



# WORKING IN ROOFING

A Workbook to Introduce you to the Basics

Developed for the Ontario Adult Literacy and Basic Skills Sector

Developed by:



Funded by:



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# Unit 1: Introduction

There are many aspects to working in roofing. Becoming a skilled roofer takes time and effort.

In this unit, you will learn:

- About this Workbook
- Working in Roofing: An Introduction



# About this Workbook

Welcome to Working in Roofing!

You don't need to know anything about roofing to read this workbook. It will introduce you to the basics in roofing work. You can print it or use it on your computer or phone and type in answers to the questions.

You will learn about:

- The basics of a roof and roofing system
- The skilled trades and apprenticeships
- Safety at work
- Tools and materials in roofing work
- Communicating on the job
- Finding work



Brainstorm what you want to learn about working in roofing. Make a list below.

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

# Working in Roofing: An Introduction

Roofers build and repair roofs. They work on the roofs of houses, schools and other buildings. Their goal is to build a strong, safe roof.

Roofing work involves many tasks. Each task requires different skills and tools.

Roofing is a skilled job. It takes time to learn to do the job well. When you begin working, you can start as a helper and gradually learn roofing skills.

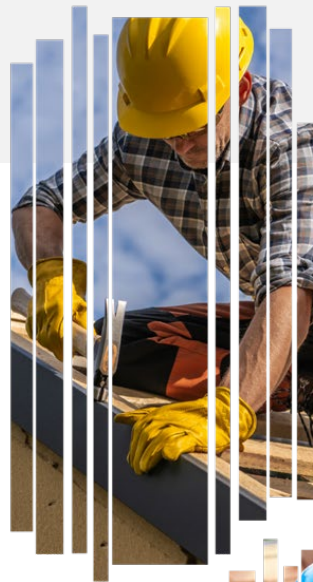
Here are the main skills of a roofer.

Here are the main tasks of a roofer:

- Load and unload construction materials
- Identify and repair leaks, damaged shingles and flashing
- Install new roofs on sloped or flat roofs
- Install sheet metal flashings
- Measure with accuracy so that roofing materials are installed correctly
- Remove old roofing materials and prepare the surface
- Apply waterproof coatings and membranes to flat roofs
- Install insulation for energy efficiency
- Follow safety protocols for working at heights
- Communicate effectively with clients, coworkers and supervisors
- Set up ladders and scaffolding to provide safe access to roofs
- Use hand and power tools correctly and safely
- Operate equipment to hoist materials, such as a ladder hoist, scissor lift or a boom lift

Here are the working conditions:

- Long hours with repetitive movements
- Work outdoors in extreme heat or cold
- Strenuous activities, such as carrying heavy materials, bending, lifting, working on sloped roof
- Work at heights





It's important to understand work-related vocabulary. There may be words on the previous page you don't understand. List them below. Write what you think each word means. You will learn more about these words in this workbook.



Word	What you think it means



Discuss:

1. Have you ever worked as a roofer helper or a construction helper?
2. What were your job duties?



**B**

Write the correct word in each blank. Use the words from the box below.

- |               |             |            |
|---------------|-------------|------------|
| ▪ Communicate | ▪ Load      | ▪ Work     |
| ▪ Use         | ▪ Strenuous | ▪ Identify |
| ▪ Long        | ▪ Unload    | ▪ Outdoors |
| ▪ Follow      | ▪ Install   | ▪ Measure  |



### Roofers:

- \_\_\_\_\_ and \_\_\_\_\_ construction materials
- \_\_\_\_\_ and repair leaks and damaged shingles
- \_\_\_\_\_ new roofs using various materials
- \_\_\_\_\_ with accuracy
- \_\_\_\_\_ safety protocols for working at heights
- \_\_\_\_\_ effectively with clients and coworkers
- \_\_\_\_\_ hand and power tools correctly



### Working conditions:

- \_\_\_\_\_ hours with repetitive movements
- \_\_\_\_\_ in extreme heat or cold
- \_\_\_\_\_ activities, such as carrying heavy loads
- \_\_\_\_\_ at heights

## Unit 2: The Skilled Trades



Roofing is a skilled trade. This unit will explain what a skilled trade is.

In this unit, you will learn about:

- Skilled Trades in Ontario
- Compulsory and Non-Compulsory Trades
- The Skilled Trades Ontario Website

# The Skilled Trades: An Introduction

## What is a skilled trade?

A skilled trade is an occupation that requires special skills that are gained mostly through on-the-job training and experience. There are 144 skilled trades in Ontario. Roofing is one of them.

## What is an apprenticeship?

An apprenticeship is a training program for a skilled trade. It is a combination of on-the-job experience and classroom learning. Each skilled trade has an apprenticeship program.

To be an apprentice, you need a sponsor. A sponsor is usually an employer or skilled tradesperson who makes sure you get the training you need. You and your sponsor sign a training agreement and register it with Skilled Trades Ontario. Skilled Trades Ontario ([www.skilledtradesontario.ca](http://www.skilledtradesontario.ca)) is the organization that oversees the apprenticeship system in Ontario.

Most apprenticeships are 2-5 years long. During that time, you and your employer keep track of your training in an apprenticeship training logbook. Each trade has its own logbook. It outlines all the skills you need for the trade. When you finish the apprenticeship, you receive a Certificate of Apprenticeship from Skills Trades Ontario. Some trades have a licensing exam. When you pass the exam, you receive a Certificate of Qualification.



A

For each term below, find it in the reading and underline it. Then copy the meaning of the term on the line.

1. Skilled trade

---

2. Apprenticeship

---

3. Sponsor

---

4. Skilled Trades Ontario

---

5. Logbook

---

6. Certificate of Apprenticeship

---

7. Certificate of Qualification

---

# Compulsory and Non-Compulsory Trades

## Compulsory Trades

Some trades are “compulsory.” In those trades, you can only work if you are a registered apprentice or have a Certificate of Qualification. There are 23 compulsory trades in Ontario. Some examples are electrician, hairstylist, plumber, and auto body repairer. All compulsory trades have a licensing exam after the apprenticeship is complete. When you pass the exam, you receive a Certificate of Qualification.

## Non-Compulsory Trades

Most skilled trades in Ontario are non-compulsory. That means that you do not *have* to be a registered apprentice to work in the trade. There are 121 non-compulsory trades in Ontario. Some examples are arborist, carpenter, cook, locksmith, drywall finisher and roofer.

For non-compulsory trades, you can become an apprentice and earn a Certificate of Apprenticeship if you want to. However, you do not have to. You can legally work in the trade without an apprenticeship. You can start as a helper and gradually become a skilled tradesperson.



**B** Answer the questions.

- 1. How many compulsory trades are there in Ontario? \_\_\_\_\_
- 2. How many non-compulsory trades are there? \_\_\_\_\_
- 3. List two examples of a non-compulsory trade. \_\_\_\_\_  
\_\_\_\_\_
- 4. Explain the difference between a compulsory trade and a non-compulsory trade.  
\_\_\_\_\_  
\_\_\_\_\_



C Write the correct letter beside each term.

- |  |   |
|--|---|
| 1. _____ Skilled trade                 | A. The number of skilled trades in Ontario  |
| 2. _____ Apprenticeship                | B. You can only work in these trades if you are a registered apprentice or have a certificate of qualification. |
| 3. _____ Compulsory trades             | C. The organization in Ontario that oversees all apprenticeships.   |
| 4. _____ Non-compulsory trades         | D. You receive it when you pass a trade licensing exam. Not all trades have a licensing exam.                   |
| 5. _____ Certificate of Apprenticeship | E. You receive it when you finish an apprenticeship.  |
| 6. _____ Certificate of Qualification  | F. You can work in these trades whether you are an apprentice or not.   |
| 7. _____ Skilled Trades Ontario        | G. An occupation that requires special skills, usually gained through work experience.                          |
| 8. _____ 144                           | H. A training program that combines on-the-job experience with classroom learning to learn a trade.             |

# Skilled Trades Ontario

Skilled Trades Ontario is the organization that oversees all apprenticeships in Ontario. The website includes:

- information about 144 skilled trades
- information about apprenticeship
- an apprenticeship training logbook for each trade



Follow the steps below to find the list of 144 skilled trades.

## STEP 1

- Go to [www.skilledtradesontario.ca](http://www.skilledtradesontario.ca)

### On a phone:

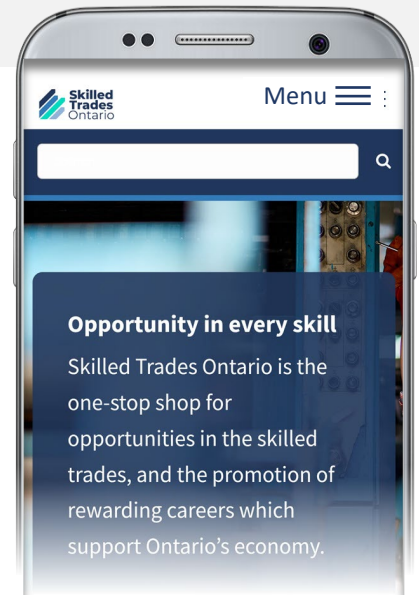
- Tap on the menu (three horizontal lines in the top right corner)
- Tap on Trades Information

### On a computer:

- Hover your cursor over About Trades
- Select Trades Information from the dropdown menu

## STEP 2

- Scroll down to the list of 144 skilled trades.
- Type “roofer” in the trades search bar. Tap on “Search.”
- Scroll down to find the trade information for Roofer (see below).



Copy the information from the webpage onto the chart below.

Trade Name	
Trade Code	
Classification	
Trade Details	<a href="#">View Details →</a>

**STEP 3**

- Tap on **View Details**

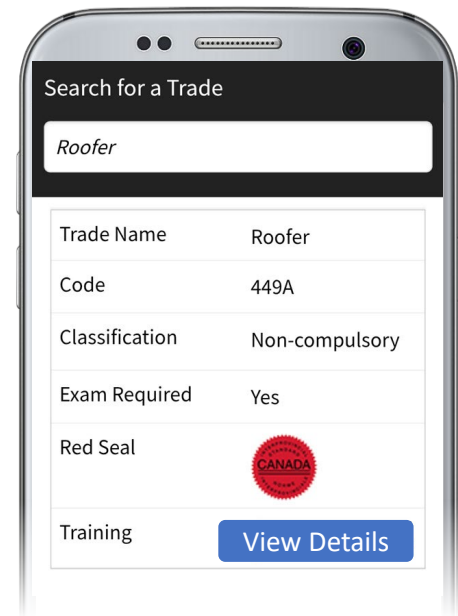
**STEP 4**

- Scroll down.
- Tap **Apprenticeship Training Standard**

The Apprenticeship Logbook for Roofer should be displayed.

The logbook outlines all the training and skills for the trade. The logbook is long. You do not have to read the whole logbook, but it's helpful to know where to find it.

Each of the 144 skilled trades has it's own logbook.



## Unit 3: Roof Basics



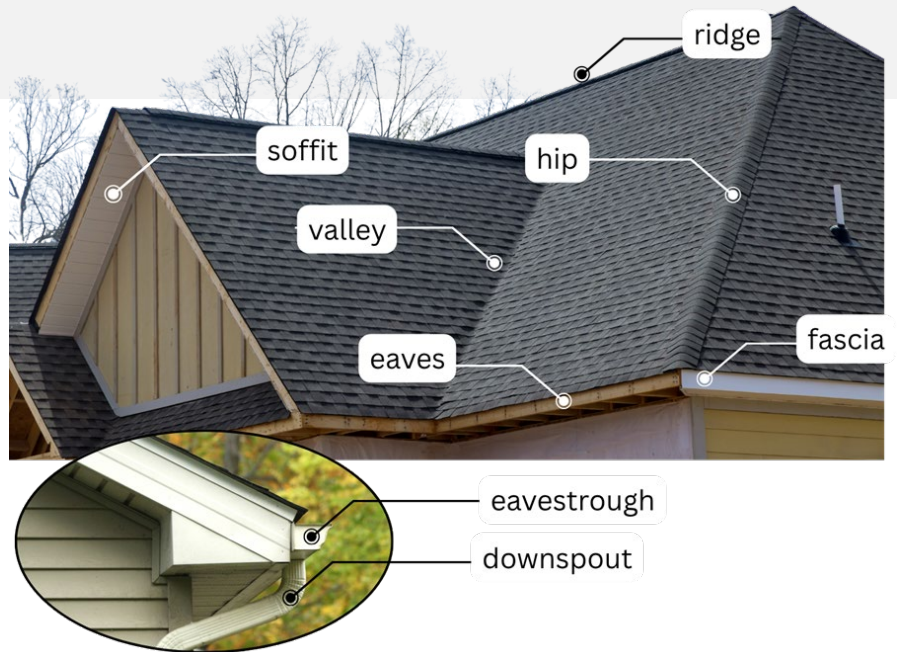
In this unit, you will learn about the basic parts of a roof and the concept of roof pitch. This unit will cover:

- Parts of a Roof
- Parts of a Roofing System
- Roof Systems
- Roof Pitch



## Parts of a Roof

It's important to learn the names for the parts of a roof. This will help you follow instructions and ask questions at work.



### Parts of a Roof

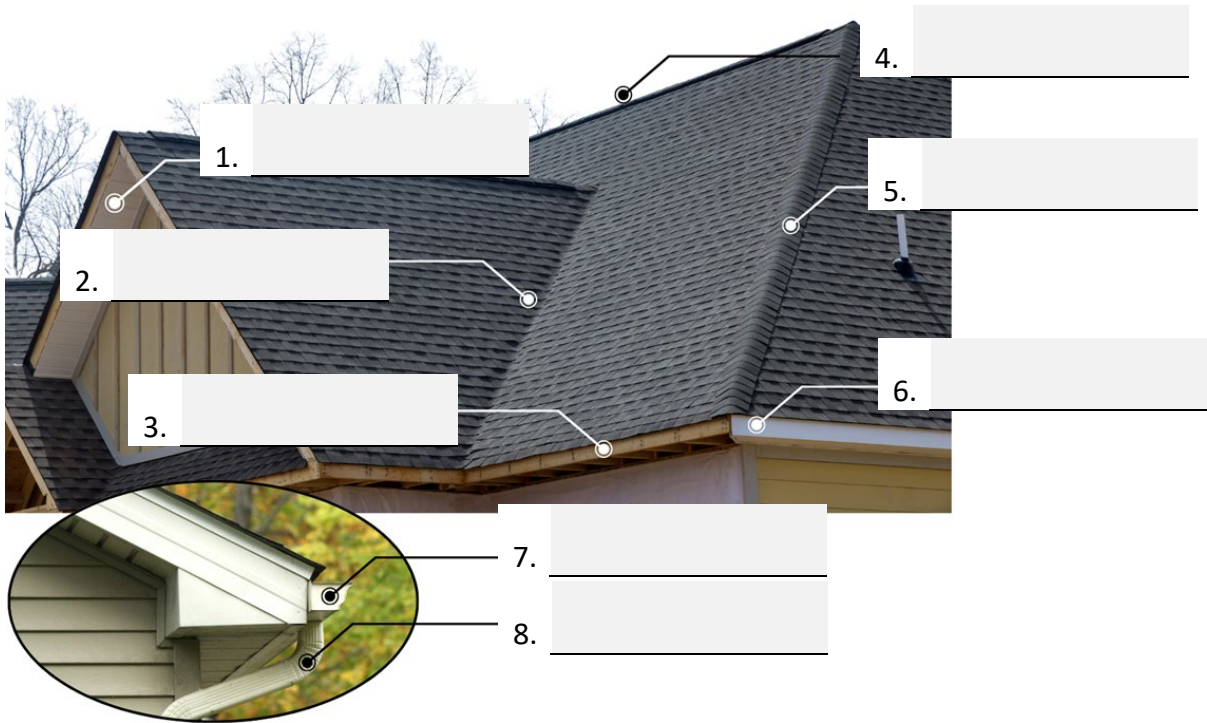
- Shingles:** Pieces that cover the roof and protect it from water. Shingles are made of asphalt, wood, metal, or other materials.
- Roof facet:** A side or surface of a roof. A simple roof may only have two facets.
- Ridge:** The top of the roof, where two sloping roof facets meet. It is always horizontal.
- Hip:** Where two roof facets meet to form a sloping angle. The hip is different from the ridge because the hip is not horizontal.
- Valley:** The low area where two roof sections come together.
- Eaves:** The edges of the roof that hang over the walls.
- Fascia:** Flat vertical board along the edge of the roof. The eavestrough is usually attached to the fascia.
- Soffit:** The underside of the roof overhang. It usually has small vent holes in it.
- Eavestrough:** A gutter along the edge of a roof to collect rainwater.
- Downspout:** A vertical pipe that connects to the eavestroughs. It carries rainwater from the roof to the ground.



A

Write or type the name for each part of a roof. Use the words in the box.

hip ■ eaves ■ ridge ■ soffit ■ valley ■ downspout ■ fascia ■ eavestrough



B

How many roof facets are there? Write or type the correct number each image below.



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



C Select the correct answer.

1. What is the worker measuring?

- ☐ a) the hip
- ☐ b) the ridge
- ☐ c) the valley



2. Where is the worker sitting?

- ☐ a) on the hip
- ☐ b) on the ridge
- ☐ c) in the valley



3. What is the worker installing?

- ☐ a) soffit
- ☐ b) eaves
- ☐ c) fascia



4. What does this roof need?

- ☐ a) ridge
- ☐ b) eavestrough
- ☐ c) fascia



## Roof Basics: Parts of a Roofing System

A roofing system protects the inside of a building from rain, snow, sun and wind. It helps keep the building warm in the winter and cool in the summer. Below are the main parts of a roofing system.

### Rafters:

Rafters are sloped beams that form the structure of a sloped roof.

### Trusses:

They are pre-made triangular frames that form the structure of a roof. They are more common and easier to install than rafters.



### Insulation:

Insulation is material placed between the rafters to help keep the building warm in winter and cool in summer.



### Roof Decking (also called sheathing):

Roof decking is the base layer of the roof. Roof decking is usually made of plywood or OSB. The decking lays over the frame of the house, and roofers install roofing materials on top of it.

- Plywood: Plywood comes in various thicknesses. It is made of thin sheets of wood veneer glued together.
- OSB: Oriented Strand board (OSB) is made from wood strands glued together in layers with the strands in different directions.





## Parts of a Roofing System, *continued*

### **Underlayment:**

The underlayment is a layer of material that goes between the roof deck and the shingles. It gives extra protection from water.

### **Ice and Water Barrier:**

The ice and water barrier is an additional layer of water protection. It usually comes in rolls and is installed on roof parts that are at risk of leaking, such as near the eaves and in roof valleys.



### **Roof Covering:**

The roof covering is the top layer of a roof. In Ontario, most roof coverings are asphalt shingles. They are cost-effective and suitable for the climate. They come in many colours, shapes and sizes.

Other common roofing materials include cedar shakes, clay tiles, and metal roofs.



### **Flashing:**

Flashing is usually made of pieces of sheet metal. It is used to waterproof areas where the roof meets chimneys, vents, skylights, or dormers.





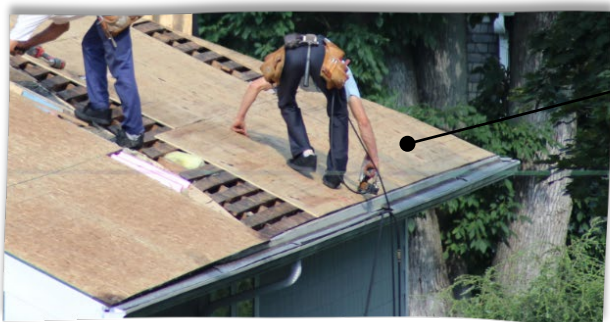
Write or type the name for each part of a roof. Use the words in the box.

flashing ■ decking ■ insulation ■ underlayment ■ shingles ■ rafters



1.

2.



3.



4.

5.



6.

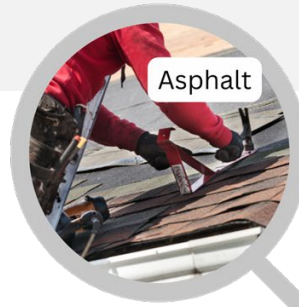
# Roof Systems

## What is a roofing system?

A roofing system refers to all the parts of a roof that make it safe, strong and leak free. There are different roofing systems, but they all include ventilation, insulation, decking or sheathing, underlayment (protection from ice and water), and a covering (such as shingles).

Each roofing system involves different skills. Some roofers are skilled in all roofing systems. Some roofers are skilled in just one system.

- **Asphalt roof system (for pitched roofs):** This is the most common roofing system. It uses asphalt shingles, which are inexpensive and easy to install. They can last from 10-30 years.
- **Metal roof system:** This uses metal panels or tiles, made of steel, aluminium, copper, or zinc. Metal roofs are more expensive than asphalt roofs, but they last longer. They can last for 50 years! They can reduce heating and cooling costs, and are fire-resistant.
- **Flat roofing system:** This system is for roofs that are flat. Flat roofs usually have a very slight slope for water drainage. There are different flat roof systems. A common system is *Modified bitumen*: It usually comes in rolls that are made from asphalt and other materials. It is installed in multiple layers.



Discuss:

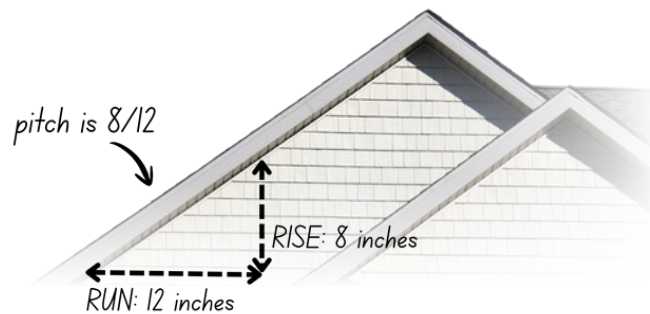
1. What type of roof do you have in the home you live in? Is it flat or sloped?
2. Does it have shingles, metal or another material?

# Roof Pitch

Pitch describes the steepness of a roof. Some roofs are almost flat with a very low pitch, and some roofs are steep with a high pitch. It's important for a roofer to understand pitch.



Pitch is usually written as a fraction. The first number is the “rise.” Rise is the number of inches the roof rises. The second number is the “run” and is always the number 12. It represents 12 inches across. A pitch of 4/12 means the roof goes up (or rises) 4 inches for every 12 inches across.



Roof pitches vary from almost flat, at 1/12, to very steep, at 18/12. For example:

- 1/12 pitch: This roof is almost flat.
- 4/12 pitch: This is the most common pitch of a roof.
- 8/12 pitch: This is a steep roof.
- 12/12 pitch: This is a very steep roof.



## Search the Internet

Type “roof pitch images” in your browser search bar.

roof pitch images



In the search results, you should see charts with different roof pitches.

1. Did the images help you understand roof pitch?
2. How did the images help you?



## Unit 4: Safety at Work



Safety on the job involves being aware of the dangers at work and protecting yourself from those dangers.

In this unit, you will learn about:

- Basic Personal Protective Equipment (PPE)
- Fall Protection
- Asbestos
- Working Outdoors
- Working at Heights
- Workplace Safety: The Law
- Getting Injured on the Job
- Hazard Symbols

# Basic Personal Protective Equipment (PPE)

PPE helps keep you safe on the job.



**Hardhat**

Protects your head from falling objects.



**Safety Glasses**

Protect your eyes from dust or flying metal.



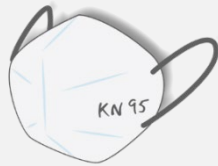
**Steel Toe Boots**

Protect your feet from falling or sharp objects.



**Ear Protection**

Protects your hearing from loud equipment, such as a pneumatic nail gun.



**Dust Mask**

Protects you from inhaling fine dust from silica, wood and roofing materials. N95 masks filter 95% of fine dust.



**Respirator**

Protects you from inhaling fine dust. A respirator offers more protection than a dust mask.



**Knee Pads**

Protect your knees when kneeling for long periods on a roof.



**Gloves**

Protect your hands from cuts, scrapes and punctures from tools and sharp objects.



A

Write the correct letter beside each picture.

1. \_\_\_\_\_



A. Safety Glasses

2. \_\_\_\_\_



B. Steel Toe Boots

C. Respirator

D. Gloves

3. \_\_\_\_\_



E. Hard Hat

F. Dust Mask

G. Ear Protection

4. \_\_\_\_\_



H. Knee Pads

5. \_\_\_\_\_



6. \_\_\_\_\_



7. \_\_\_\_\_



8. \_\_\_\_\_



## Fall Protection: Fall Arrest System

Roofers are at risk of falling. They must wear fall protection equipment and use it correctly to keep them safe on the job.



**Safety harness**

Workers wear a safety harness around their thighs, chest and back. The harness works with a lanyard that connects to an anchor. During a fall, the harness keeps a worker upright.



**Lanyard**

A lanyard is a cable or rope with connectors on each end. One end connects to the safety harness and the other end connects to an anchor.



**Anchor**

An anchor is a secure connection workers attach their lanyard to so that they stay safe. The anchor is often attached to a roof with several nails or screws.



**Scaffolding**

Scaffolding is a temporary structure and platform that supports workers and work materials. Roofers can use the scaffolding an anchor point.



B

Write or type the correct word in each space. Use the words in the box.

scaffolding ■ safety harness ■ anchor point ■ lanyard



1.

2.

3.

4.

# Asbestos

Asbestos is a harmful building material. It was used before the 1990s. It may be in old walls, ceilings, floors or in older roofing materials, such as shingles and felt.

If asbestos is not disturbed, it is safe. But if the walls, ceilings, floors or roofs that contain asbestos are broken apart, asbestos fibres can get into the air. If you breathe in asbestos fibres, you can get serious health problems later, like lung disease or cancer.

It is hard to tell if an older roof contains asbestos. If you are removing old roofing, be very careful. Ask if the roof materials may have asbestos.

In Ontario, there is training for working with asbestos safely. Workers who handle asbestos wear a respirator, protective coveralls, disposable gloves, foot covers, a hat or hood, and eye protection. This protects them from breathing in or coming into contact with asbestos fibres.



Complete the sentences.



Asbestos is safe when

\_\_\_\_\_



Asbestos is harmful when

\_\_\_\_\_



If you inhale asbestos fibres,

\_\_\_\_\_

1. List seven items in the picture.



---

---

---

---

---

---

---

2. List four or more items in the picture.



---

---

---

---

---



## Working Outdoors

Roofers spend many hours working outdoors. In the summer, they are at risk of sunburn, heat exhaustion and heat stroke.

- **Sunburn:** Exposure to the sun's UV rays can cause sunburn and blistering. This can increase the risk of skin cancer.
- **Heat exhaustion:** Heat exhaustion happens when your body overheats. If it is not addressed, it can progress to heat stroke.

Common symptoms include heavy sweating, dizziness, nausea or vomiting, muscle cramps and fatigue. If you have these symptoms, move to a cool place, rest and drink water.

- **Heat stroke:** Heat stroke happens when your body temperature becomes very high. It is a medical emergency. If it is not treated, it can cause brain damage and even death.

Common symptoms of heat stroke include high body temperature, nausea or vomiting, dizziness, hot red skin and an altered mental state (such as confusion, seizures, loss of consciousness). If you have these symptoms, move to a cool place, rest, cool down with water or wet cloths, and call 911.



### TIPS

#### Sun Safety Tips

- Wear long-sleeved shirts and light coloured, loose-fitting, breathable clothing
- Wear a wide-brimmed hat
- Use broad spectrum sunscreen and apply it every 2 hours
- Use sunglasses that block UV rays
- Drink plenty of water throughout the day
- If possible, schedule work during cooler parts of the day
- Take breaks in the shade
- Use a cooling towel or bandana






**A**

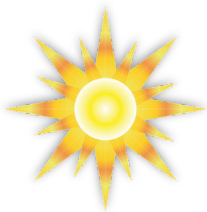
Complete the chart below.

 <b>Heat exhaustion</b>	
Symptoms	What to do:
• _____	
• _____	
• _____	
• _____	
• _____	

 <b>Heat stroke</b>	
Symptoms	What to do:
• _____	
• _____	
• _____	
• _____	
• _____	

**B**

List a few tips for keeping safe while working outdoors in hot weather.



- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

## Working at Heights

Falls are the leading cause of injury or death in the construction industry. Roofers are particularly at risk of falls because they work on roofs, ladders and scaffolding. They work at high heights.

In Ontario, employers must make sure that roofing workers get trained in fall protection. It's the law. This training is called Working at Heights (WAH).

Working at Heights training is usually a one-day training about the dangers of working at heights and how to work safely. The course includes information (theory) and practice with the safety equipment (practical). Workers who complete the training get a certificate that is valid for three years.

Read the flyer below. Then answer the questions on the next page.



WorkRight  
Training Centre

### Working at Heights Training

1-day course: 9-4:30

\$155 | Certificate issued



Our 1-day course covers what you need to know to safely work at heights. You will learn about fall hazards and protection, and get hands-on practice with safety equipment.

#### Theory - 3 hours

- Your rights and responsibilities
- Identifying fall hazards
- Ladder safety
- Barriers and safety nets

#### Practical - 4 hours

- Fall protection systems
- Personal fall protection equipment
- Anchor points
- Ladders and platforms
- Rescuing a worker



Answer the questions about the flyer on the previous page.

1. What is course called? \_\_\_\_\_
2. What time does the course begin and end? \_\_\_\_\_
3. How much does the course cost? \_\_\_\_\_
4. How many hours of the course is theory? \_\_\_\_\_
5. List two topics in the theory part of the course.  
\_\_\_\_\_  
\_\_\_\_\_
6. How many hours of the course is practical? \_\_\_\_\_
7. List two topics in the practical portion of the course.  
\_\_\_\_\_  
\_\_\_\_\_



Discuss with classmates or your teacher:

1. Have you ever taken a Working at Heights course?
2. Are you interested in taking one? Why?
3. What do you think the difference is between the theory part of the course and the practical part of the course?
4. With a partner, search online for a Working at Heights course in your area. Enter the search terms *Working at Heights* and the name of your city. Discuss what you found online.

# Workplace Safety: The Law



In Ontario, the law that covers safety at work is called the *Occupational Health and Safety Act (OHSA)*. It is a set of rules that help to keep workers safe.

The OHSA gives these duties and rights to employers and workers.

## Duties of the employer

- Make sure workers know about dangers in the workplace
- Make sure workers wear the right protective equipment

## Duties of the worker

- Report hazards or dangers in the workplace
- Wear protective equipment

## Rights of the worker

- The right to know about hazards at work
- The right to help keep your workplace safe (you can ask questions about safety and give ideas)
- The right to refuse unsafe work



In the table below, list two duties of employers and two duties of workers.

Duties of employers	Duties of workers
•	•
•	•

## Getting Injured on the Job

If you get hurt on the job, you may be able to get workers' compensation. Workers' compensation means you get paid while you are recovering from a workplace injury.

The pay comes from the Workplace Safety and Insurance Board (WSIB). The WSIB is an Ontario government agency. It provides injury insurance to Ontario employers.

You may be able to get workers' compensation if:

- Your employer is registered with the WSIB. Employers in the construction industry are required to register with WSIB. However, not all of them register.
- Your injury or illness happened at work.

### What to do if you get Injured

- Tell your employer about your injury.
- Get medical help. Go to a doctor or a hospital.
- If you cannot work, fill out a Workers' Report of Injury/Disease (Form 6). Send it to the WSIB.

Your employer also must fill out a form.



Discuss with classmates or your teacher:

5. Have you ever been injured on the job?
6. What happened?
7. Did you need to take time off work?
8. Did you get paid while you were off work?

## Hazard Symbols: Consumer Products

Consumer products are things people buy for personal or household use. Many small roofing businesses use consumer products, such as caulking or other roofing materials. These products may have health warnings or hazard symbols on them.

There are four hazard symbols for consumer products, in two shapes. A triangle shape means the container is hazardous. An octagon shape means the contents are hazardous.



A

Write the correct word beside each symbol. Use the words in the box.

Poison ■ Flammable ■ Explosive ■ Corrosive



\_\_\_\_\_

The product can burn your skin or eyes. If you swallow it, it can damage your throat and stomach.



\_\_\_\_\_

The product or its fumes will catch fire easily if it's near heat, flames or sparks.



\_\_\_\_\_

If you swallow, lick or breathe in the chemical, you can become sick or die.



\_\_\_\_\_

The container can explode if heated or punctured.



B

Look at a few cleaning or construction products in your home. Write details about the hazardous symbols or caution messages.










The first one is done as an example.



Product	Hazard symbols	Caution message
All Weather Sealant	none	Fumes may be harmful. May irritate eyes and skin. Do not breathe fumes. Do not get in eyes or on skin or clothing. Wear safety glasses and rubber gloves.

## Hazard Symbols: WHMIS

Commercial products are things made for work, not for homes. WHMIS is a system for commercial products that helps workers understand their dangers. It stands for Workplace Hazardous Materials Information System. WHMIS information includes labels, information sheets, training, and symbols. Each WHMIS symbol tells us about the danger of a product.

	<b>Flame</b> The product can catch fire easily.
	<b>Flame Over Circle</b> The product is oxidizing. Oxidizing materials make fires hotter.
	<b>Corrosion</b> The product can burn skin or damage eyes.
	<b>Exclamation Mark</b> The product may cause skin or eye irritation.
	<b>Gas Cylinder</b> The product has gas under pressure. It can explode if heated or damaged.
	<b>Biohazardous Infectious Materials</b> The product can cause diseases.
	<b>Environment</b> The product can cause damage to the aquatic environment.
	<b>Exploding Bomb</b> The product can explode.
	<b>Skull and Crossbones</b> The product can be very toxic.
	<b>Health Hazard</b> The product can cause long-term health problems.





Write or type the correct letter beside each picture.

1. \_\_\_\_\_



2. \_\_\_\_\_



3. \_\_\_\_\_



4. \_\_\_\_\_



5. \_\_\_\_\_



6. \_\_\_\_\_



7. \_\_\_\_\_



8. \_\_\_\_\_



9. \_\_\_\_\_



10. \_\_\_\_\_



A. Exploding bomb

B. Gas cylinder

C. Corrosion

D. Skull and Crossbones

E. Flame

F. Health Hazard

G. Exclamation mark

H. Flame over circle

I. Environment

J. Biohazardous Infectious  
Materials

## Unit 5: Roofing Tools



In this unit, you will learn the names of the basic tools roofers use to do their job. You will learn about:

- Hand Tools
- Power Tools
- Roofing Nails
- Measuring Tools

## Roofing Tools: Hand Tools

Roofers use many tools to do their job. The hand tools below are some of the most common tools.



**Utility Knife**

A utility knife has a retractable blade. Roofers use it to cut shingles, sheet metal, and other roofing materials.



**Hammer**

Roofers use a hammer to attach roofing materials. A roofing hammer has a flat blade on one side to remove old shingles or nails.



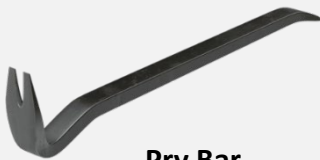
**Tin Snips**

Tin snips are a scissors-like cutting tool. Roofers use it to cut shingles, sheet metal, and other roofing materials.



**Caulking Gun**

A caulking gun holds tubes of caulking. Roofers use this to seal gaps in roofing and prevent leaks.



**Pry Bar**

Roofers use a pry bar to remove old or damaged shingles.



**Roofer's Shovel**

A roofer's shovel looks like a flat shovel with teeth on the end of the blade. Roofers use it to pry off and remove old shingles, underlayment and nails.

## Roofing Tools: Power Tools

Roofers use a variety of power tools. Power tools have a motor that runs on electricity, battery, or air. Air powered tools are also called pneumatic. Below are four common power tools roofers use.



**Reciprocating Saw**

A power tool that roofers use to cut through old roofing, shingles, wood and metal flashing.



**Angle Grinder**

An angle grinder is a handheld power tool with a spinning disc for cutting, or a grinding wheel for grinding surfaces.

Roofers use it to cut metal roofing sheets. They wear goggles, a face mask, gloves and protective clothing to protect from flying sparks or metal fragments.



**Circular Saw**

A circular saw is an electric hand saw with a circular blade.

Roofers often use a cordless circular saw to cut through roofing materials like plywood decking, shingles, and metal.



**Nail Gun**

A power tool that quickly drives nails into materials. Roofers use it to quickly attach shingles to the roof deck.



A Write the correct letter beside each picture.

1. \_\_\_\_\_



2. \_\_\_\_\_



3. \_\_\_\_\_



4. \_\_\_\_\_



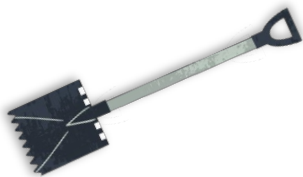
5. \_\_\_\_\_



6. \_\_\_\_\_



7. \_\_\_\_\_



8. \_\_\_\_\_



A. Reciprocating saw

B. Utility knife

C. Caulking gun

D. Roofing hammer

E. Roofer's shovel

F. Nail gun

G. Tin snips

H. Pry bar



B

For each picture, describe what the worker is doing. Include the name of the tool and what the worker is doing with it.

1.



2.



3.



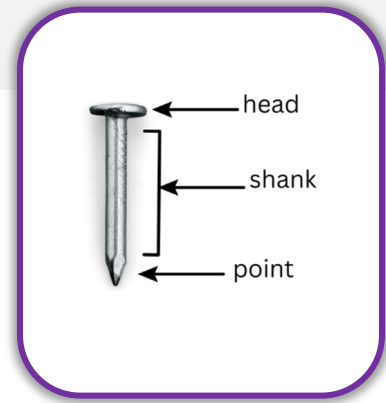
4.





# Roofing Nails

Roofers usually use nails, rather than screws, to attach roofing shingles and materials to the roof deck. Roofers often use a pneumatic nail gun to install roofing materials quickly.



## Nail Parts

A nail has three parts:

- The head: Roofing nails have a wide flat head.
- The shank: The shank is the long part of the nail. There are two types of shank: smooth and ring. Ring shank nails have raised rings along the shank, while smooth shank nails do not.
- The point: Roofing nails usually have a diamond shaped point.

## Nail Size

Nail size refers to its length and diameter.

- Length: Nails come in many lengths. Roofing nails need to be long enough to penetrate the roofing material and the roof deck. They are usually 1 to 2 inches long.
- Diameter (gauge): Diameter is the thickness of the nail shaft. It is described as a number (or gauge size). The larger the number, the **smaller or thinner** the nail. An 18-gauge nail is very thin, and a 4-gauge nail is thick. Roofing nails are usually 10-12 gauge.

## Nail Material

Most roofing nails are steel and are galvanized. That means they are coated with zinc to prevent rusting. There are two methods of galvanization:

- Hot-dip galvanized: Nails are dipped in very hot melted zinc. This completely coats the nails and protects them very well. These nails are good for outdoor construction, like roofing.
- Electro-galvanized: Nails are coated with zinc using electricity. This method gives the nails a thinner coating than the hot-dip method. These nails are good for indoor use.

## Nail Packaging

Nails are packaged in a variety of ways, for example:

- Containers of single nails: Roofing nails come in a variety of container sizes, from small packages of about 100 nails, to larger containers of about 6000 nails.
- Coil nails: Nails are attached into a circular shape by wire or plastic. Each coil has 100-300 nails, with several coils in a box. They are used with nail guns, and are popular in roofing.
- Strip nails: Straight strips of nails, with each strip containing 20-40 nails. They are used for some types of nail guns.



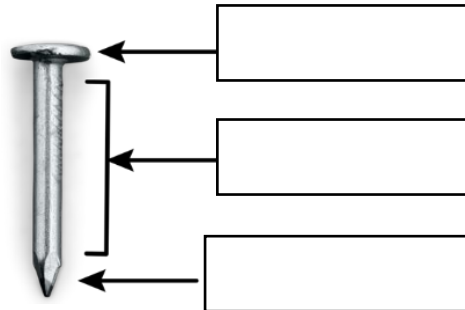
Answer the questions.

1. Choose Pack 1 or Pack 2. Which pack should a roofer use if...



- a) the roofer is using a nail gun ☐ Pack 1 ☐ Pack 2
- b) the roofer needs one-inch nails ☐ Pack 1 ☐ Pack 2
- c) the roofer needs 10-gauge nails ☐ Pack 1 ☐ Pack 2

2. Label the nail with the correct names.



3. Do roofers usually use nails or screws?

\_\_\_\_\_

4. List two types of nail shank.

\_\_\_\_\_

5. Name two parts of nail size.

\_\_\_\_\_

6. What are galvanized nails coated with?

\_\_\_\_\_

7. Which galvanization method is better for roofing work?

\_\_\_\_\_

# Measuring Tools

Measuring tools are essential for roofers. Roofers need to measure roof sections and roofing materials.



**Tape Measure**

A tape measure measures length. It often lists both Imperial and Metric measures. Roofers use a tape measure to measure the dimensions of a roof or roofing materials.



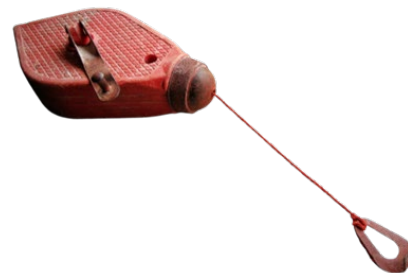
**T-Square**

A T-square is a large ruler shaped like the letter T. Roofers use it to measure and mark angles and roofing materials.



**Level**

A level has small clear tubes filled with liquid and a bubble. When the bubble is in the middle, it means the surface is straight (or level). Roofers use it to check that walls, roof edges, or flashing are in the right position.



**Chalk Line**

A chalk line is a reel of string that is coated with chalk. Roofers use it to mark a straight line. They pull out the string, and snap it against the roof, leaving a visible chalk line. They follow the line to install the shingles evenly.



List four items in the picture.



---

---

---

---



Discuss with classmates or your teacher:

In construction jobs (including roofing), measurements are usually in the imperial system of measurement, which uses inches and feet.

1. Do you understand the Imperial system of length?
2. How confident do you feel about reading a tape measure?
3. How confident do you feel about your understanding of fractions of an inch?

If you need help with reading a tape measure, read the next unit.



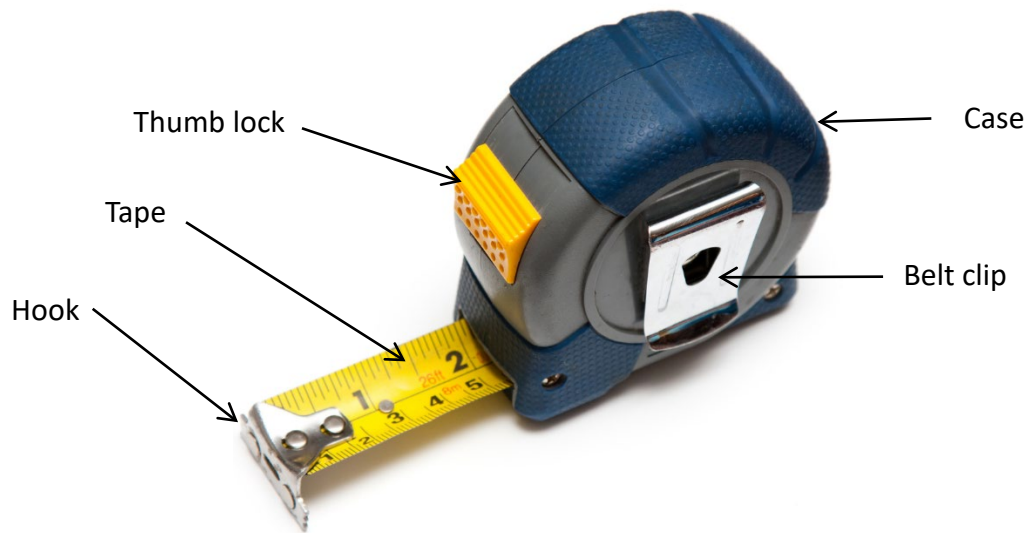
## Unit 6: Reading a Tape Measure



For any job in the construction industry, it is necessary to read a tape measure and understand metric and imperial measures. In this unit, you will learn about:

- Parts of a Tape Measure
- Estimating Lengths in imperial measures
- Reading a Tape Measure in imperial

# The Parts of a Tape Measure



## **Case**

The case is the exterior shell of the tape measure.

## **Thumb Lock**

The thumb lock is a button on the case. When workers extend the tape, they can press the lock button so the tape stays extended. They can release the button to retract the tape back into the case.

## **Belt Clip**

The belt clip is a clip on the side of the case. Workers use it to hang the tape measure onto their belt or pocket.

## **Tape**

The tape is the extendable part of the tape measure. It comes in various lengths, from 6 feet to 30 feet long or longer. The length of the tape is printed on the case. It often includes both imperial and metric measures.

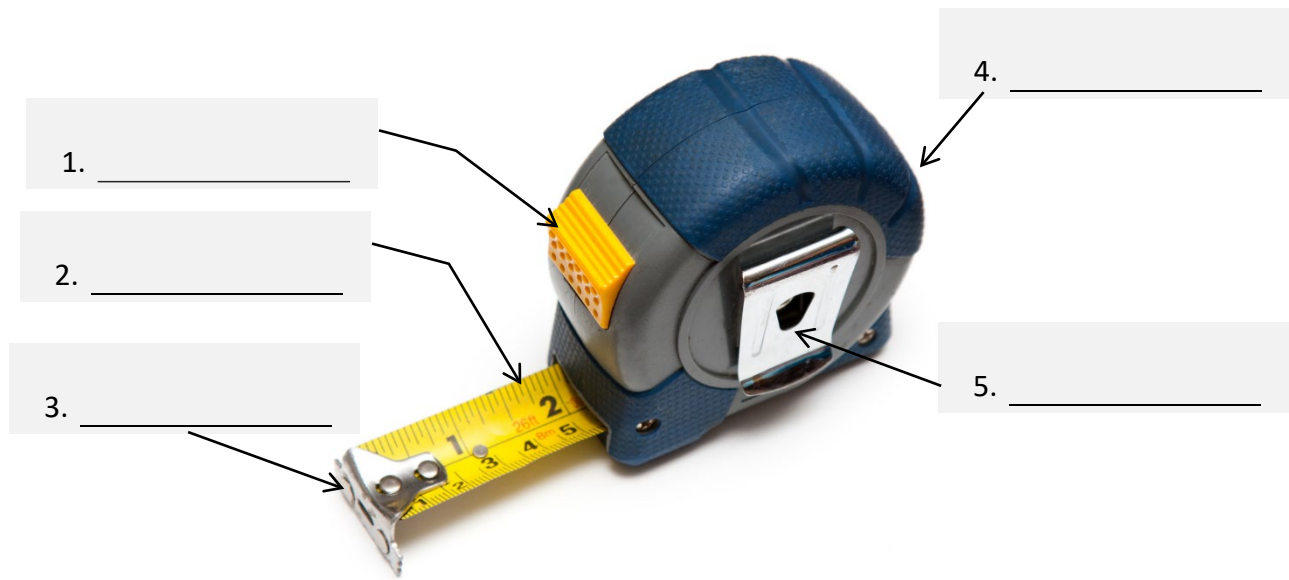
## **Hook**

The hook is on the end of the tape. Workers use it to hook onto the edge of what they measure.





A Write the correct name on each line.



B

The length on each tape measure below is in imperial and metric. The symbol for feet is '. What is the length of each tape? Check the correct answer.

1.



- ☐ a) 25 inches
- ☐ b) 25 feet
- ☐ c) 25 metres

2.



- ☐ a) 16 metres
- ☐ b) 5 metres
- ☐ c) 5 feet

3.



- ☐ a) 2 metres
- ☐ b) 2 feet
- ☐ c) 6 metres

## Estimating Lengths



In the construction industry (which includes roofing), Canada uses imperial measures, rather than metric measures. Roofing nails and materials are usually measured in inches and feet. There are 12 inches in one foot.

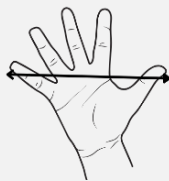
Even if you know how to read a tape measure and measure in inches, it's a good idea to practise estimating measurements. This will help you to estimate lengths on the job.

You can use your own body to estimate inches and feet. For example, an inch is about the width of two fingers. Use a tape measure to measure the following body parts. Knowing these measures will help you estimate other objects at work.



Width of two fingers

\_\_\_\_\_



Hand span

\_\_\_\_\_



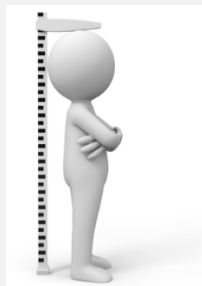
Finger and thumb span

\_\_\_\_\_



Your foot

\_\_\_\_\_



Your height

\_\_\_\_\_



A

Estimate the length of the items below. Check the correct answer.

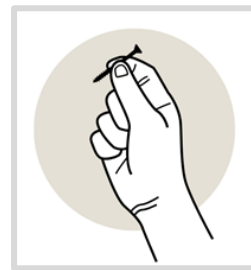
1. Estimate the size of the sheet of plywood.

- ☐ a) 2 feet
- ☐ b) 5 feet
- ☐ c) 12 feet



2. Estimate the length of the nail.

- ☐ a) 6 inches
- ☐ b) 4 inches
- ☐ c) 1 inch



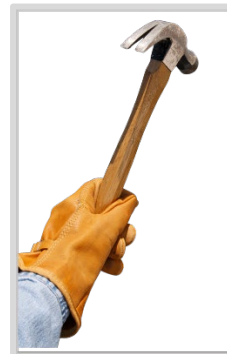
3. Estimate the height of the step ladder.

- ☐ a) 1 ½ feet
- ☐ b) 4 feet
- ☐ c) 6.5 feet



4. Estimate the length of the hammer.

- ☐ a) 14 feet
- ☐ b) 4 inches
- ☐ c) 14 inches



# Reading a Tape Measure: Information on the Tape

## Length of the Tape

The length of the entire tape is printed near the start of the tape, in red print.

## Numbers for Inches and Centimetres

Numbers for each whole inch and centimetre are printed on the tape. The numbers on the top half of the tape are for inches (imperial). The numbers on the bottom half are for centimetres (metric).



- 1. What is the length of the entire tape in imperial? \_\_\_\_\_
- 2. How many inches can you see on the tape above? \_\_\_\_\_
- 3. What is the length of the entire tape in metric? \_\_\_\_\_
- 4. How many cm can you see on the tape above? \_\_\_\_\_

## Numbers for Feet

On the top portion of the tape, each foot is marked in black. There are 12 inches in a foot. At the 12-inch mark, instead of the number 12, it says **1F**.



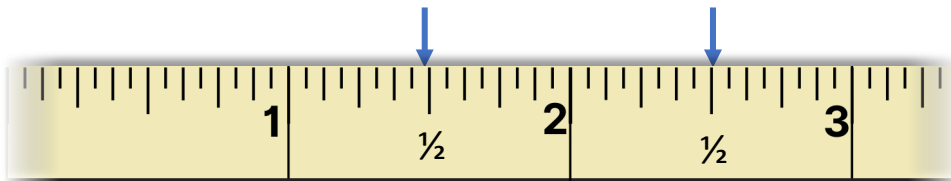
- 1. How many inches are there at the 2F mark? \_\_\_\_\_
- 2. How many inches are there at the 3F mark? \_\_\_\_\_

## Lines Between Each Inch

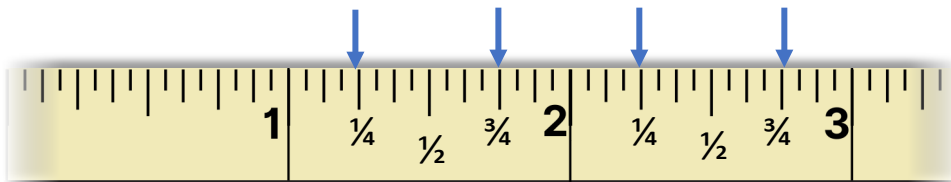
Each inch is divided into 16 parts. The lines between each inch represent fractions of an inch. The lines are different heights.

**Inches** The longest lines are whole inches. They are numbered.

**Halves** The second longest lines are halves of an inch.



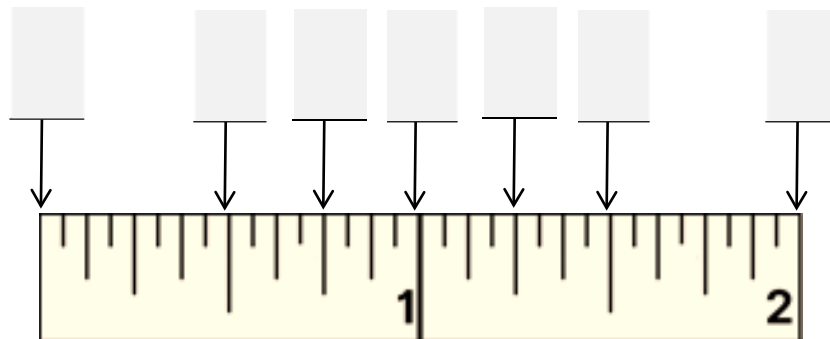
**Quarters** The third longest lines are quarters of an inch.



C

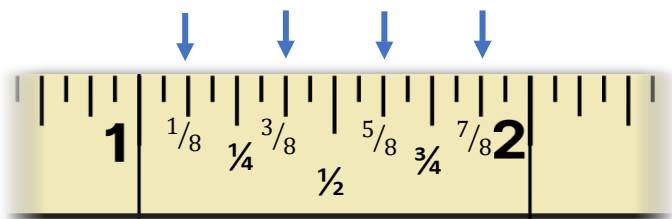
Write the correct number or fraction on each line below. Use the numbers in the box.

$1\frac{1}{4}$  ■ 2 ■  $\frac{1}{2}$  ■  $1\frac{1}{2}$  ■  $\frac{3}{4}$  ■ 1 ■ 0



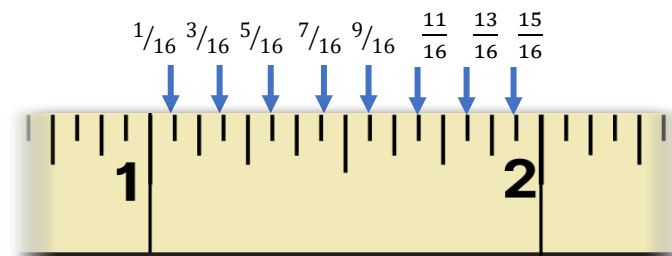
Eighths

The next longest lines are eighths of an inch.



Sixteenths

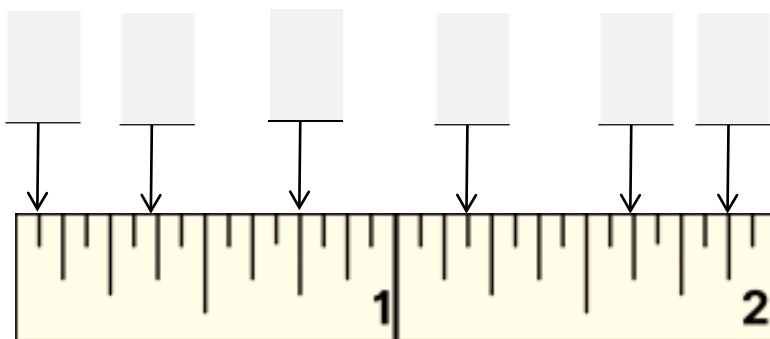
Finally, the shortest lines are sixteenths of an inch.



D

Write the correct fraction on each line. Use the fractions in the box.

$1 \frac{3}{16}$    ■    $1 \frac{7}{8}$    ■    $\frac{1}{16}$    ■    $\frac{3}{8}$    ■    $\frac{3}{4}$    ■    $1 \frac{5}{8}$





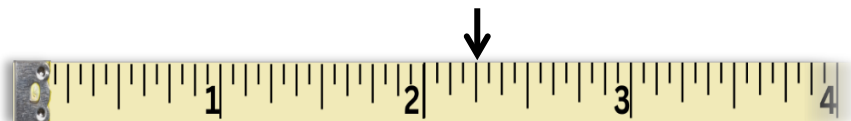
E

For 1-4, check the correct fraction. For 5-7, write the correct fraction.  
There are no sixteenths.

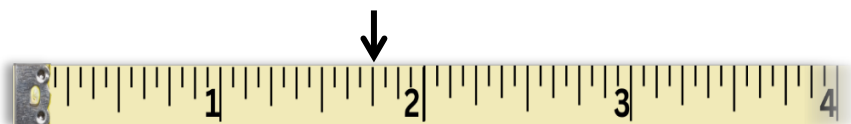
1. ☐ a)  $1\frac{1}{2}$  inches  
☐ b)  $\frac{1}{2}$  inch  
☐ c)  $1\frac{1}{4}$  inches



2. ☐ a)  $2\frac{1}{2}$  inches  
☐ b)  $2\frac{3}{8}$  inches  
☐ c)  $2\frac{1}{4}$  inches



3. ☐ a)  $2\frac{3}{4}$  inches  
☐ b)  $1\frac{3}{4}$  inch  
☐ c)  $1\frac{5}{8}$  inches



4. ☐ a)  $3\frac{5}{8}$   
☐ b)  $3\frac{1}{4}$   
☐ c)  $2\frac{1}{4}$



5. \_\_\_\_\_



6. \_\_\_\_\_



7. \_\_\_\_\_







Look at each tape. Write the correct word from the box on the first line.  
On the second line, write the fractions for each arrow. Refer to pages 53-54 for help.

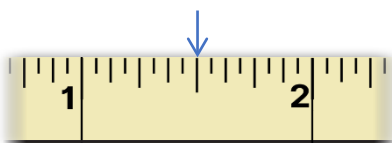
whole numbers ■ eighths ■ halves ■ quarters

1. Whole numbers

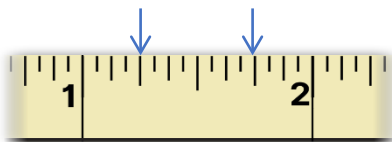
1, 2



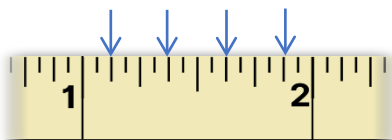
2. \_\_\_\_\_



3. \_\_\_\_\_



4. \_\_\_\_\_





Watch the video **Learn How to Use a Tape Measure.**

[www.youtube.com/watch?v=mKarbrOme\\_Y](http://www.youtube.com/watch?v=mKarbrOme_Y)



1. Did the video help you understand how to read a tape measure? Why?

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2. Search for other videos about how to read a tape measure. In the browser search bar, you can type "How to use a tape measure." Copy the URL for the video you liked best below.

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What did you like about this video?

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## Unit 7: Working



Finding a job in roofing is not easy, especially if you don't have experience. But there are entry-level jobs you can apply for.

When you get a job, it's important to have good communication skills. In this unit, you will learn about:

- Communicating at Work
- Finding Work in Roofing

# Communicating at Work

Good communication is important at work, for many reasons.

- It prevents mistakes and injuries on the job
- It helps you work well with others
- It helps you learn how to do the job well
- It creates a respectful work environment

Here are six tips for communicating at work. Tips 1, 2 and 3 are related to understanding instructions.



1

## Show that you understand

- *Okay, I understand.*
- *Got it. I'll get started right away.*
- *Sounds good.*



2

## Ask questions to get clarification

- *What do you mean?*
- *Can you explain that?*
- *Can you repeat that? I'll take notes so I don't forget.*
- *Can you demonstrate how to do that?*
- *Do you want me to cut the flashing now, or later?*
- *Are these the kind of nails you mean?*
- *I'm not sure I understand. Can you go over that again?*



3

## Repeat instructions in your own words

- *Okay, so you want me to nail down this part first?*
- *You said to get 10-gauge nails, right?*
- *So, you're saying I should arrive at 7 am?*
- *Let me know if I understand correctly. I should ...*





4

### Update others about your work tasks

- *I'm finished unloading the shingles from the truck. What can I do next?*
- *I'm finished cutting the flashing. I'm going to take my lunch break now. I'll be back at 1.*
- *I'm going to start by unloading the truck, then I can help you with the installation.*
- *It's taking longer than expected, but I'll be done by the end of the day.*



5

### Ask for and offer help

- *Can you help me? These shingles are heavy.*
- *Can you show me how to do this?*
- *Can you watch me and tell me if I'm doing it right?*
- *Do you want help with that?*
- *Feel free to use my drill.*
- *I'll give you a hand.*



6

### Be respectful and polite

Greet coworkers:

- *Good morning. Hope you had a nice weekend.*
- *See you tomorrow. Have a nice evening.*

Show appreciation:

- *Thank you.*
- *I appreciate you showing me how to do this.*

Apologize for mistakes:

- *I made a mistake on measuring. I'll need to do it again. I'm sorry about that.*

Notice when others do a good job:

- *Great job. You're a really efficient worker.*





Bill is working as a roofer helper. A supervisor is giving him detailed instructions on his work for the day. Write or discuss examples of what Bill could say for each tip below.



1

Show that you understand

---



2

Ask questions to get clarification

---

---



3

Repeat instructions in your own words

---

---



4

Update others about your work tasks

---



5

Ask for and offer help

---



6

Be respectful and polite

---

## Think About It



Think about your communication skills. Fill out the chart below.

	I do this well.	I need to work on this.
Show that you understand.	<input type="checkbox"/>	<input type="checkbox"/>
Ask questions to get clarification.	<input type="checkbox"/>	<input type="checkbox"/>
Repeat instructions in your own words.	<input type="checkbox"/>	<input type="checkbox"/>
Update others about your work tasks.	<input type="checkbox"/>	<input type="checkbox"/>
Ask for and offer help.	<input type="checkbox"/>	<input type="checkbox"/>
Be respectful and polite.	<input type="checkbox"/>	<input type="checkbox"/>



## Looking a Job

Roofing is a good job. You can earn a good wage if you are skilled at it. There are a lot of jobs available in Ontario, mainly because of these reasons:

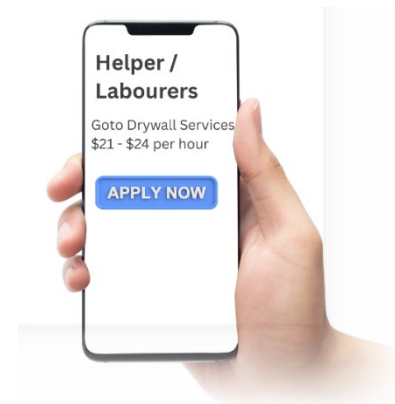
- **Population growth:** Many cities in Ontario are growing, especially Toronto. New houses and buildings are being built. They need roofs.
- **Repairs and replacement:** Roofs last from 10-30 years. During that time, a roof may become damaged from ice, snow, strong winds, or lack of maintenance. Roofs need repair and replacement.
- **Shortage of skilled tradespeople:** There is a shortage of skilled roofers in Ontario.

It can be hard to find a job or become an apprentice if you don't have roofing experience.

It's a good idea to look for work as a roofing or construction *helper* and gain roofing skills on the job. Then when you have experience, you can ask your employer if they will take you on as an apprentice.

Look for jobs with these titles:

- Roofing helper
- Construction labourer
- General labourer



Discuss:

1. Have you ever looked for work as a labourer or construction helper?
2. How did you look for jobs (e.g., talking to friends or family, looking at job ads)?
3. Describe your experience looking for work.



There are many ways to look for work, such as:

- **Job listing websites:** You can look for job postings on job-listing websites, such as Indeed (<https://ca.indeed.com>), the Job Bank ([www.jobbank.gc.ca](http://www.jobbank.gc.ca)) or Monster ([www.monster.ca](http://www.monster.ca)). On the websites, you can search for roofing labourer, shingler, roofer helper, or construction helper jobs.
- **Roofing work sites:** You can go to work sites or roofing companies and talk to a supervisor.
- **Friends and family:** You can ask friends or family if they know of any job openings.

Look at the job ads below. Answer the questions on the next page.

### Job 1

#### Roofer Helpers

RoofMates | \$21-\$27/hr

Apply now

We need reliable, hard-working labourers to join our team. We have been in the roofing business for over fifty years and provide the highest level of service to our customers.

##### Qualifications:

- Roofing or construction experience is an asset, but not required
- Drivers licence is an asset, but not required
- Must have safety equipment (hard hat, steel-toed boots) and own tools
- Must be able to work at heights in all weather conditions
- Must be able to communicate in English
- Working at heights certificate is required
- WHMIS and First Aid Training is an asset

### Job 2

#### Roofing/ Construction Labourer

Quality Work Inc

\$26 an hour | 40+ hrs a week

Apply now

Urgently seeking roofing labourers. The ideal candidate has a strong work ethic. Experience in metal roofing, shingling or flat roofing is an asset, but not required.

##### Must have:

- Ability to lift up to 50 pounds
- Proficiency in using hand tools
- Working at Heights certificate
- Steel-toed boots, hard hat

##### Tasks:

- Assist in heavy lifting and moving materials on job sites
- Job site cleanup
- Assist in install/repair of steel roofing, sloped roofing, flat roofing



A When you are job searching, it's a good idea to keep notes on the jobs you are interested in. Fill out the chart below with details from the job postings on the previous page.

	Job 1	Job 2
Job title →		
Employer →		
Required →		
An asset →		



When you apply for a job, you may need to apply by email. In your email, you can tell the employer why you are good for the job, and attach a resume. Check the items below.

	I can do this.	I need help.
Create a resume	<input type="checkbox"/>	<input type="checkbox"/>
Email an employer about a job ad	<input type="checkbox"/>	<input type="checkbox"/>
Describe why the employer should hire me	<input type="checkbox"/>	<input type="checkbox"/>



B Look at the job ad below. It is for more experienced workers. Answer the questions.

### Roofing Shingler

Roof Master Inc

Pay: \$27-\$35 per hour

Roof Master Ltd needs experienced shinglers, flat roofers, and labourers.

#### Required:

- Knowledge of safe work procedures
- Commitment to quality work
- Knowledge of hand and power tools
- Ability work at heights outdoors in all weather types
- Hard-working and punctual
- At least 1 year experience in roofing

#### Duties:

- Follow safety protocols
- Install roofing systems on sloped and flat roofs
- Measure and cut roofing materials to fit specific dimensions
- Install insulation and vapour barriers as needed
- Install sheet metal flashing
- Erect scaffolding or other platforms
- Ensure roofs are properly sealed and weatherproofed
- Perform heavy lifting and carry materials to job sites

#### Required Certification:

- Working at Heights Certificate
- WHMIS Certificate
- Drivers licence is an asset

1. What is the job title?

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2. What is the name of the company?

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3. How many years of roofing experience are required?

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4. Name two personal qualities the employer is looking for.

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5. What types of roofs will workers install roof systems on?

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6. What certifications are required for this job?

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7. Look at the required qualification. Which ones do you have?

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## Unit 1: Introduction

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### Working in Roofing: An Introduction (p. 3-4)

#### B Roofers

- Load and unload construction materials
- Identify and repair leaks and damaged shingles
- Install new roofs using various materials
- Measure with accuracy
- Follow safety protocols for working at heights
- Communicate Effectively with clients and coworkers
- Use Hand and power tools correctly

#### Working Conditions

- Long hours with repetitive movements
- Outdoors in extreme heat or cold
- Strenuous Activities, such as carrying heavy loads
- Work at heights

## Unit 2: The Skilled Trades

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### The Skilled Trades: An Introduction (p. 7)

- #### A
1. Skilled trade: An occupation that requires special skills gained mostly through on-the-job training and experience
  2. Apprenticeship: A training program for a skilled trade
  3. Sponsor: An employer who makes sure you get the training you need.
  4. Skilled Trades Ontario: Organization that oversees the apprenticeship system in Ontario
  5. Logbook: Outlines all the skills you need for a trade
  6. Certificate of Apprenticeship: A certificate for finishing an apprenticeship
  7. Certificate of Qualification: A certificate for passing a trades licensing exam

### The Skilled Trades: Compulsory and Non-compulsory (p. 8)

- #### B
1. 23
  2. 121
  3. Answers will vary
  4. For compulsory trades, you must be a registered apprentice or have a Certificate of Qualification. For non-compulsory trades, you can legally work without either.

- C
1. G Skilled trade
  2. H Apprenticeship
  3. B Compulsory trades
  4. F Non-compulsory trades
  5. E Certificate of Apprenticeship
  6. D Certificate of Qualification
  7. C Skilled Trades Ontario
  8. A 144

### Skilled Trades Ontario (p. 10-11)

A Trade name: Roofer  
 Code: 449A  
 Classification: Non-compulsory

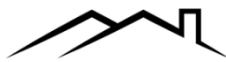
## Unit 3: Roof Basics

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### Parts of a Roof (p. 13-15)

- A
1. soffit
  2. valley
  3. eaves
  4. ridge
  5. hip
  6. fascia
  7. eavestrough
  8. downspout

B



4



6



2

- C
1. b
  2. c
  3. a
  4. b

### Parts of a Roofing System (p. 16-18)

- A
1. Rafters
  2. Insulation
  3. Decking
  4. Shingles
  5. Underlayment
  6. Flashing

## Unit 4: Safety at Work

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### Personal Protective Equipment (p. 22-25)

- A
1. E
  2. G
  3. D
  4. A
  5. B
  6. F
  7. C
  8. H

- B
1. safety harness
  2. lanyard
  3. anchor
  4. scaffolding

### Asbestos (p. 26-27)

- A
- Asbestos is safe when it is not disturbed.
- Asbestos is harmful when the walls, ceilings, floors or roofs are broken apart.
- If you inhale asbestos fibres you can get serious health problems later.

- B
1. gloves, steel toe boots, hard hat, ear protection, dust mask, safety glasses, knee pads
  2. At least four of: respirator, protective coveralls, gloves, hood, foot covers, safety glasses

### Working Outdoors (p. 28-29)

#### A Heat exhaustion

##### Symptoms

- Heavy sweating
- Dizziness
- Nausea or vomiting
- Muscle cramps
- fatigue

##### What to do

*Move to a cool place,  
rest and drink water.*

#### Heat stroke

##### Symptoms

- high body temperature
- nausea or vomiting
- dizziness
- hot red skin
- confusion
- altered mental state

##### What to do

*Move to a cool place,  
rest, cool with water  
and call 911.*



### Working at Heights (p. 30-31)

- A
1. Working at heights
  2. 9-4:30
  3. \$155
  4. 3 hours
  5. Any two of: rights and responsibilities, fall hazards, ladder safety, barriers and safety nets
  6. 4 hours
  7. Any two of: fall protection systems, personal fall protection equipment, anchor points, ladders and platforms, rescuing a worker

### Workplace Safety: The Law (p. 32)

A	Duties of Employers	Duties of Workers
	<ul style="list-style-type: none"><li>• Make sure workers know about dangers at work.</li><li>• Make sure workers wear protective equipment.</li></ul>	<ul style="list-style-type: none"><li>• Report hazards or dangers at work.</li><li>• Wear protective equipment.</li></ul>

### Hazard Symbols (p. 34-37)

A

Corrosive

Flammable

Poison

Explosive

- C
1. E Flame
  2. H Flame over circle
  3. C Corrosion
  4. G Exclamation mark
  5. B Gas cylinder
  6. J Biohazardous infectious materials
  7. I Environment
  8. A Exploding bomb
  9. D Skull and crossbones
  10. F Health hazard

## Unit 5: Roofing Tools

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### Roofing Tools (p. 39-42)

- A
1. C
  2. H
  3. G
  4. F
  5. A

6. B
7. E
8. D

- B**
1. The worker is using a roofer hammer to nail shingles onto the roof decking.
  2. The worker is using a roofer's shovel to remove old shingles.
  3. The worker is using a nail gun to attach shingles to the roof decking.
  4. The worker is using an angle grinder to cut through metal.

#### Roofing Nails (p. 45-46)

- A**
1. a) pack 2  
b) pack 1  
c) pack 1
  2. Head, shaft, point
  3. Nails
  4. Smooth shank, ring shank
  5. Length and diameter
  6. Zinc
  7. Hot dip

#### Measuring Tools (p. 44-45)

- A**
1. Any three of: chalk line, T-square, tape measure, level

### Unit 6: Reading a Tape Measure

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#### The Parts of a Tape Measure (p. 48-49)

- A**
- |               |              |
|---------------|--------------|
| 1. Thumb lock | 4. Case      |
| 2. Tape       | 5. Belt clip |
| 3. Hook       |              |

- B**
1. b
  2. b
  3. a

#### Estimating Lengths (p. 50-51)

- A**
1. b
  2. c
  3. a
  4. c

## Information on the Tape (p. 52-57)

- A
- 16 feet
  - two
  - 5 metres
  - five

- B
- 24
  - 36

- C
- |   |               |               |   |                |                |   |
|---|---------------|---------------|---|----------------|----------------|---|
| 0 | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|---|---------------|---------------|---|----------------|----------------|---|

- D
- |                |               |               |                 |                |                |
|----------------|---------------|---------------|-----------------|----------------|----------------|
| $\frac{1}{16}$ | $\frac{3}{8}$ | $\frac{3}{4}$ | $1\frac{3}{16}$ | $1\frac{5}{8}$ | $1\frac{7}{8}$ |
|----------------|---------------|---------------|-----------------|----------------|----------------|

- E
- A
  - C
  - B
  - B
  - $1\frac{1}{8}$
  - $1\frac{1}{4}$
  - $2\frac{5}{8}$

- F
- whole numbers  
1, 2
  - halves  
 $1\frac{1}{2}$
  - quarters  
 $1\frac{1}{4}$ ,  $1\frac{3}{4}$
  - eighths  
 $1\frac{1}{8}$ ,  $1\frac{3}{8}$ ,  $1\frac{5}{8}$ ,  $1\frac{7}{8}$

## Unit 7: Working

### Looking for a Job (p. 63-66)

A	Job 1		Job 2	
	Job title:	Roofer Helper	Roofing/Construction Labourer	
	Employer:	Roof Mates	Quality Work Inc	
	Required:	<ul style="list-style-type: none"> <li>- Safety equipment</li> <li>- Own tools</li> <li>- Able to work at heights in all weather conditions</li> <li>- Communicate in English</li> </ul>	<ul style="list-style-type: none"> <li>- Ability to lift up to 50 pounds</li> <li>- Proficiency using hand tools</li> <li>- Working at Heights certificate</li> <li>- Steel-toed boots, hard hat</li> </ul>	

An asset:	- Working at heights certificate	
	- Roofing or construction experience - Drivers licence - WHMIS and First - Aid training	- Experience in metal roofing, shingling or flat roofing

B

1. Roofing shingler
2. Roof Master Inc
3. 1 year or more
4. Any two of: hard-working, punctual, commitment to quality work
5. Sloped and flat roofs
6. Working at Heights, WHMIS
7. Answers will vary.

# OALCF Alignment



This information is for practitioners who work with adult learners in Ontario Literacy and Basic Skills programs. It outlines how this workbook is aligned with the Ontario Adult Literacy Curriculum Framework (OALCF).

This workbook is relevant to learners with the goal paths of Employment or Apprenticeship, with a particular interest in roofing work. It is aligned to the following OALCF competencies:

## Competency A – Find and Use Information

- A1: Read Continuous Text (level 1, 2)
- A2: Interpret documents (level 1)
- A3: Extract Information from films, broadcasts and presentations

## Competency B – Communicate Ideas and Information

- B1: Interact with Others (level 1)
- B2: Write Continuous text (level 1)

## Competency C – Understand and use Numbers

- C3: Use measures (level 1)

## Competency D – Use Digital Technology (level 1, 2)

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### Task based Learning

Many of the learning activities in this workbook are skill-building in nature, designed to help learners recall understand what they are reading. However, learners can complete various tasks to demonstrate and apply their learning in real life contexts. For example:

- Task related to Competency A3 and Competency D:
  - Locate a short video related to a topic in this workbook; view the video and describe something you learned from it.
- Task related to Competency A1:
  - Read a job ad for a roofer or roofer helper. Identify key details in the ad and determine whether you meet the qualifications.
- Task related to Competency A2:
  - Read the hazard symbols on a product and determine how to safely work with it.
- Task related to Competency B1 and B2:
  - Approach or write to an employer to ask if there are jobs available; describe your skills and why you would be good for the job.