

End-of-Unit Assessment

Number & Operations

5/6 Mathematics - Number Sense & Operations

Name: _____ Date: _____

Show your thinking. You may use estimation, models, or drawings. The last section is a Grade 6 challenge.

Part A - Place Value (/6)

1. Write 428 305 in words. (1)

2. Write the number: six hundred thousand, forty-two. (1)

3. Write 574 236 in expanded form. (1)

4. Order from least to greatest: 340 210, 304 120, 340 021, 304 210 (1)

5. What is the value of the 7 in 3 704 000? (1)

6. Round 486 217 to the nearest thousand. (1)

Part B - Operations (/7)

7. $356\,214 + 289\,507 =$ (1)

8. $803\,000 - 457\,260 =$ (1)

9. $246 \times 7 =$ (1)

10. $58 \times 34 =$ (1)

11. $125 \times 32 =$ (1)

12. $87 \div 6 =$ (give the quotient and remainder) (1)

13. 8 friends share 100 stickers equally. How many each, and how many left over? (1)

Part C - Decimals (/4)

14. Write 'five and seventy-three thousandths' as a decimal. (1)

15. Order from least to greatest: 0.4, 0.42, 0.402, 0.24 (1)

16. $4.6 + 3.85 =$ (1)

17. $9.20 - 5.437 =$ (1)

Part D - Problem Solving (/3)

18. You have \$50. You buy a book for \$18.75 and a game for \$22.50. How much change do you get? (1)

19. A class of 24 students needs 3 markers each. Markers come in packs of 8. How many packs are needed? (1)

20. Explain one strategy you used to check that an answer was reasonable. (1)

Grade 6 Extension (/7) - challenge

21. Write a number between two billion and three billion. Then write the value of its billions digit. (1)
(Gr 6)

22. Evaluate: $5 + 3 \times (12 - 4) =$ (1)
(Gr 6)

23. Evaluate: $(18 \div 3) + 2 \times 6 =$ (1)
(Gr 6)

24. List all the factors of 24. (1)
(Gr 6)

25. Write the first three common multiples of 4 and 6. (1)
(Gr 6)

26. $0.24 \times 3 =$ (1)

(Gr 6)

27. $6.4 \div 8 =$ (1)

(Gr 6)

Total: ____ / 20 (Grade 5 core) Extension: ____ / 7 (Grade 6)

Practice Activity

Lesson 1: Place Value Detective

5/6 Mathematics - Number Sense & Operations

Use place-value clues to crack each case. Show any working in the margin.

Name: _____ Date: _____

Case 1. I have 6 digits. My hundred-thousands digit is 5. My tens digit is 8. All my other digits are 0. Who am I?

Case 2. Build the LARGEST 6-digit number using each of these digits once: 3, 9, 1, 6, 4, 0.

Answer: _____

Case 3. Build the SMALLEST 6-digit number using 3, 9, 1, 6, 4, 0 once each (no leading zero).

Answer: _____

Case 4. I am between 400 000 and 500 000. My thousands digit is 5. My tens and ones digits are both 0. All my digits add up to 9. Who am I? _____

Case 5. In the number 3 6 2 8 4 1, circle the digit in the ten-thousands place, and write its value:

Detective Challenge (Gr 6). Write a number greater than one million but less than two million, then say the value of its millions digit: _____

Practice Activity

Lesson 2: Fact Maze

5/6 Mathematics - Number Sense & Operations

Shade every square with a TRUE equation. The true squares make a path from START (top-left) to FINISH (bottom-right)!

Name: _____ Date: _____

START $6 \times 7 = 42$	$8 \times 9 = 71$	$7 \times 6 = 48$	$9 \times 9 = 81$
$5 \times 8 = 40$	$6 \times 6 = 36$	$9 \times 4 = 36$	$8 \times 7 = 56$
$3 \times 9 = 29$	$7 \times 7 = 49$	$4 \times 8 = 30$	$6 \times 8 = 48$
$9 \times 3 = 27$	$8 \times 6 = 48$	$7 \times 8 = 54$	$9 \times 6 = 54$ FINISH

How many TRUE equations did you shade in total? _____

Challenge (Gr 6): Pick one FALSE square and fix it so the equation is true: _____

Practice Activity

Lesson 3: Number Pyramid

5/6 Mathematics - Number Sense & Operations

Each brick is the SUM of the two bricks below it. Fill in the empty bricks all the way to the top.

Name: _____ Date: _____

Pyramid A

[]
[] []
[] [] []
[12] [8] [15] [5]

Pyramid B (bigger numbers)

[]
[] []
[] [] []
[45] [38] [60] [27]

Missing-Brick Challenge (Gr 6). Some bricks are missing from the BOTTOM. Work backwards!

[100]
[] []
[18] [] [22]

Hint: the middle brick on the bottom is shared by both bricks above it.

Practice Activity

Lesson 4: Multiplication Mystery

5/6 Mathematics - Number Sense & Operations

Solve each product. Use the code to write the matching letter and reveal the answer to the riddle.

Name: _____ Date: _____

Riddle: What has many keys but cannot open a single door?

Product	36	42	54	63	72
Letter	I	P	A	O	N

Problem	Product	Letter
6 x 7	___	___
6 x 6	___	___
9 x 6	___	___
8 x 9	___	___
7 x 9	___	___

The answer is: _ _ _ _ _

Challenge (Gr 6): Make your own mystery. Pick a 3-letter word and write a product for each letter for a partner to solve.

Practice Activity

Lesson 5: Remainder Vault

5/6 Mathematics - Number Sense & Operations

Solve each division. Write the QUOTIENT and REMAINDER. The remainders, in order, are the secret code that cracks the vault!

Name: _____ Date: _____

Problem	Quotient	Remainder
22 div 4	____	____
25 div 3	____	____
39 div 5	____	____
31 div 7	____	____
40 div 8	____	____

VAULT CODE: __ __ __ __ __

Story problem. A baker has 50 cookies and puts 6 in each box. How many full boxes, and how many cookies are left over?

Boxes: _____ Left over: _____

Challenge (Gr 6): Find $512 \div 16$. Then name two factors of 512. _____

Practice Activity

Lesson 6: Decimal Challenge

5/6 Mathematics - Number Sense & Operations

Three quick decimal games. Read carefully - a small digit can still be worth a lot!

Name: _____ Date: _____

Game 1 - Order Up. Write each set from LEAST to GREATEST.

a) 0.6, 0.06, 0.66, 0.605 -> _____

b) 0.4, 0.42, 0.402, 0.24 -> _____

Game 2 - Closest to One. Circle the decimal in each row that is CLOSEST to 1.

a) 0.9 1.2 0.85 1.05

b) 0.7 0.98 1.3 0.55

Game 3 - Build It. Use the digit tiles 7, 4, 0, 9 once each to build the LARGEST decimal of the form _ . _ _ _

Largest: _____ Smallest: _____

Challenge (Gr 6): Write 0.75 as a fraction and as a percent: _____

Practice Activity

Lesson 7: Shopping Spree

5/6 Mathematics - Number Sense & Operations

Welcome to the School Store! Use the price list to answer each question. Line up your decimal points when you add.

Name: _____ Date: _____

Item	Price	Item	Price
Pencil	\$1.25	Markers	\$4.60
Eraser	\$0.75	Sticker sheet	\$0.90
Notebook	\$3.40	Water bottle	\$6.50

1. Buy a notebook and markers. What is the total? _____
2. You pay for #1 with a \$10 bill. How much change? _____
3. Buy a pencil, an eraser, and a sticker sheet. Total? _____
4. You have \$5.00. List things you could buy and still have money left:

Challenge (Gr 6): Buy 3 water bottles. What is the total? _____

Practice Activity

Lesson 8: Plan the Class Party

5/6 Mathematics - Number Sense & Operations

You have a budget of \$50.00. Choose what to buy, add up the cost, and stay under budget. Show your math!

Name: _____ Date: _____

Item	Price	Item	Price
Balloons (pack)	\$6.00	Pizza (1)	\$12.00
Cupcakes (12)	\$9.50	Fruit tray	\$8.00
Juice (8 pack)	\$4.25	Plates & cups	\$5.50
Chips (bag)	\$3.75	Playlist	FREE

My shopping list (item and price):

Total spent: _____ **Money left from \$50.00:** _____

Challenge (Gr 6): You buy 2 pizzas to feed 24 students. What is the cost per student? _____

Practice Activity

Lesson 9: Challenge Choice Board

5/6 Mathematics - Number Sense & Operations

Complete any *THREE* tasks in a row - across, down, or diagonal - like tic-tac-toe. Show your work on the back.

Name: _____ Date: _____

Write 620 405 in words.	Multiply: 27×6	Add: $3.5 + 2.75$
Divide: $55 \div 8$ (quotient and remainder)	FREE SPACE Teach a partner one strategy	Order least to greatest: 0.6, 0.06, 0.66
Estimate, then add: $4\ 812 + 3\ 199$	Gr 6 challenge: $4 + 2 \times (9 - 3)$	\$20, buy \$7.25 and \$9.50. How much change?

I completed three in a row: [] across [] down [] diagonal

My Learning Tracker

Number & Operations

5/6 Mathematics - Number Sense & Operations

Colour or check the box that fits after each lesson. Be honest - this helps you and your teacher know what to practise next.

Name: _____ Date: _____

Lesson	I can ...	Not yet	Getting there	I've got it!
1	I can read, write, and compare numbers to 1 000 000.			
2	I can use a mental-math strategy for my facts.			
3	I can estimate, then add and subtract to 1 000 000.			
4	I can multiply to three digits and show my thinking.			
5	I can divide and explain what the remainder means.			
6	I can read, compare, and order decimals to thousandths.			
7	I can add and subtract decimals to thousandths.			
8	I can solve a multi-step money problem.			
9	I can show what I learned about number and operations.			

One thing I am proud of: _____

One thing I want more practice with: _____

Unit Rubric

Number & Operations

5/6 Mathematics - Number Sense & Operations

BC Proficiency Scale. Grade 5 students are assessed on the core skills; the Grade 6 row (and Extending column) capture the extension work.

Criteria	Emerging	Developing	Proficient	Extending
Number & Place Value	With support, reads or compares numbers to 1 000 000.	Reads and compares numbers to 1 000 000 with some errors.	Reads, writes, and compares numbers to 1 000 000 using place value.	Extends fluently to billions and thousandths (Gr 6).
Operations (+, -, x, div)	Attempts operations with support; frequent errors.	Computes with whole numbers; some regrouping or fact errors.	Adds, subtracts, multiplies (to 3 digits) and divides (with remainders) accurately.	Applies order of operations and works with larger numbers (Gr 6).
Decimals	Identifies decimals with support.	Reads and compares decimals with some errors.	Reads, compares, adds, and subtracts decimals to thousandths.	Multiplies and divides decimals; links decimals, fractions, percents (Gr 6).
Estimating & Mental Math	Uses a strategy with prompting.	Estimates or uses a strategy inconsistently.	Estimates reasonably and chooses efficient mental-math strategies.	Selects and justifies the most efficient strategy.
Problem Solving & Communicating	Shows little of the thinking.	Shows some thinking; solution partly clear.	Solves multi-step problems and clearly shows and explains thinking.	Justifies reasoning and connects to real-life contexts.

Student: _____ Overall (circle): Emerging Developing Proficient Extending

Teacher Observation Checklist

Number & Operations (formative)

5/6 Mathematics - Number Sense & Operations

Circulate during hands-on tasks and jot quick codes. E = Emerging D = Developing P = Proficient Ext = Extending. Use the Notes column for a strategy or next step.

[illegible]

End-of-Unit Assessment - ANSWER KEY

Number & Operations

5/6 Mathematics - Number Sense & Operations

Teacher copy. Total: 27 marks (Gr 5 core /20, Gr 6 extension /7). Grade 6 extension is optional for Grade 5 students.

Part A - Place Value (/6)

1. Write 428 305 in words. (1)

Answer: four hundred twenty-eight thousand, three hundred five

2. Write the number: six hundred thousand, forty-two. (1)

Answer: 600 042

3. Write 574 236 in expanded form. (1)

Answer: 500 000 + 70 000 + 4 000 + 200 + 30 + 6

4. Order from least to greatest: 340 210, 304 120, 340 021, 304 210 (1)

Answer: 304 120, 304 210, 340 021, 340 210

5. What is the value of the 7 in 3 704 000? (1)

Answer: 700 000 (seven hundred thousand)

6. Round 486 217 to the nearest thousand. (1)

Answer: 486 000

Part B - Operations (/7)

7. $356\,214 + 289\,507 =$ (1)

Answer: 645 721

8. $803\,000 - 457\,260 =$ (1)

Answer: 345 740

9. $246 \times 7 =$ (1)

Answer: 1 722

10. $58 \times 34 =$ (1)

Answer: 1 972

11. $125 \times 32 =$ (1)

Answer: 4 000

12. $87 \div 6 =$ (give the quotient and remainder) (1)

Answer: 14 R3

13. 8 friends share 100 stickers equally. How many each, and how many left over? (1)

Answer: 12 each, 4 left over

Part C - Decimals (/4)

14. Write 'five and seventy-three thousandths' as a decimal. (1)

Answer: 5.073

15. Order from least to greatest: 0.4, 0.42, 0.402, 0.24 (1)

Answer: 0.24, 0.4, 0.402, 0.42

16. $4.6 + 3.85 =$ (1)

Answer: 8.45

17. $9.20 - 5.437 =$ (1)

Answer: 3.763

Part D - Problem Solving (/3)

18. You have \$50. You buy a book for \$18.75 and a game for \$22.50. How much change do you get? (1)

Answer: $\$50 - \$41.25 = \$8.75$

19. A class of 24 students needs 3 markers each. Markers come in packs of 8. How many packs are needed? (1)

Answer: $24 \times 3 = 72$ markers; $72 \div 8 = 9$ packs

20. Explain one strategy you used to check that an answer was reasonable. (1)

Answer: Answers will vary (e.g. estimated first, used inverse operation).

Grade 6 Extension (/7) - challenge

21. Write a number between two billion and three billion. Then write the value of its billions digit. (1)

Answer: e.g. 2 450 000 000; billions digit value = 2 000 000 000

22. Evaluate: $5 + 3 \times (12 - 4) =$ (1)

Answer: $5 + 3 \times 8 = 5 + 24 = 29$

23. Evaluate: $(18 \div 3) + 2 \times 6 =$ (1)

Answer: $6 + 12 = 18$

24. List all the factors of 24. (1)

Answer: 1, 2, 3, 4, 6, 8, 12, 24

25. Write the first three common multiples of 4 and 6. (1)

Answer: 12, 24, 36

26. $0.24 \times 3 =$ (1)

Answer: 0.72

27. $6.4 \div 8 =$ (1)

Answer: 0.8

Practice Activities - ANSWER KEY

Number & Operations

5/6 Mathematics - Number Sense & Operations

Teacher copy. Answers to the activities with definite solutions (open tasks vary).

Lesson 1 - Place Value Detective

Case 1: 500 080. Case 2 (largest): 964 310. Case 3 (smallest): 103 469.

Case 4: 405 000. Case 5: the 6 (ten-thousands), value 60 000. Challenge: answers vary.

Lesson 2 - Fact Maze

True squares (shade these): $6 \times 7 = 42$, $9 \times 9 = 81$, $5 \times 8 = 40$, $6 \times 6 = 36$, $9 \times 4 = 36$, $8 \times 7 = 56$, $7 \times 7 = 49$, $6 \times 8 = 48$, $9 \times 3 = 27$, $8 \times 6 = 48$, $9 \times 6 = 54$.

Total true: 11.

Path Start->Finish: $42 \rightarrow 40 \rightarrow 36 \rightarrow 36 \rightarrow 56 \rightarrow 48 \rightarrow 54$.

False squares: 8×9 (72), 7×6 (42), 3×9 (27), 4×8 (32), 7×8 (56).

Lesson 3 - Number Pyramid

Pyramid A: bottom 12, 8, 15, 5 $\rightarrow$ 20, 23, 20 $\rightarrow$ 43, 43 $\rightarrow$ 86.

Pyramid B: bottom 45, 38, 60, 27 $\rightarrow$ 83, 98, 87 $\rightarrow$ 181, 185 $\rightarrow$ 366.

Challenge: bottom 18, 40, 22 $\rightarrow$ 58, 62 $\rightarrow$ top 120? Check: top given 100 means middle = $100 - ?$ Solve: middle brick m, $18 + m$ and $m + 22$; $(18 + m) + (m + 22) = 100 \rightarrow 2m + 40 = 100 \rightarrow m = 30$. Bottom: 18, 30, 22.

Lesson 4 - Multiplication Mystery

$6 \times 7 = 42$ (P), $6 \times 6 = 36$ (I), $9 \times 6 = 54$ (A), $8 \times 9 = 72$ (N), $7 \times 9 = 63$ (O). Answer: PIANO.

Lesson 5 - Remainder Vault

$22 \div 4 = 5$ R2; $25 \div 3 = 8$ R1; $39 \div 5 = 7$ R4; $31 \div 7 = 4$ R3; $40 \div 8 = 5$ R0.

Vault code: 2 1 4 3 0.

Story: $50 \div 6 = 8$ boxes, 2 left over. Challenge: $512 \div 16 = 32$; factors of 512 vary (e.g. 2 and 256, 8 and 64).

Lesson 6 - Decimal Challenge

Game 1a: 0.06, 0.6, 0.605, 0.66. 1b: 0.24, 0.4, 0.402, 0.42.

Game 2a: 1.05 is closest to 1. 2b: 0.98 is closest to 1.

Game 3: largest 9.740, smallest 0.479. Challenge: $0.75 = \frac{3}{4} = 75\%$.

Lesson 7 - Shopping Spree

1: \$8.00. 2: \$2.00 change. 3: \$2.90. 4: answers vary. Challenge: $3 \times \$6.50 = \19.50 .

Lesson 8 - Plan the Class Party

Answers vary; total must be 50.00 or less. Money left = \$50.00 minus total.

Challenge: $2 \times \$12.00 = \24.00 ; $\$24.00 \div 24$ students = \$1.00 per student.

Lesson 9 - Challenge Choice Board

$620\,405$ = six hundred twenty thousand, four hundred five. $27 \times 6 = 162$. $3.5 + 2.75 = 6.25$.

$55 \div 8 = 6$ R7. Order: 0.06, 0.6, 0.66. Estimate $4812 + 3199 \sim 8000$, exact 8 011.

Gr 6: $4 + 2 \times (9 - 3) = 4 + 12 = 16$. $\$20 - (\$7.25 + \$9.50) = \3.25 change.