Contents

About Pearson mathology

Practice Workbook

This Practice Workbook is yours! Use it to see what you know and think about what you might need to work on.

Getting Started

Everything you learn builds on something you have experienced or learned before.

Take Your Time

- Don't rush. Not all math tasks take the same amount of time to complete.

What Might This Look Like?

- Use tools and materials to help you complete the tasks.
- Try "seeing the problem in your mind" to help you reason your way to a solution.

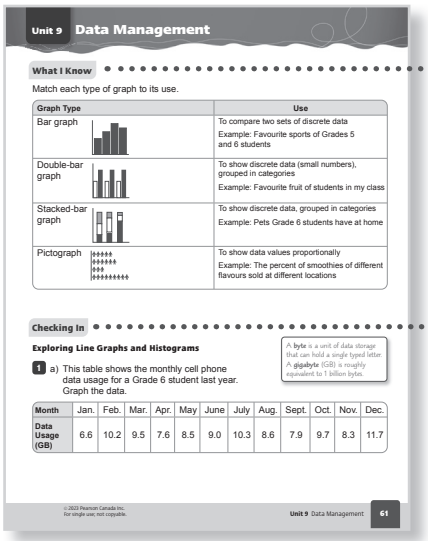
Try Your Best!

- Read over the tasks and think about questions you might have that would help you better understand them.
- Reflect on what you already know and use this information to help you complete the tasks.

Reflect On and Share Your Learning

- Share your thinking and findings—talk about strategies with your friends and family.
- Look back in the Practice Workbook to get ideas to help you solve new problems!

How Is the Practice Workbook Organized?



Unit 9 Data Management

What I Know

Match each type of graph to its use.

Graph Type	Use
Bar graph	To compare two sets of discrete data Example: Favourite sports of Grades 5 and 6 students
Double-bar graph	To show discrete data (small numbers), grouped in categories Example: Favourite fruit of students in my class
Stacked-bar graph	To show discrete data, grouped in categories Example: Pets Grade 6 students have at home
Pictograph	To show data values proportionally Example: The percent of smoothies of different flavours sold at different locations

Checking In

Exploring Line Graphs and Histograms

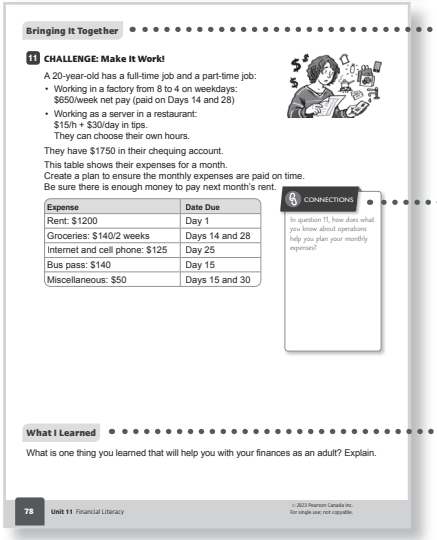
1 a) This table shows the monthly cell phone data usage for a Grade 6 student last year. Graph the data.

A **byte** is a unit of data storage that can hold a single typed letter. A **gigabyte** (GB) is roughly equivalent to 1 billion bytes.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Data Usage (GB)	6.6	10.2	9.5	7.6	8.5	9.0	10.3	8.6	7.9	9.7	8.3	11.7

What I Know — Review the things you already know.

Checking In — Build on your understanding and make connections to the world around you. Use the space provided to clearly record your thinking so others can understand you.



Bringing It Together

11 **CHALLENGE: Make It Work!**

A 20-year-old has a full-time job and a part-time job:
- Working in a factory from 8 to 4 on weekdays: $650/week net pay (paid on Days 14 and 28)
- Working as a server in a restaurant: $15/h + $30/day in tips. They can choose their own hours.

They have $1750 in their chequing account.

This table shows their expenses for a month.
Create a plan to ensure the monthly expenses are paid on time.
Be sure there is enough money to pay next month's rent.

Expense	Date Due
Rent: $1200	Day 1
Groceries: $140/2 weeks	Days 14 and 28
Internet and cell phone: $125	Day 25
Bus pass: $140	Day 15
Miscellaneous: $50	Days 15 and 30

CONNECTIONS

In question 11, how does what you know about operations help you plan your monthly expenses?

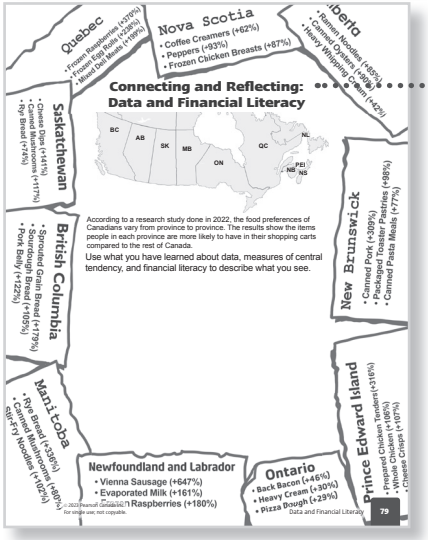
What I Learned

What is one thing you learned that will help you with your finances as an adult? Explain.

Bringing It Together — Work with others to discuss your thinking and strategies and show them what you know.

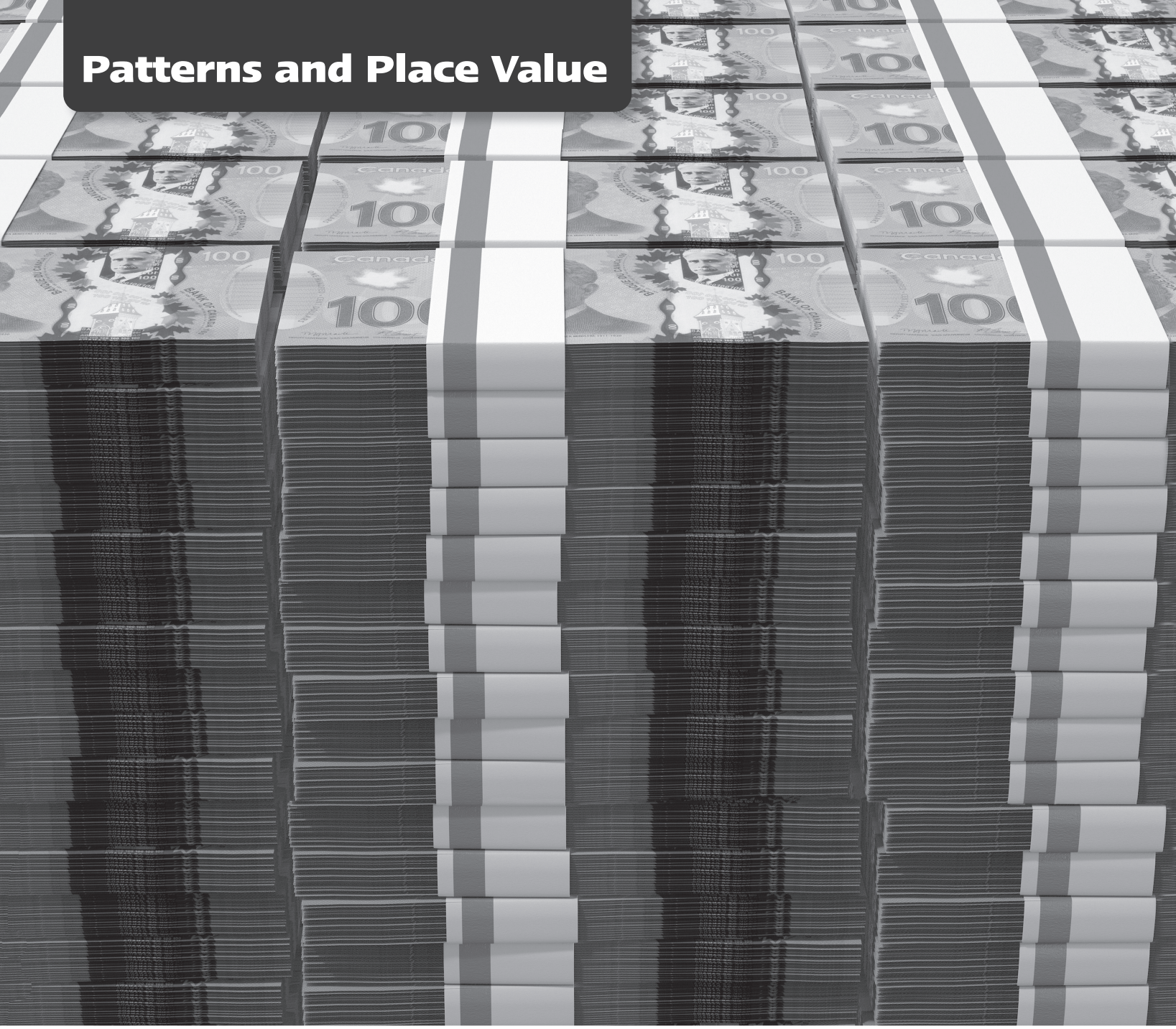
Connections — Think of how working on this math task relates to other things you know.

What I Learned — Answer the question by reflecting on what you know about important math learning.



Connecting and Reflecting — Use what you have learned to complete the task and to help you make sense of the world around you.

Patterns and Place Value



What math do you see in this picture?

What I Know

Draw the first 5 terms of an increasing pattern.

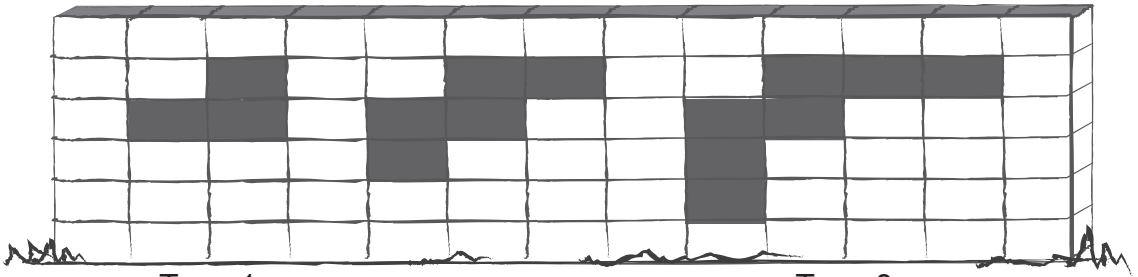
Write the pattern rule.

What will Term 7 look like? Explain how you know.

Checking In

Investigating Patterns and Relationships in Tables and Graphs

1 Use the pattern in the grey bricks to answer the questions.



a) Complete the table.

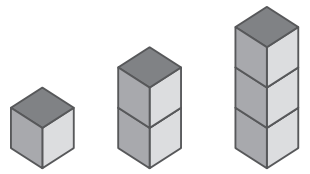
Term Number	Number of Grey Bricks
1	3
2	
3	7
4	
5	

b) Write the pattern rule for the number of grey bricks.

c) Write an algebraic expression to relate the term number to the number of bricks.

d) How many bricks will be in Term 10? Show how you know.

2 You have to paint the faces of each cube in the towers, not including the base.



Tower 1 Tower 2 Tower 3

a) Complete the table.

Tower Number (T)	Number of Faces to Paint (n)
1	5
2	
3	
4	
5	

b) Represent the pattern on a graph.

c) Identify the independent and dependent variables.

d) Write a pattern rule in words to show how the two sets of values are related.

e) Predict the number of faces that you would have to paint on Tower 10.

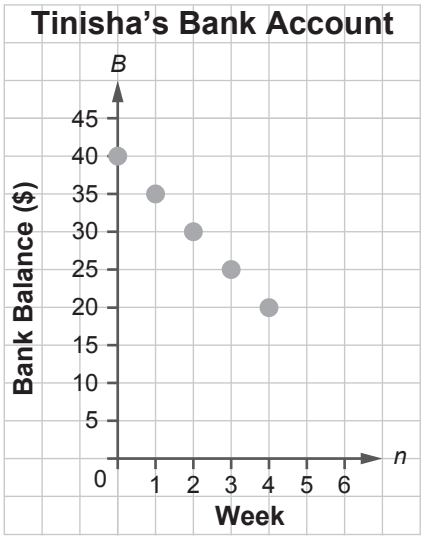
f) Write an algebraic expression to relate the two sets of values. Use the expression to check your answer to part e.

g) Describe the relationship shown on the graph.

h) How many faces will you have to paint on Tower 50?

3 Tinisha graphs the balance in their bank account each week.

a) Use the graph to complete the table of values.



Week (n)	Bank Balance, \$ (B)
0	
1	
2	
3	
4	

b) Why do you think the balance in Tinisha's bank account is decreasing by \$5 each week?

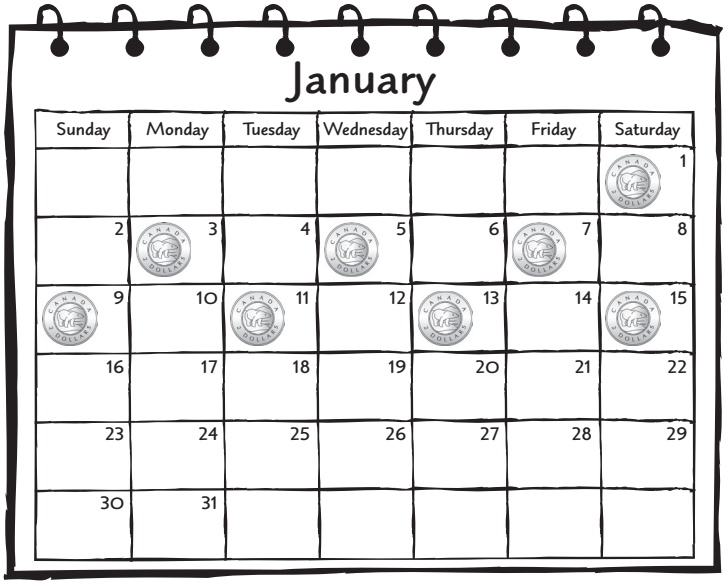
c) Identify the independent and dependent variables.

d) Write a pattern rule, an algebraic expression, and an equation that relates the two sets of values, n and B.

e) When will Tinisha's bank account be empty? Show your work.

Solving Problems

4 On January 1, Rishi starts to put toonies into an empty jar, as shown on the calendar.



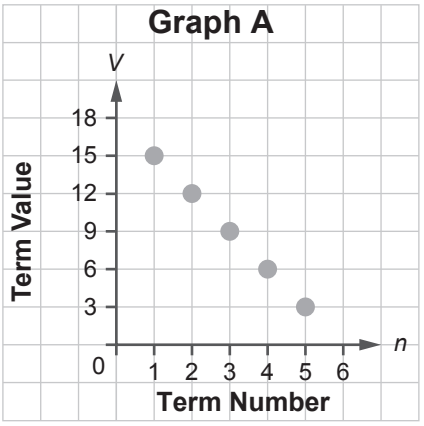
a) Describe the pattern. What is the rule?

b) If the pattern continues, will Rishi put $2 in the jar on the last day of the month?

c) How much will be in the jar at the end of the day on January 31? Show your thinking.

d) Would the graph for Rishi's pattern be linear or non-linear? Explain how you know.

5 Match each graph with its table of values. Is each pattern linear or non-linear?



Term Number	Term Value
1	0
2	3
3	6
4	9
5	12

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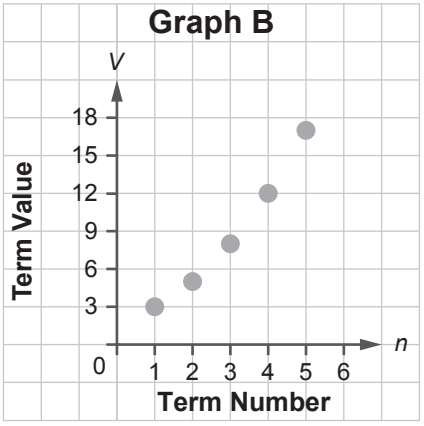

Term Number	Term Value
1	3
2	5
3	8
4	12
5	17

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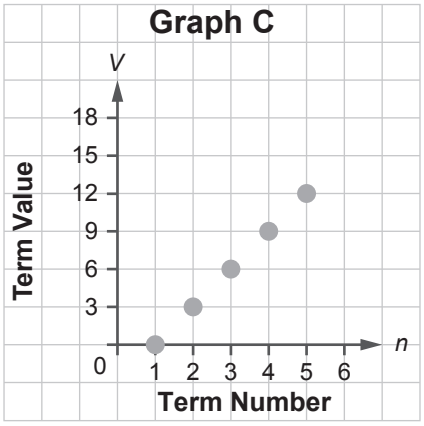

Term Number	Term Value
1	15
2	12
3	9
4	6
5	3

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CONNECTIONS

In question 5, how can you tell whether a pattern is linear or non-linear by looking at its graph?

6 GAME: What's in a Pattern?

HINT

For example, I rolled 5 and 3. I started at 3 and added 5 each time: 3, 8, 13, 18, 23, ...

Take turns to roll 2 number cubes.
Use your numbers to make an increasing pattern.
Predict if your pattern will include 50.
Extend your pattern to check.
The first player to make a pattern that includes 50 wins.

Play again! This time choose your own target number.

7

a) Identify the missing numbers. Explain how you know.

Term Number (*n*)	2		6	8		12
Term Value (*V*)		10	14	18		

b) What is the value of Term 1? Write the pattern rule for the term value.

c) Write an algebraic expression to relate the term number and term value.

d) Use your expression to find the value of Term 33.

Bringing It Together

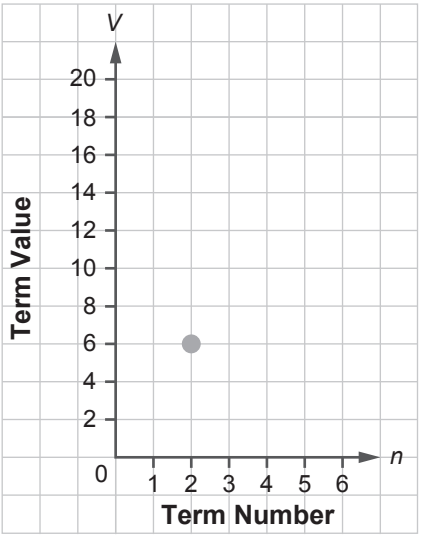
8 Show an increasing pattern where Term 2 has 6 tiles and another term has 18 tiles. Represent the pattern in at least 3 other ways.

As a picture:

In a table of values:

Term Number (n)	Term Value (V)
2	6

As a graph:



Write the pattern rule:

Use an equation to show which term has 18 tiles.

What I Learned

What is one new thing you learned about patterns in this unit? Explain.