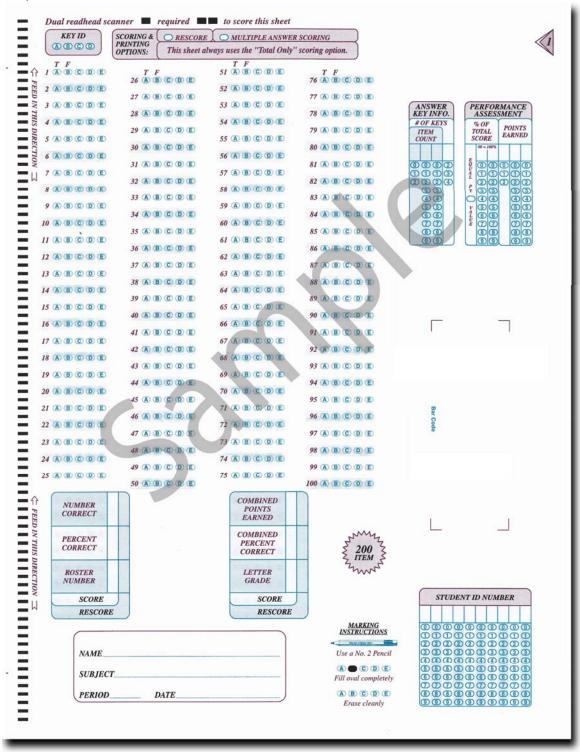


Casio FX-300 MS



# Appendix C: Answer Sheet Example

With your exam you will be given an answer sheet similar to the one below. When answering multiple choice questions be sure to fill the circle completely and fill the circle that corresponds to the question on the exam.



# Feedback Form Study Guide – Bricklayer

Please answer the following:								
(1)	This Study Guide is a useful tool for exam preparation.							
	☐ strongly agree	□ agree	□ disagree	☐ strongly disagree				
(2)	The topics contained in the guide are arranged in a logical order.							
	☐ strongly agree	□ agree	□ disagree	☐ strongly disagree				
(3)	The design and form	_	• •					
	☐ strongly agree	□ agree	□ disagree	☐ strongly disagree				
(4)	The instructions thro	oughout the gu	ide are clear an	d to the point.				
	☐ strongly agree	□ agree	□ disagree	☐ strongly disagree				
(5)	The resources listed in this guide are suitable and valuable.							
	☐ strongly agree	□ agree	□ disagree	☐ strongly disagree				
(6)	The guide should co	The guide should contain more information.						
	☐ strongly agree	□ agree	□ disagree	☐ strongly disagree				
Sugge	sted information/reso	ources to includ	le:					
Additional Comments:								

Please complete this form and return via fax or mail to the following:

Department of Immigration, Population Growth and Skills
Apprenticeship and Trades Certification Division
Standards and Curriculum Unit
45 Tilley's Road, Clarenville, NL A5A 1Z4

Fax: (709) 466-3987

