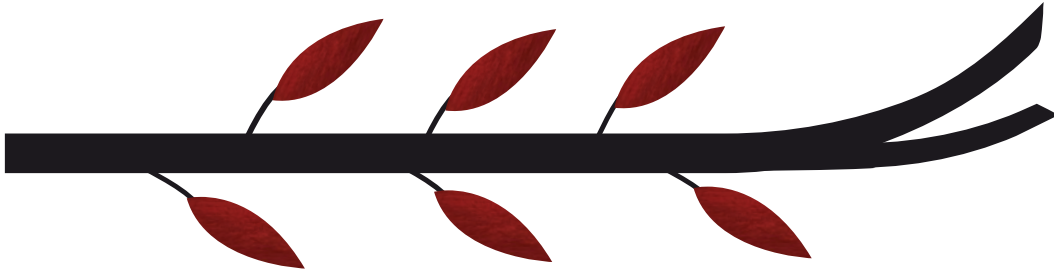# Assessor's Booklet: Numeracy Level 2

This Assessor's Booklet is divided into <u>two</u> parts.

Part One includes:

- Assessor's instructions for administering the Numeracy Level 2: Client Assessment Booklet.

Part Two includes:

- An introduction and detailed instructions for the client on the assessment process;
- Answers and explanations for each assessment task; and
- A section for the assessor to record a client's assessment results and observations.

Candidate's Name: _____

Date of Assessment: _____

Assessment Location: _____

Assessor's Name: _____

Assessor's Instructions

Please ensure that you have read the accompanying Guide for Conducting an Essential Skills Needs Assessment prior to administering any of the assessment booklets. The Guide provides a step-by-step process for conducting an informal Essential Skills needs assessment, including useful tips and suggestions.

This is an informal assessment tool that is intended to support career and employment counsellors to work with clients to help them better understand their **numeracy** skills strengths and areas that may require improvement. The assessment results will support making more informed decisions on developing training plans and performing job searches. In situations where formal test scores are needed to be compared to other test results or job skill requirements, the use of formal assessment tools may be more suitable.

➤ Each assessment question in this booklet is a typical workplace task that shows how numeracy skills are used in different jobs in Canada.

➤ The questions are organized in order of difficulty starting with simple tasks and progressing to more difficult ones.

➤ You may read the assessment instructions out loud and provide further explanation if required. It is important to encourage clients to complete as many tasks as they can independently so that a more accurate understanding of their abilities can be understood. Once the client has completed as many numeracy tasks as possible on their own, you can assist them with the remaining tasks.

➤ In cases where clients have difficulty with reading and comprehension, you can read the questions out loud and clarify any words or terminology that may be unfamiliar to them.

➤ Clients are permitted to use a calculator to complete the numeracy tasks in the Numeracy Level 2 booklet.

➤ Clients should be encouraged to use the space following each question to show how they arrived at the answer and to write down notes. Ensure that you have additional paper available should clients need it.

➤ Clients are permitted to ask questions at anytime during the assessment.

➤ If clients have difficulty completing any of the tasks, suggest that they move on to the next task and return to it later.

➤ Inform clients that you will review all the tasks and answers together once they have completed the assessment.

While there is only one correct answer for each task, it is important to recognize that there may be more than one method of arriving at the right answer.

Use the Results and Observations section following each assessment task to:
- record results;
- identify the numeracy skills demonstrated; and
- document any difficulties the client had in completing the tasks, such as using the wrong mathematical operation (e.g. using multiplication instead of division).

> The Essential Skills Needs Assessment Summary Table included at the end of this booklet can be used to record all the results in one place and allows you to re-use the booklet for other clients.

If clients do not successfully complete **7** of the **10** tasks, you should discuss what action they would like take to improve their numeracy skills as part of a training plan or job search (e.g. take a course to upgrade their estimation skills).
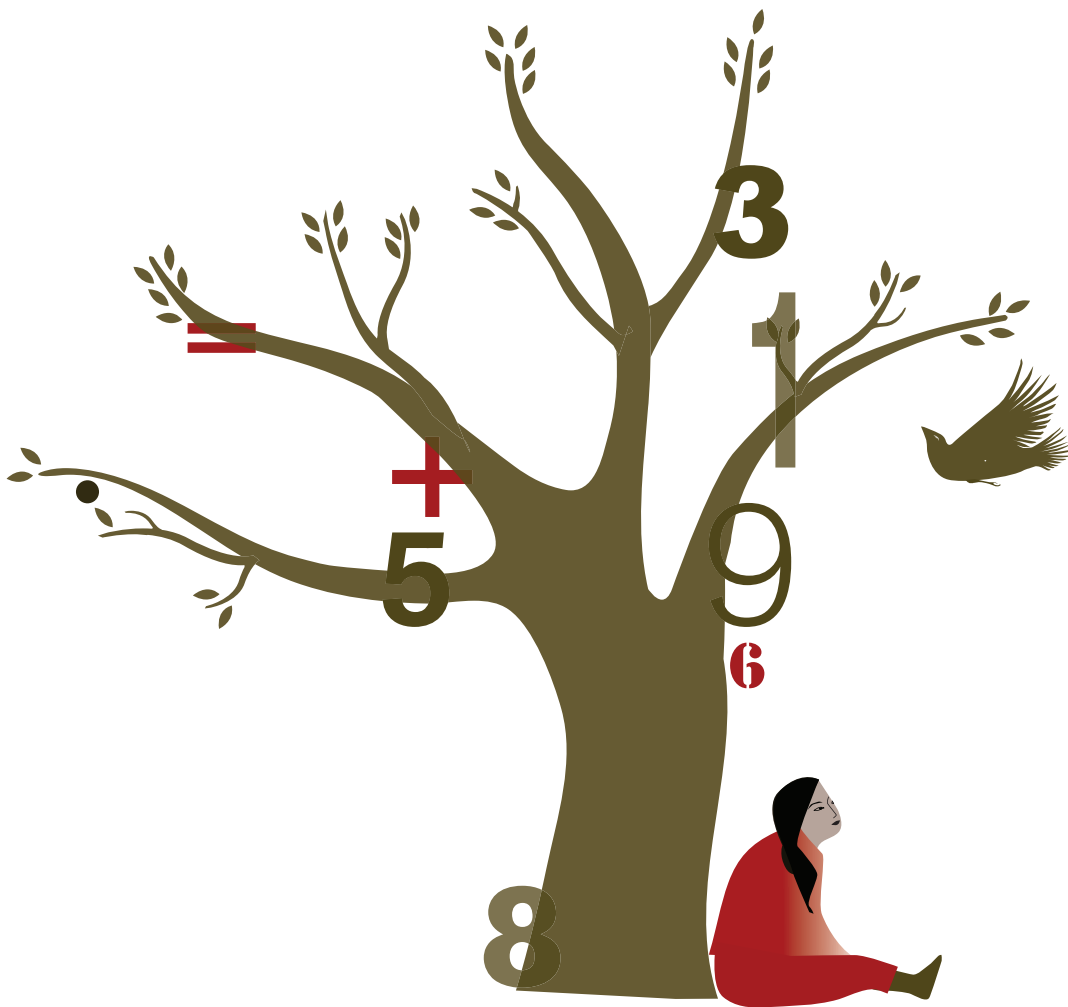
Client Introduction *(as it appears in the Numeracy Level 2: Client Booklet)*

Numeracy is the ability to use and understand numbers. Numeracy skills are important to be able to manage money and carry out transactions such as paying for a purchase or paying your bills. Numeracy skills are also used to measure and estimate, such as ingredients in a recipe or the size of a room.

You are about to complete a needs assessment for **Numeracy, Level 2**. This is not a test – it is an opportunity to help identify your numeracy skills strengths and areas you may want to consider improving. This information will help you to make decisions about job skills training and job searches.

Client Instructions *(as it appears in the Numeracy Level 2: Client Booklet)*

1. You will have an assessor present with you (i.e. an employment or career counsellors) while you complete the assessment. **Feel free to ask your assessor questions at any time.**

2. Each assessment question in this booklet describes a typical workplace task that shows how numeracy skills are used in different jobs in Canada.

3. Space is provided after each question if you would like to write down any notes. You are encouraged to use it to show how you arrived at your answer. If the space provided in the booklet is not enough, your assessor can provide you with additional paper. As displayed in the box below, you can write your final answer in the space provided, or you can circle the answer in your notes.

Answer: 8

$2 + 4 = 6$

$$\begin{array}{r} 6 \\ \times\ 3 \\ \hline 18 \end{array}$$

$18 - 10 = \boxed{8}$

4. You can use a calculator to complete the questions in Numeracy Level 2.

A tip: When you're on the job, using a calculator saves time. Become familiar with your calculator so that you can use all of its features.

5. If you have difficulty answering a question, you can move on to the next task and return to it later.

6. Take your time to complete the questions – there is no set time limit.
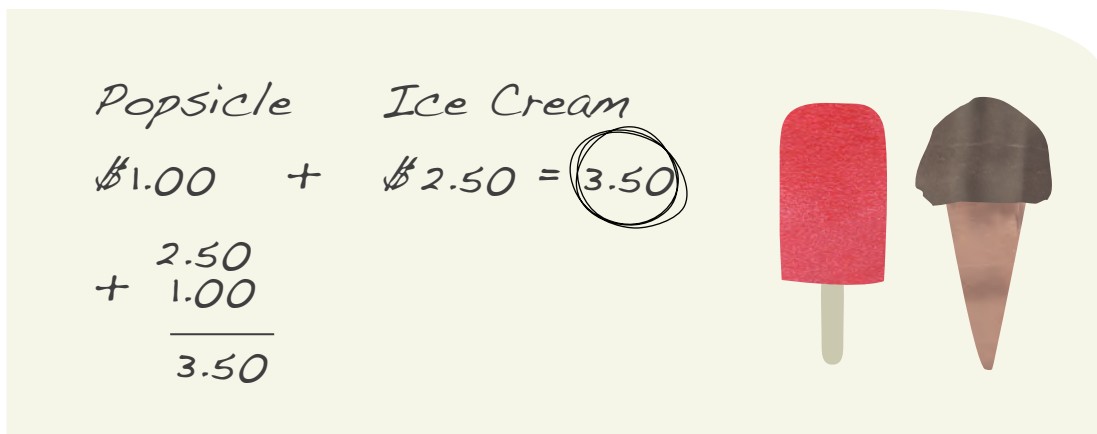
7. You can take a break at any point during the assessment. You can also choose to stop the assessment and have the option to re-schedule for another time.

8. Once you have completed all the questions, or as many questions as you can, your assessor will review them with you.

Here is a <u>sample</u> question to help familiarize you with the assessment format:

A snack bar worker is selling frozen treats. A customer buys one popsicle for $1.00 and one ice cream cone for $2.50. What is the customer's total bill?

Answer: $3.50

A cashier is calculating a customer's bill. The bill subtotal is $300.00 and an additional 5% sales tax must be added. What is the total amount of the customer's bill including the 5% sales tax?

Answer:

Answer Discussion:
Step 1:
First convert the sales tax percentage to a decimal.

To convert a percentage to a decimal, remove the '%' sign and divide by 100: 5 / 100 = 0.05

Step 2:
To calculate the total tax, multiply the decimal by the subtotal.
Multiply 0.05 by 300.00
$300 x 0.05 = 15

The total tax is $15.

Step 3:
To calculate the total amount of the customer's bill, add the subtotal and the total tax.
$300.00 + $15.00 = $315.00

Answer = $315.00

Results and Observations Section:

Numeracy Task	Simple operation that is not clearly specified Two types of mathematical operations Few steps of calculation required
Occupation	NOC 6611 – Cashiers
Numeracy Skill(s)	Money Math: □ Converts sales tax percentage to a decimal □ Multiplies sales tax rate by subtotal □ Adds total sales tax to subtotal to calculate total
Did the client successfully complete the task?	□ Yes □ No □ Did not attempt □ Required assistance Comments:
Additional Observations	

A hotel front desk clerk needs to convert United States (US) dollars into Canadian (CDN) dollars. The clerk consults the daily exchange rate below:

$1 US = $1.03 CDN

Based on the exchange rate above, what would be the total amount of Canadian dollars if you convert $78 US dollars?

Answer:

Answer Discussion:
To calculate the amount in Canadian dollars:

multiply the exchange rate by the amount of US dollars.
1.03 x $78 = $80.34

Results and Observations Section:

Numeracy Task	Simple operation that is not clearly specified
Occupation	NOC 6435 – Hotel Front Desk Clerks
Numeracy Skill(s)	Money Math: □ Multiply rate of exchange
Did the client successfully complete the task?	□ Yes □ No □ Did not attempt □ Required assistance Comments:
Additional Observations	

A construction helper needs to calculate the volume of a concrete slab. The slab is 125 centimetres long, 60 centimetres wide and 10 centimetres high. Calculate the volume of the slab in cubic centimetres (cm³).

Width = 60cm   Height = 10cm

Length = 125cm
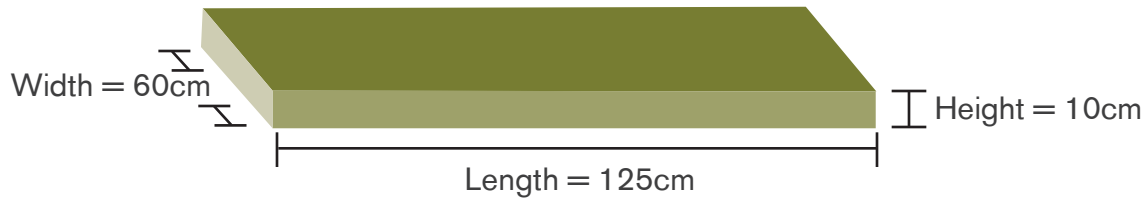
Answer:

Answer Discussion:
To calculate the volume, multiply the length (L) by the width (W) by the height (H).

Formula: L x W x H = Volume
125 x 60 x 10 = 75,000

The volume of the slab is 75,000 cubic centimetres.

Results and Observations Section:

Numeracy Task	Simple operation (formula specified) One type of mathematical operation (multiplication) Few steps of calculation required
Occupation	NOC 7611 – Construction Trades Helpers and Labourers
Numeracy Skill(s)	Measurement and Calculation Math: □ calculates volume by multiplying dimensions (formula given)
Did the client successfully complete the task?	□ Yes □ No □ Did not attempt □ Required assistance Comments:
Additional Observations	

A front desk clerk needs to calculate the average rate for a hotel room. Below are the rates for each room:

Room Rates

Room 101	$145.00
Room 105	$ 80.00
Room 106	$ 95.00
Room 107	$ 90.00
Room 206	$125.00
Room 209	$140.00

What is the average rate per room?

Answer: $112.50

Answer Discussion:
To calculate the average, add all of the rates together then divide by the number of rooms.

Formula: Average room rate = $\dfrac{\text{all individual rates added together}}{\text{number of rooms}}$

Average room rate = $\dfrac{\$145.00 + \$80.00 + \$95.00 + \$90.00 + \$125.00 + \$140.00}{6}$

Average room rate = $112.50

Results and Observations Section:

Numeracy Task	Simple operation that is not clearly specified Two types of mathematical operations Few steps of calculation required
Occupation	NOC 6435 – Hotel Front Desk Clerks
Numeracy Skill(s)	Data Analysis Math: □ Adds all room rates □ Divides the sum by the number of rooms to calculate average rate
Did the client successfully complete the task?	□ Yes □ No □ Did not attempt □ Required assistance Comments:
Additional Observations	

Question 5:

A customer asks a butcher for "three pounds of beef." If a pound is 0.4536 kilograms, what is the weight of the beef in kilograms?

Answer: ▮▮▮▮ kilograms (kg)

Answer Discussion:
Formula:
To convert pounds to kilograms, multiply the weight in pounds by the 0.4536 (conversion factor):

3 (lbs) x 0.4536 (conversion factor for kilograms) = 1.3608 kilograms (kg)

or

Add the equivalent of 3 pounds together, in kilograms.

```
      0.4536 kg (or 1 pound)
      0.4536 kg (or 1 pound)
+     0.4536 kg (or 1 pound)
=     1.3608 kg (or 3 pounds)
```

Results and Observations Section:

Numeracy Task	Simple operation that is not clearly specified
Occupation	NOC 6251 – Butchers, Meat Cutters and Fishmongers
Numeracy Skill(s)	Measurement and Calculation Math: □ converts weight in pounds to weight in kilograms
Did the client successfully complete the task?	□ Yes □ No □ Did not attempt □ Required assistance Comments:
Additional Observations	

A kitchen helper is making cookies using the following recipe:

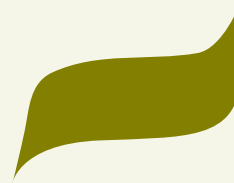**Grandma Maggie's Scrumptious Sugar Cookies**

Preparation Time: 15 minutes
Baking time: 25 minutes
Yields: 40 servings/cookies

Ingredients:
2 cups all-purpose flour
1 teaspoon baking soda
1/2 teaspoon baking powder
1 cup butter, softened
1 1/2 cups white sugar
2 eggs
1/4 teaspoon vanilla extract

If the kitchen helper only wants to make 20 cookies, how much sugar is needed?

Answer: ¾ cup white sugar

Answer Discussion:
The recipe needs to be decreased proportionally – this means that the ingredients have to be reduced in equal amounts as they relate to each other.

Step 1
To calculate the proportion:
divide the new number of servings (20) by the old number of servings (40)
$20/40 = ½$

Step 2
To calculate the new proportions, each ingredient will have to be multiplied by ½.

Original proportions	How to calculate	New proportions
1 ½ cups white sugar	Convert 1 ½ to a fraction: $1 = ²/₂$ $²/₂ + ½ = ³/₂ = 1½$ Then multiple by ½ : $³/₂ \times ½ = ¾$ or $\underline{3 \times 1} = 3$ $ 2 \times 2 \quad 4$	¾ cup white sugar

Results and Observations Section:

Numeracy Task	Simple operation that is not clearly specified One or two types of mathematical operations Few steps of calculation required
Occupation	NOC 6641 - Food Counter Attendants, Kitchen Helpers and Related Occupations
Numeracy Skill(s)	Measurement and Calculation Math: □ Divides original serving amount by adjusted serving amount to determine the proportion for the new recipe □ Multiplies or divides the amounts in the old recipe for the new recipe □ Divides or multiplies fractions
Did the client successfully complete the task?	□ Yes □ No □ Did not attempt □ Required assistance Comments:
Additional Observations	

A worker in a fish processing plant needs to calculate the total time required to clean a fish conveyor. The worker began cleaning the conveyor at 11:30 a.m. and finished at 1:25 p.m.

11:30

1:25

a.m.

p.m.

How long did it take the worker to clean the conveyor? Provide your answer in hours and minutes.

Answer: ▮ hour and ▮ minutes

Answer Discussion:
There are many ways to arrive at the answer - Here is one example:

There are 60 minutes in an hour.

11:30 to 12:30 = 1 hour (or 60 minutes)
12:30 to   1:30 = 1 hour (or 60 minutes)

The worker finished at 1:25 (or five minutes less than a full hour)

Therefore:
12:30 to 1:25 = 55 minutes (or 1 hour, minus 5 minutes)

Final Calculation:
11:30 to 12:30   =   1 hour (or 60 minutes)
12:30 to   1:25   =   55 minutes
Total hours worked: 1 hour and 55 minutes

Results and Observations Section:

Numeracy Task	Simple operation that is not clearly specified One type of mathematical operation Few steps of calculation required
Occupation	NOC 9618 – Labourers in Fish Processing
Numeracy Skill(s)	Measurement and Calculation Math: □ Calculates time duration
Did the client successfully complete the task?	□ Yes □ No □ Did not attempt □ Required assistance Comments:
Additional Observations	
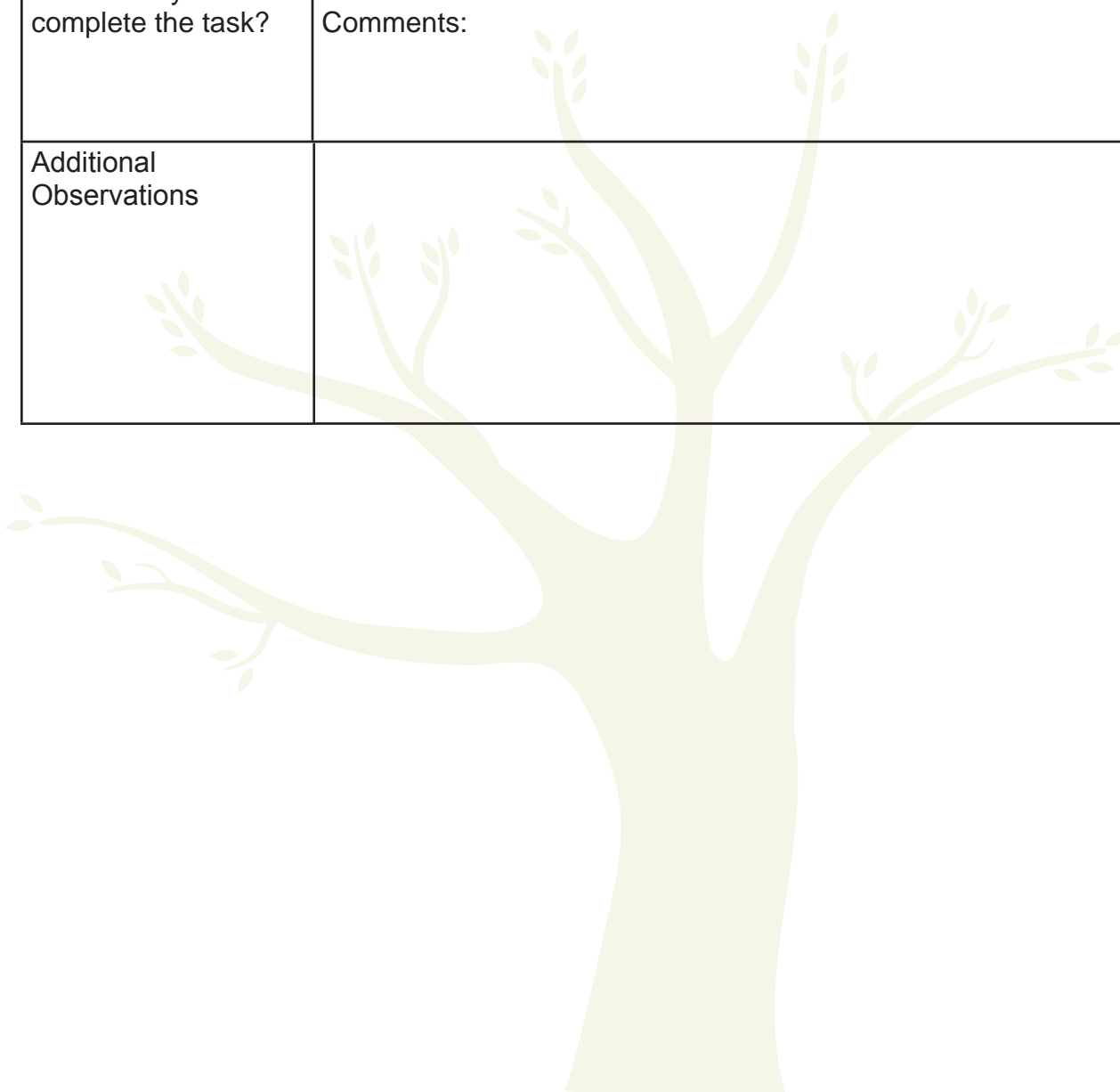
A server at a deli wants to know the average number of sandwiches sold each day. He checks the sales records for the previous week, shown below.

*Sandwich sales for
the week of January 3rd*

Sunday	4
Monday	10
Tuesday	4
Wednesday	5
Thursday	9
Friday	14
Saturday	17

What is the average number of sandwiches sold each day?
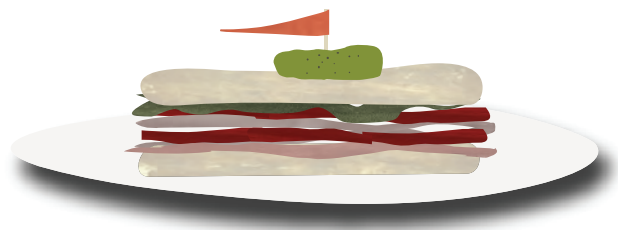
Answer: **9** sandwiches

Answer Discussion:
To calculate the average, add all of the sandwich sales for each day and then divide by the number of days:

$$4 + 10 + 4 + 5 + 9 + 14 + 17 = 63 \div 7 = 9$$

The server sold an average of 9 sandwiches per day.

Results and Observations Section:

Numeracy Task	Operation that is not clearly specified Two types of mathematical operations Few steps of calculation required
Occupation	NOC 6453 - Food and Beverage Server
Numeracy Skill(s)	Data Analysis Math: □ Calculates an average □ Adds whole numbers to determine total number of sandwiches sold in a week □ Divides by the number of days in the week
Did the client successfully complete the task?	□ Yes □ No □ Did not attempt □ Required assistance Comments:
Additional Observations	

A cashier is preparing to return unsold magazines to the supplier for a refund. To calculate the total amount of the refund, the cashier uses the information in the following Return Form:

Magazine Return Form			
Magazine	**Item Cost**	**Number to return**	**Sub Total**
Fashion Quarterly	$8.99 each	13 copies	
Build-it	$2.99 each	16 copies	
Recipes for U	$2.00 each	17 copies	
Total Refund			

What is the total amount of the refund?

Answer: **$198.71**

Answer Discussion:
To calculate the refund, you must multiply the number of copies by the unit price for each magazine. Then, add the refund for each magazine for the total refund

Fashion Quarterly:	13 x 8.99 =	$116.87
Build-It:	16 x 2.99 =	$ 47.84
Recipes for U:	17 x 2.00 =	$ 34.00
Total Refund		**$198.71**

Results and Observations Section:

Numeracy Task	Operation that is not clearly specified Two types of mathematical operations Few steps of calculation required
Occupation	NOC 6611 - Cashier
Numeracy Skill(s)	Money Math: □ Multiplies the number of magazines remaining by the unit price to determine the total cost of each magazine □ Adds all of the costs to determine the total amount to be refunded to the store
Did the client successfully complete the task?	□ Yes □ No □ Did not attempt □ Required assistance Comments:
Additional Observations	

A farm worker needs to find out which supplier offers the best deal on fertilizer. The worker calls four suppliers and obtains the following information:

Jerry's Food Farm:	$ 3.00/20kg bag
Chicken Run:	$ 7.50/50kg bag
Free Range Compost:	$ 9.00/75kg bag
Mud Farm:	$13.00/100kg bag

Based on the information above, which supplier offers the lowest price per kilogram?

Answer: Free Range Compost

Answer Discussion:
To figure out which supplier offers the lowest price per kilogram (kg), you need to calculate the "unit cost". The unit cost is the price of a single unit of product. For example, in a case of pop, each unit would be a can of pop. In this question, you need to find the unit cost of fertilizer which is the price of the fertilizer per kilogram. To do this, you need to divide each dollar amount by the number of kilograms.

Jerry's Food Farm:	3 divided by 20 equals $0.15 per kilogram
Chicken Run:	7.5 divided by 50 equals $0.15 per kilogram
Free Range Compost:	9 divided by 75 equals $0.12 per kilogram
Mud Farm:	13 divided by 100 equals $0.13 per kilogram

Free Range Compost offers fertilizer at the lowest unit cost at $0.12 per kilogram.

Results and Observations Section:

Numeracy Task	Operation that is not clearly specified Two types of mathematical operations Few steps of calculation required
Occupation	NOC 8431 - General Farm Workers
Numeracy Skill(s)	Scheduling or Budgeting and Accounting Math: □ Calculates unit cost by dividing the price of the fertilizer by the quantity □ Compares unit cost to determine which is lowest
Did the client successfully complete the task?	□ Yes □ No □ Did not attempt □ Required assistance Comments:
Additional Observations	

ESSENTIAL SKILLS NEEDS ASSESSMENT SUMMARY

*Use this **Essential Skills Needs Assessment Summary** table to conveniently record all the results in one place. The Summary can be shared with other intermediaries such as adult educators and skills trainers that can support the employment and training needs of the client. Written consent **must** be obtained from the client before sharing any of the assessment results.*

Booklet: _____ **Level:** _____

Date of Assessment: _____

Location of Assessment: _____

Assessor Name: _____

Candidate Name: _____

Question 1	
Did the client complete the task successfully?	☐ Yes ☐ No ☐ Did not attempt ☐ Required assistance
Observations:	

Question 2	
Did the client complete the task successfully?	☐ Yes ☐ No ☐ Did not attempt ☐ Required assistance
Observations:	

Question 3	
Did the client complete the task successfully?	☐Yes ☐ No ☐ Did not attempt ☐ Required assistance
Observations:	

Question 4	
Did the client complete the task successfully?	☐Yes ☐ No ☐ Did not attempt ☐ Required assistance
Observations:	

Question 5	
Did the client complete the task successfully?	☐Yes ☐ No ☐ Did not attempt ☐ Required assistance
Observations:	

Question 6	
Did the client complete the task successfully?	☐Yes ☐ No ☐ Did not attempt ☐ Required assistance
Observations:	

Question 7	
Did the client complete the task successfully?	☐Yes ☐ No ☐ Did not attempt ☐ Required assistance
Observations:	

Question 8	
Did the client complete the task successfully?	☐Yes ☐ No ☐ Did not attempt ☐Required assistance
Observations:	

Question 9	
Did the client complete the task successfully?	☐Yes ☐ No ☐ Did not attempt ☐ Required assistance
Observations:	

Question 10	
Did the client complete the task successfully?	☐Yes ☐ No ☐ Did not attempt ☐ Required assistance
Observations:	

I, _____, authorize my counsellor to share results of the Essential Skills needs assessment with anyone who is willing to assist me with my employment and training goals.

*These results were collected through an informal Essential Skills Needs Assessment process and do not provide formal assessment scores. They are intended to be used to support employment and career counsellors to engage clients in a discussion about training objectives, such as skills upgrading programs. For more information, please refer to the Introduction to an Essential Skills Needs Assessment tool available at **hrsdc.gc.ca/essentialskills**.*