Essential Skills for Life

Numeracy
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Canada

Activate Learning is funded in part by the Government of Canada’s Adult Learning, Literacy and Essential Skills Program.
Welcome to *Essential Skills for Life*!

This program helps you build nine essential skills for the workplace and for life:

- Reading
- Writing
- Document use
- Numeracy
- Digital technology
- Thinking
- Oral communication
- Working with others
- Continuous learning

These skills are used in nearly every job and in daily life. They also allow us to learn new skills and to adapt to changes. Improving your essential skills can help you to build a good life for yourself.

**This workshop**

This workshop deals with the skill of **numeracy**, which means being able to understand and work with numbers.

We use numbers and math every day, like when we count up our overtime hours at work, go shopping, plan a holiday, or make a monthly budget.

In this workshop, we will talk about how and why we use numbers, and learn about how we can improve our numeracy skills.
What is numeracy?

We sometimes think of **numeracy** as a skill that only some people use. But basic math and numeracy skills are used by everyone.

**Numeracy** is the ability to understand and work with numbers. We use our numeracy skills when we practice math.

Our confidence and ability to work with numbers can affect how we handle money, shop, and do parts of many jobs. This skill can even affect our health and well-being.

Sometimes we can use calculators and apps to do math for us. But it’s still important to have a good understanding of what numbers mean and how they work.

**Why is numeracy important?**

Numeracy helps us with so many parts of our lives.

For example, we can use our numeracy skills to:

- solve different kinds of problems
- understand our personal finances
- read and understand instructions
- build and fix things
- develop thinking and logic skills

Numeracy skills can make our lives easier, and help us with many activities that we do at work and at home.
Numeracy in daily life

Here are some examples of how we use **numeracy** skills in everyday life:

- When we measure the doorway to make sure a new couch will fit through it
- When we count the coins we need for bus fare
- When we make a schedule for our time at work
- When we manage our medications and calculate a dosage

**Activity**

Remember, we use our numeracy skills whenever we work with numbers. Work with a group to figure out how you might use numeracy skills in these situations:

<table>
<thead>
<tr>
<th>Planning your weekly run</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Following and understanding a basketball game</td>
<td></td>
</tr>
<tr>
<td>Filling out your time sheet at work</td>
<td></td>
</tr>
<tr>
<td>Cooking a meal</td>
<td></td>
</tr>
<tr>
<td>Buying a used car</td>
<td></td>
</tr>
</tbody>
</table>
Numeracy and you

Activity
What does having good numeracy skills look like? What does it feel like?

Write your ideas below.

• How do your numeracy skills compare to what you wrote on your list?

• Is it important for everyone to have the exact same numeracy skills? Why, or why not?

• What would you be able to do—that you can’t do now—if you could improve your numeracy skills?

Ask yourself...

Think about what you wrote above.

• How do your numeracy skills compare to what you wrote on your list?

• Is it important for everyone to have the exact same numeracy skills? Why, or why not?

• What would you be able to do—that you can’t do now—if you could improve your numeracy skills?
Self-assessment

How are your **numeracy** skills? An honest assessment will help you to understand your strengths. It will also help you decide what you’d like to work on.

- I’m pretty good at math. I can add, subtract, multiply, divide, use a calculator, and use other numeracy skills when I need to.

- I’m good at everyday math. Things like measuring and counting are not so hard. But I find it hard to do more complicated calculations.

- I’m not very good at doing math in my head. But I can do simple math with the help of a calculator or app.

- Math is really hard for me. I only do it when I have to.

- Even thinking about working with numbers makes me anxious.

- None of the above. Here’s my situation:

  __________________________________________

  __________________________________________

  __________________________________________
What makes numeracy hard?

Is **numeracy** hard for you? If so, you’re not alone. Many people find tasks that involve numeracy difficult.

**Meet Aki**

Aki has never liked math. When he was younger, his teacher yelled at him in front of his classmates after he made a mistake on his times tables. He remembers feeling ashamed. Ever since, he’s tried to avoid using his math skills.

Part of what makes numeracy hard is that some people have negative feelings about it. People who have had bad experiences with math can develop **math anxiety**.

**Math anxiety** is when math makes you feel uncomfortable, nervous, or scared. If you avoid using your numeracy skills, you might have math anxiety.

People with math anxiety feel stressed about working with numbers. Sometimes they feel hopeless, like there’s nothing they can do to get better at it. But everyone can improve their math and numeracy skills.

**Let’s talk about it**

Math anxiety is just like any other fear. It takes effort and hard work, but you can overcome it.

- What advice would you give someone trying to conquer a fear?
- Could that same advice work for math anxiety?
Let’s look at some other things that make numeracy hard:

- **Math is basically another language.** There are so many different terms to know. If we don’t understand them, it becomes very hard to use our numeracy skills. It takes time to learn the language of math, but if you’re patient, you can do it.

- **We all move at different paces.** Some people understand numeracy easily and can learn quickly. Many people who learn numeracy at a slower pace fall behind in school, and they never have a chance to catch up. But slower learners can still have strong numeracy skills.

- **In most cases, math doesn’t have grey areas.** You’re either right, or you’re wrong. Most of us don’t like being wrong, and that’s one reason we might avoid or struggle with math. But being wrong isn’t a bad thing. Making mistakes is part of learning.

Ask yourself...

Think about your experiences with numeracy.

- Have you ever struggled with any of these parts of numeracy?
- Can you think of anything else that makes numeracy hard for you?

An important part of improving your numeracy skills is understanding what makes it hard for you. Once you know what challenges you’re facing, you can make a plan to overcome them.
In this workshop, we will look at four kinds of **numeracy** that we use in everyday life:

- Measuring
- Estimating
- Managing money
- Analyzing data

Some people can do all of these things well. Others are good at some types of numeracy, but not others. You might be very good at measurement, but not so good at managing money. It’s normal to have strengths and weaknesses.

We all have different lives, and some numeracy skills might be more important to us than others. For example, you might realize that being good at estimating is more important in your life than analyzing data. We’re all different, and that’s ok. The important thing is that you develop the numeracy skills that you need for your own life.
Measuring

We use measurement every day. Weighing tomatoes in a grocery store, measuring the length of a fence, and checking the temperature outside are all examples of measurement.

Measurement is the process of checking the size or amount of something. We can measure many things, including size, weight, distance, time, temperature, and speed.

Why do we measure?

Measurement helps us answer questions like:

- How big?
- How heavy?
- How hot?
- How far?
- How much?
- How fast?

When we measure, we can also use what we’ve learned to compare two or more options. For example, if you’re shopping for a dresser, you might measure each dresser you like so that you know how much space it will take up in your room, then pick the one that works best.

Let’s talk about it

Think about the measurements below:

1. The speed of a car on the highway
2. The number of eggs needed for a recipe
3. The amount of time it takes to get ready for work

With your group, discuss:

- Why is it important for us to be able to measure these things?
- What could happen if we measured any of these things incorrectly?
How do we measure?

The process of measuring something might seem complicated, but following these steps can make it easier.

**Step 1:** Decide what you’re measuring

**Step 2:** Figure out what *unit of measurement* to use

**Step 3:** Choose the tool you’ll use to measure

A *unit of measurement* is a standard term that we use to explain an amount. For example, a kilometer is a unit of measurement that explains distance.

Here are some of the different types of *measurement* we use. Look at the units of measurement and the tools we can use for each one.

<table>
<thead>
<tr>
<th>Type of measurement</th>
<th>Example</th>
<th>Unit of measurement</th>
<th>Tool for measuring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (height, width, depth)</td>
<td>Furniture, walls, gardens, doorways</td>
<td>Centimetres, meters, inches, feet</td>
<td>Measuring tape, ruler</td>
</tr>
<tr>
<td>Weight</td>
<td>Fruit, meat, our bodies</td>
<td>Milligrams, grams, pounds</td>
<td>Scale</td>
</tr>
<tr>
<td>Distance</td>
<td>Driving routes, walking routes</td>
<td>Metres, kilometres, feet, yards, miles</td>
<td>Odometer, pedometer</td>
</tr>
<tr>
<td>Speed</td>
<td>Car, boat, airplane, runner</td>
<td>Kilometres per hour, miles per hour</td>
<td>Speedometer</td>
</tr>
<tr>
<td>Amount</td>
<td>Water, milk, rice, flour, laundry detergent</td>
<td>Millilitres, litres, pint, gallons</td>
<td>Measuring cup, teaspoon</td>
</tr>
<tr>
<td>Temperature</td>
<td>Oven, weather outside, body temperature</td>
<td>Degrees</td>
<td>Thermometer</td>
</tr>
</tbody>
</table>
Often, our tools do the measuring for us. For example, your speedometer tells you exactly how fast you’re driving your car. A measuring tape will show you how tall you are. But for some more complicated types of **measurement**, you’ll need to use a calculation. There are different calculations that you can use depending on what you’re measuring. Here are a few common ones:

**Area:**
You calculate the area when you need to know the size of a surface. For example, if you need to know how much carpet to buy to cover your bedroom floor, you calculate the area.

**To calculate the area, multiply length by width** *(length × width)*

**Perimeter:**
You calculate the perimeter when you need to know how long the outside edge of a surface is. For example, if you need to know how much fence to buy to go around your backyard, you calculate the perimeter of your backyard.

**To calculate perimeter, add up the length of each side** *(side 1 + side 2 + side 3 + side 4)*
Meet Shanice

Shanice is a landscaper. She’s working on a garden for one of her clients. She wants to protect it by wrapping chicken wire around the outside edge.

She already knows how big the garden will be. But she isn’t sure how much chicken wire she needs to buy to surround it. Have a look at what she’s done so far:

Activity

Work with a partner or a group to help Shanice with this task.

- What is Shanice measuring?
- What **unit of measurement** is she using?
- What tool can she bring to the store to measure the chicken wire?
- What calculation can Shanice use to find out exactly how much chicken wire she needs?
- How much chicken wire does she need?
- Why was **measurement** important here? How could measurement be helpful to you in your life?
We estimate almost every day. It’s a helpful skill that can make our lives easier.

**Skill Words**

Estimating means making a guess to get an answer that is almost correct.

Here are some things we estimate.

- Time: How long does it take me to finish a task at work?
- Money: How much money do I need for weekly groceries?
- Size: What size pants do I need to buy for my child?
- Amounts: How many socks do I need for my camping trip?

**Why do we estimate?**

Estimating is a quick way for us to get a pretty good answer without spending a lot of time figuring out the exact answer. Imagine you’re grocery shopping for a family dinner. It would be hard to figure out exactly how much food you need, but you can make a good guess.

**Activity**

Estimation is a useful tool, but it’s not always appropriate. Sometimes we need to know the exact answer.

Work with a partner to decide whether it makes sense to estimate these things:

- How much insulin your mother needs
- The temperature outside
- How much milk you should put in your coffee
- How much money you owe to your landlord for rent and utilities

How can we know when we should use estimation, and when it would be better to figure out the actual amount?
How do we estimate?

There is no right or wrong way to estimate. Everyone does it a bit differently, and the amount of time you spend estimating might depend on the situation. But here are a few tricks you can use to improve your estimating skills.

- Use information you already know. If you’re estimating how long it takes you to walk to the bus stop, think about how long it’s taken you in the past.
- Break down bigger tasks into smaller ones. If you want to estimate how much wood you need to build a shed, think about how much wood you need for the walls, the foundation, and the doorframe.
- Use rounding. Rounding is one way to make numbers easier to work with. If you’re trying to figure out how much your dinner bill will be, round the cost of your drink, meal, and dessert to make it easier to add them up.

**Rule for rounding**

When rounding numbers, look at the last digit of a number.

- If the last digit is less than 5, round down. For example, you would round 172 down to 170
- If the last digit is 5 or more, round up. For example, you would round 179 up to 180

**Skill Words**

Rounding means changing a complicated number to make it simpler, while keeping it close to the actual amount.

A digit is any single number from 0 to 9. In the number 692, the digits are 6, 9, and 2.
Meet Leon
Leon is a house painter. He just got a call from a client asking him to paint three bedrooms in their house.

Before Leon says yes, he needs to know:

• How much paint does he need to buy?
• How long will the job take?
• How much should he charge for the paint job?

Let’s talk about it
Estimating can make Leon’s job easier.

• What information does Leon already know that could help him to find these answers?

• How could Leon make this task easier by breaking this big task into smaller ones?

• How could Leon use rounding to make the numbers easier to work with?

• Why is estimating helpful for planning this job? Why do you think Leon chose to estimate instead of figuring out exact amounts?

• How could you use estimation in your life? What about at work?
Managing money

We use money almost every day. Each time we deal with money, whether it’s at home or at work, we’re using **money math**.

**Skill Words**

Money math is just what it sounds like: math and **numeracy** skills that involve money.

Why do we do money math?

Money is a part of our everyday lives. Being able to do money math is important because it helps us manage our money and make smart financial decisions. When we are able to manage our money, life can be a little easier.

How do we do money math?

Using money math can be complicated because there are many ways to do it. For example, you could estimate to figure out how much money to bring for lunch. You could use addition to double check that a bill is correct. Or you could use measurement to compare the cost of two insurance plans. You might also use subtraction, division, multiplication, fractions, or percentages.

**Numeracy Tip**

You don't have to manage your money without help. Remember that calculators can be helpful for more complicated kinds of money math. There are also apps, websites, and programs that can help you.
Meet Lila

Lila works as a taxi driver. Here are some of the ways she uses money math at work and at home:

• Telling a customer roughly how much she thinks a trip will cost
• Paying her credit card bill
• Making change for a customer who has paid in cash
• Figuring out how much she spent on groceries last month
• Splitting a bill between two customers
• Comparing the cost of two different gym memberships
• Making a monthly budget for herself
• Figuring out how much she can expect to get as a tip on a ride
• Doing her taxes

Lila has many different reasons to use money math. Can you see how she uses different types of math for each of these activities?

Ask yourself...

Money math is a part of our daily lives.

• How do you use money math in your life?
• Are some types of money math easier or harder for you than others?
Money math can also help you make a plan for spending or saving.

Lila is planning a road trip to see a concert. She wants to get an idea of what the trip will cost, so she’s making a list of all of the expenses she knows she will have.

An expense is something that you spend money on.

Activity

Work with your group to help Lila figure out the cost of her road trip:

- Estimate the cost of each expense
- Calculate how much each expense will cost
- Add up the total cost of the trip

<table>
<thead>
<tr>
<th>Expense</th>
<th>Quantity</th>
<th>Cost per expense</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>4 tanks</td>
<td>$________ / tank of gas</td>
<td>$</td>
</tr>
<tr>
<td>Hotel</td>
<td>3 nights</td>
<td>$________ / night</td>
<td>$</td>
</tr>
<tr>
<td>Meals and snacks</td>
<td>4 days</td>
<td>$________ / day</td>
<td>$</td>
</tr>
<tr>
<td>Concert ticket</td>
<td>1 ticket</td>
<td>$________ / ticket</td>
<td>$</td>
</tr>
<tr>
<td><strong>Total cost of road trip</strong></td>
<td></td>
<td></td>
<td><strong>$</strong></td>
</tr>
</tbody>
</table>

Now that she has an idea of how much the trip will cost, Lila needs to make a plan to save up enough money. The trip is 6 months away. How much should she plan to save each month?

Your answer: ____________________________
Was that activity hard or stressful for you? For some people, money math makes them more anxious than other types of numeracy.

Meet Ciaran

Ciaran works as a nanny. He has a few clients, but he only works when his clients need him. Since he doesn’t have regular work hours, he’s never sure of how much money he can expect to make in any week. He gets really stressed out when he has to deal with money. Sometimes it’s easier to just avoid dealing with it altogether.

Let’s talk about it

Money math is a very useful skill, but it’s also one that some people avoid.

- Why do you think that some people find money math more stressful than other types of numeracy?
- What problems might come up if you avoid using money math?
- How can we deal with stress about money math?

Tips for dealing with money math stress

- Remember that you have options. When you need to make a purchase, compare costs and choose the option that’s right for you.

- Create a monthly budget or spending plan based off your income and expenses. When you have a plan for how you’ll spend your money, making financial decisions can be easier.

- Schedule a weekly check in on your bank account. Ask yourself if you’re staying on track, or if you need to make adjustments.

- Ask for help when you need it. Try booking an appointment with your bank if you have questions, or reach out to someone you trust.
Analyzing Data

Usually when we use our numeracy skills, we get our answer by doing a calculation to find a number. But sometimes numbers can’t tell us the answer on their own. Sometimes, we need to spend time thinking about the numbers to understand what they mean. We do that by analyzing data.

Analyzing data means looking at information and thinking about it. Then you can use that information to answer questions and make decisions.

Why do we analyze data?

Analyzing data helps us use information to answer questions, find patterns, and explain things. Here are some ways you might analyze data in everyday life:

- Thinking about your diet to figure out which foods are giving you heartburn
- Trying to figure out why your child can’t sleep at night
- Looking through your bills to figure why your hydro bill is higher in some months than others
- Comparing your pay stubs to figure out why you’ve been paid less or more than you expected

Let’s talk about it

Analyzing data can take up a lot of time. Sometimes, we might want to just trust the numbers. But if we do that, we might miss something important.

- Can you think of times in your life when it would be helpful to analyze data?
- When would you be less likely to spend time analyzing data?
How do we analyze data?

Here are some steps to take when you’re analyzing data.

**Step 1:** Figure out what questions you have and what answers you’re looking for.

**Step 2:** Gather information. Research and collect facts, numbers, statistics, or advice.

**Step 3:** Compare the different types of information you have. Decide which ones you think are the best, and which ones you want to ignore.

**Step 4:** Use what you’ve learned to answer your questions.

When you're analyzing data, think about your priorities. Priorities are the things most important to you. If your priorities are different than someone else’s, you might analyze the same data, but have different answers. That’s ok. Different things are important to different people.

Meet Hubert

Hubert needs a new cell phone plan. He wants to get the plan that’s the best value. He looks up plans from different companies on the internet. For each plan he’s considering, he wants to know:

- The monthly cost of the plan
- How many talking minutes he gets
- How much internet data he gets
- The reputation of the company that offers the plan
Hubert has gathered all of the information that he needs to make his decision. Work with your group to help Hubert choose a plan. Here’s what he found out about his options:

<table>
<thead>
<tr>
<th>Plan</th>
<th>Monthly cost of plan</th>
<th>Number of talking minutes</th>
<th>Amount of internet data</th>
<th>Company’s reputation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan A</td>
<td>$35</td>
<td>50</td>
<td>1 GB</td>
<td>Customers say that this company isn’t very reliable. Hubert found a lot of complaints online.</td>
</tr>
<tr>
<td>Plan B</td>
<td>$45</td>
<td>180</td>
<td>3 GB</td>
<td>Customers say that this company is average. There are some issues, but they are generally helpful and offer good service.</td>
</tr>
<tr>
<td>Plan C</td>
<td>$55</td>
<td>150</td>
<td>4 GB</td>
<td>Customers say that this company is reliable and trusted.</td>
</tr>
</tbody>
</table>

Let’s talk about it
Now that you’ve chosen a plan for Hubert, let’s talk about how you made your decision.

- Which plan did you choose? Why did you choose this plan over the others?
- Did everyone in your group have the same answer? Why, or why not?
- Why is it important to analyze data in this situation, instead of just going with the company that Hubert knows best?
- Sometimes, after we analyze, we might still have questions. Who could help you find your answers at home? What about at work?
Putting it all together

Some jobs or activities may require only one numeracy skill. But often we use two or more at the same time. For example, hair stylists use each of these skills at work. They might:

• Measure the length of hair to cut
• Estimate how much shampoo is needed for a wash
• Manage money to keep track of payments from clients
• Analyze data to figure out which days are the busiest at the salon

How could a delivery person use each skill? How could a parent use each skill? How do you use each skill?

Ask yourself...

Think about your own numeracy skills.

• Which numeracy skills are the most important for you at home?
• Which are most important at work?
• Which numeracy skills do you want to focus on improving?
Building numeracy skills

Meet Saul

Lots of people think Saul is pretty smart. He can fix anything and he knows about a lot of things. But his numeracy skills are not as strong as they used to be. In fact, his skills have slipped since he left high school. But Saul wants to get a new job, one that requires more numeracy skills than he has right now.

Saul feels stuck. He doesn’t know how to improve his numeracy skills, and he’s afraid to ask for help. He doesn’t want people to think he isn’t smart.

Let’s talk about it

Saul’s in a tough situation, but it’s actually a very common one.

- Why might someone be afraid to ask for help with their numeracy skills?
- If Saul was your friend, and he asked you for advice, how would that make you feel? Would it change your opinion of him?
- If you were Saul, what would you do to improve your numeracy skills?
It’s never too late to improve your numeracy skills. It won’t always be fun, but it will be helpful in your life and at work. It can be useful to remember:

- Just like any skill, the more you practice, the better you’ll get. Try to find ways to practice math in your daily life.

- It’s not a race, and there’s no prize for being the fastest. Be patient with yourself.

- Without a good base, it can be hard to improve your numeracy skills. Start with the basics, and build your way up.

- Everyone is different. We all have different skills, different needs, and different feelings about numeracy. Try not to compare yourself to others. Focus on yourself, your skills, and your needs.

### Find the help you need

Many people need extra support to develop their skills. Consider some of these options:

- Google it. If you’re stuck on a math problem, you can probably find answers online. The internet is full of math resources that can help.

- Find a local organization that can help. The Newfoundland and Labrador Laubach Literacy Council (NLLLC) offers tutoring. It pairs learners with volunteer tutors. You can learn more here: [https://nlllc.ca/](https://nlllc.ca/)

- Consider going back to the classroom. Many classes can help people develop their skills. You can learn more here: [https://www.gov.nl.ca/aesl/adult-literacy/abe/abe-serviceproviders/](https://www.gov.nl.ca/aesl/adult-literacy/abe/abe-serviceproviders/)
Congratulations!

You’ve completed the Essential Skills for Life Numeracy workbook. You’ve taken a step in building the essential skills that will help you in work and in life.

What did you learn about your numeracy skills? Think about your knowledge, attitude, and skill level. What would you like to improve?

For the last activity, we hope you will choose 1 or 2 numeracy goals and **pledge** to get started on them this week.

A **pledge** is a serious promise to yourself or to others.

The pledge can be personal, or you can share it with others.

**My pledge**

I pledge to work on my numeracy skills by:

________________________________________

Sometimes a pledge needs an action plan: a list of steps you’ll take to make your pledge happen.

**My action plan**

What do I need to do first?

________________________________________

Who will support me?

________________________________________

How will I overcome setbacks and obstacles?

________________________________________