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Place Value to 100 000 - Year 4

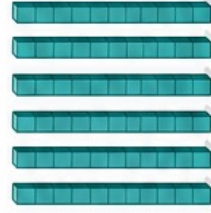
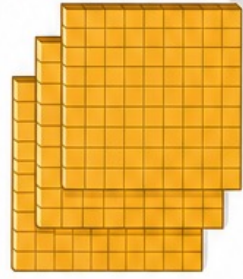
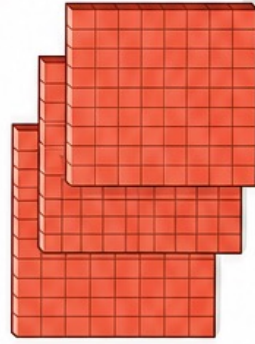
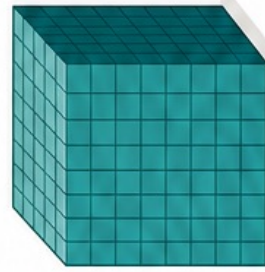
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PLACE VALUE TO 100 000

HUNDRED THOUSANDS	TEN THOUSANDS	THOUSANDS	HUNDREDS	TENS	ONES
—	6	3	4	0	7

$$63\,407 = 60\,000 + 3\,000 + 400 + 7$$



A zero holds
an empty place.

... ONE NUMBER, FOUR FORMS

STANDARD FORM

84 206

WORD FORM

eighty-four thousand,
two hundred and six

EXPANDED FORM

$80\ 000 + 4\ 000 + 200 + 6$

NON-STANDARD FORM

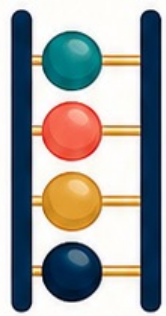
7 ten thousands + 14 thousands
2 hundreds + 6 ones

84 206

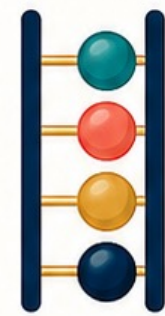


Different forms can name the same number.





ABACUS BINGO - GAME BOARDS



Cover the number that matches each calling card. First to three in a row wins!

BOARD A

12 405	38 710	64 203
90 056	27 840	51 609
73 002	46 580	85 314

BOARD B

46 580	12 405	90 056
73 002	64 203	27 840
85 314	51 609	38 710

BOARD C

85 314	73 002	27 840
38 710	46 580	12 405
51 609	90 056	64 203

BOARD D

64 203	51 609	85 314
27 840	38 710	73 002
90 056	12 405	46 580



ABACUS BINGO – CALLING CARDS

Cut apart. Shuffle. Read one card at a time.

12 405

thirty-eight
thousand, seven
hundred and ten

$60\ 000 + 4\ 000$
 $+ 200 + 3$

9 ten thousands
 $+ 56$ ones

twenty-seven
thousand, eight
hundred and forty

$50\ 000 + 1\ 000$
 $+ 600 + 9$

73 002

forty-six
thousand, five
hundred and eighty

$80\ 000 + 5\ 000$
 $+ 300 + 14$

1 ten thousand
 $+ 2$ thousands
 $+ 4$ hundreds
 $+ 5$ ones

38 710

ninety thousand
and fifty-six



PLACE VALUE BATTLESHIPS



HOW TO PLAY

1. Each player secretly writes a five-digit number.
2. Take turns asking one place-value question.
3. Your partner answers only "hit" or "miss".
4. Record every clue on your grid.
5. A hit means your clue matches the secret number.
6. First to identify the whole number wins.



SECRET MISSIONS



Is the
ten-thousands digit
greater than 5?

Is the
thousands digit
even?

Is the
hundreds digit 0?

Is the
tens digit
less than 4?

Is the
ones digit
odd?

Is the number
greater than
50 000?

Use mathematical language. Explain your final guess.



PLACE VALUE BATTLESHIPS



— PLAYER GRIDS —

★ PLAYER 1 ★

Secret number: _ _ _ _ _

HTh	TTh	Th	H	T	O

★	MY CLUES	★
	Question	Hit / Miss

Final guess: _____

★ PLAYER 2 ★

Secret number: _ _ _ _ _

HTh	TTh	Th	H	T	O

★	MY CLUES	★
	Question	Hit / Miss

Final guess: _____





START

1

2

READ IT

3

4

5

EXPAND IT

6

7

8

VALUE?

9

10

COMPARE

11

12

ORDER

13

14

15

RENAME

16

17

18

MISSING
DIGIT

19

20

21

22

EXPLAIN

23

24

PLACE
VALUE
QUEST

Roll. Move. Draw a challenge card.
Correct answer: stay.
Try again: move back one.

You need one counter per player, one die and the challenge cards.



1 Read 42 608 aloud.



2 Expand 73 019.



3 What is the value of 5 in 65 240?



4 Which is greater: 48 905 or 48 590?



5 Order: 31 405, 31 045, 31 400.



6 Rename 62 300 using 12 thousands.



7 Fill the digit: $47 _ 12 > 47 _ 12$.



8 Write ninety thousand and six.



9 What place is 8 in 84 320?



10 Make the smallest number with 7, 0, 5, 2, 9.



11 True or false: $6\,000 + 420 = 6\,420$.



12 Explain why $54\,099 < 54\,900$.



QUEST RECORD	
Challenge	Working / answer
1.	
2.	
3.	
4.	
5.	
6.	

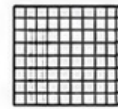
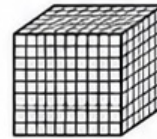
REPRESENT AND RENAME – PAGE 1

Name: _____

Date: _____



Complete each equivalent representation.



	Number	Word form	Expanded form
1.	34 205		
2.		sixty-two thousand, eight hundred and nine	
3.			70 000 + 5 000 + _____ + 40 + 1
4.	90 056		
5.		forty-eight thousand, seven hundred and twelve	
6.			20 000 + 4 000 + 600 + 8

SHOW IT ANOTHER WAY

7. Write 3 420 as a non-standard partition.

8. Draw or describe a model for 81 006.

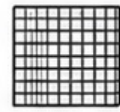
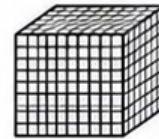
REPRESENT AND RENAME – PAGE 1

Name: **ANSWERS**

Date: _____



Complete each equivalent representation.



	Number	Word form	Expanded form
1.	34 205	thirty-four thousand, two hundred and five	$30\ 000 + 4\ 000 + 200 + 5$
2.	62 809	sixty-two thousand, eight hundred and nine	$60\ 000 + 2\ 000 + 800 + 9$
3.	75 341	seventy-five thousand, three hundred and forty-one	$70\ 000 + 5\ 000 + 300 + 40 + 1$
4.	90 056	ninety thousand and fifty-six	$90\ 000 + 50 + 6$
5.	48 712	forty-eight thousand, seven hundred and twelve	$40\ 000 + 8\ 000 + 700 + 10 + 2$
6.	24 608	twenty-four thousand, six hundred and eight	$20\ 000 + 4\ 000 + 600 + 8$

SHOW IT ANOTHER WAY

7. Write 34 420 as a non-standard partition.

— $40\ 000 + 13\ 000 + 400 + 20$ —

8. Draw or describe a model for 81 006.

8 ten thousands + 1 thousand + 6 ones

REPRESENT AND RENAME — PAGE 2

Name: _____

Date: _____

COMPLETE THE RENAMING

Write the missing number.

1.	$47\ 300 = 3 \text{ ten thousands} + \boxed{} \text{ thousands} + 3 \text{ hundreds}$
2.	$68\ 042 = \boxed{} \text{ ten thousands} + 18 \text{ thousands} + 4 \text{ tens} + 2 \text{ ones}$
3.	$92\ 500 = 8 \text{ ten thousands} + \boxed{} \text{ thousands} + 5 \text{ hundreds}$
4.	$56\ 019 = 4 \text{ ten thousands} + \boxed{} \text{ thousands} + 19 \text{ ones}$

TRUE OR FALSE?

Circle True or False. Correct each false statement.

5.	$73\ 464 = 7 \text{ ten thousands} + 13 \text{ thousands} + 6 \text{ hundreds} + 4 \text{ ones}$	True / False
	Correction: _____	
6.	$84\ 250 = 7 \text{ ten thousands} + 13 \text{ thousands} + 2 \text{ hundreds} + 5 \text{ tens}$	True / False
	Correction: _____	
7.	$72\ 908 = 60\ 000 + 12\ 000 + 900 + 8$	True / False
	Correction: _____	
8.	$74\ 346 = 50\ 000 + 23\ 000 + 40 + 6$	True / False
	Correction: _____	

REPRESENT AND RENAME — PAGE 2

Name: **ANSWERS**

Date: _____

COMPLETE THE RENAMING

Write the missing number.

1.	$47\ 300 = 3 \text{ ten thousands} + \boxed{17} \text{ thousands} + 3 \text{ hundreds}$
2.	$68\ 042 = \boxed{5} \text{ ten thousands} + 18 \text{ thousands} + 4 \text{ tens} + 2 \text{ ones}$
3.	$92\ 500 = 8 \text{ ten thousands} + \boxed{12} \text{ thousands} + 5 \text{ hundreds}$
4.	$56\ 019 = 4 \text{ ten thousands} + \boxed{1} \text{ thousand} + 6 \text{ hundreds} + 19 \text{ ones}$

TRUE OR FALSE?

Circle True or False. Correct each false statement.

5.	$73\ 464 = 6 \text{ ten thousands} + 13 \text{ thousands} + 6 \text{ hundreds} + 4 \text{ ones}$	<u>True</u> / False
	Correction: _____	
6.	$84\ 250 = 7 \text{ ten thousands} + 13 \text{ thousands} + 2 \text{ hundreds} + 5 \text{ tens}$	True / <u>False</u>
	Correction: <u>$84\ 250 = 7 \text{ ten thousands} + 14 \text{ thousands} + 2 \text{ hundreds} + 5 \text{ tens}$</u>	
7.	$72\ 908 = 60\ 000 + 12\ 000 + 900 + 8$	<u>True</u> / False
	Correction: _____	
8.	$74\ 346 = 50\ 000 + 23\ 000 + 40 + 6$	True / <u>False</u>
	Correction: <u>$73\ 046 = 50\ 000 + 23\ 000 + 40 + 6$</u>	



DIGIT VALUE DETECTIVE



Name: _____ Date: _____

Write the place and value of the target digit.

	Number	Target digit	Place	Value
1.	63 407	6		
2.	58 219	8		
3.	90 056	5		
4.	42 684	2		
5.	77 703	7 in the thousands place		
6.	15 938	9		

SOLVE THE CLUES

7. I am a five-digit number. I have 6 ten thousands, 4 hundreds and zeros in every other place. What am I?

8. In 38 420, swap the 3 and the 8.
What is the new number? What is the new value of the 8?

Number: _____

Value: _____



DIGIT VALUE DETECTIVE



Name: ANSWERS Date: _____

Write the place and value of the target digit.

Number	Target digit	Place	Value
1. 63 407	6	ten thousands	60 000
2. 58 219	8	thousands	8 000
3. 90 056	5	tens	50
4. 42 684	2	thousands	2 000
5. 77 703	7 in the thousands place	thousands	7 000
6. 15 938	9	hundreds	900

SOLVE THE CLUES

7. I am a five-digit number. I have 6 ten thousands, 4 hundreds and zeros in every other place. What am I?

60 400

8. In 38 420, swap the 3 and the 8.
What is the new number? What is the new value of the 8?

Number: 83 420

Value: 80 000

COMPARE AND ORDER – PAGE 1

Name: _____

Date: _____



Write $<$, $>$ or $=$. Then name the first place that decides the comparison.



	Number A	$<$, $>$ or $=$	Number B	Decisive place
1.	42 580		42 508	
2.	76 043		75 943	
3.	90 006		89 006	
4.	34 720		34 720	
5.	58 219		58 291	
6.	63 400		63 040	

EXPLAIN YOUR THINKING

7. Jai says 47 105 is greater than 48 105 because 9 is greater than 1. Explain Jai's error.

8. Write a number greater than 65 490 but less than 65 500. Explain how you know.

Number: _____

Explanation: _____

COMPARE AND ORDER – PAGE 1

Name: **ANSWERS**

Date: _____



Write $<$, $>$ or $=$. Then name the first place that decides the comparison.



	Number A	$<$, $>$ or $=$	Number B	Decisive place
1.	42 580	$>$	42 508	tens
2.	76 043	$>$	75 943	thousands
3.	90 006	$>$	89 100	ten thousands
4.	34 720	$=$	34 720	all places equal
5.	58 219	$<$	58 291	tens
6.	63 400	$<$	63 040	hundreds

EXPLAIN YOUR THINKING

7. Jai says 47 905 is greater than 48 105 because 9 is greater than 1. Explain Jai's error.

Compare from the greatest place. The ten-thousands digits are equal, but 7 thousands is less than 8 thousands, so $47\,905 < 48\,105$.

8. Write a number greater than 65 490 but less than 65 500. Explain how you know.

Number: **65 495**

Explanation: **It is 5 more than 65 490 and 5 less than 65 500.**

COMPARE AND ORDER – PAGE 2

Name: _____ Date: _____

ORDER EACH SET

1. Ascending: 45 210, 45 012, 45 201, 45 120

2. Descending: 68 004, 67 940, 68 040, 68 400

3. Ascending: 90 099, 89 999, 90 009, 90 090

4. Descending: 32 560, 32 506, 32 650, 32 605

BUILD AND REASON

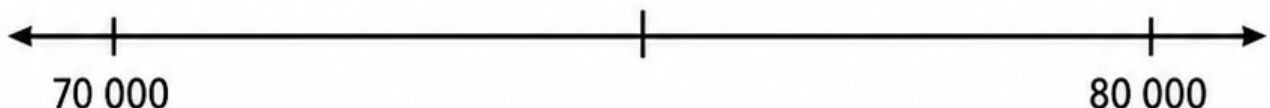
5. Use 8, 5, 2, 0 and 4 once each.

Greatest number: _____

Smallest number: _____

6. Write a number between 54 700 and 54 800 with 6 in the tens place.

7. Label the midpoint.



8. Which is greater: 61 009 or 61 090? Explain which place decides.

COMPARE AND ORDER – PAGE 2

Name: ANSWERS Date: _____

ORDER EACH SET

1. Ascending: 45 210, 45 012, 45 201, 45 120

45 012, 45 120, 45 201, 45 210

2. Descending: 68 004, 67 940, 68 040, 68 400

68 400, 68 040, 68 004, 67 940

3. Ascending: 90 099, 89 999, 90 009, 90 090

89 999, 90 009, 90 090, 90 099

4. Descending: 32 560, 32 506, 32 650, 32 605

32 650, 32 605, 32 560, 32 506

BUILD AND REASON

5. Use 8, 5, 2, 0 and 4 once each.

Greatest number: 85 420

Smallest number: 20 458

6. Write a number between 54 700 and 54 800 with 6 in the tens place.

54 760

7. Label the midpoint.



8. Which is greater: 61 009 or 61 090? Explain which place decides.

61 090 is greater. The tens place decides: 9 tens is greater than 0 tens.

PARTITION AND REGROUP – PAGE 1

Name: _____

Date: _____

MATCH THE FORMS

Complete the missing equivalent forms.

	Number	Expanded form	A renamed form
1.	54 260		
2.	80 405		
3.		70 000 + 3 000 + 600 + 20 + 9	
4.			6 ten thousands + 14 thousands + 8 hundreds + 3 ones

REGROUP WITHOUT CHANGING THE VALUE

5. $63\ 000 = \underline{\hspace{2cm}} \text{ thousands} + 5 \text{ hundreds}$

6. $47\ 080 = 3 \text{ ten thousands} + \underline{\hspace{2cm}} \text{ thousands} + 8 \text{ tens}$

7. $90\ 000 = \underline{\hspace{2cm}} \text{ ten thousands} + 20 \text{ thousands}$

8. Write two different partitions of 52 400.

Partition A: _____

Partition B: _____

PARTITION AND REGROUP – PAGE 1

Name: _____

ANSWERS

Date: _____

MATCH THE FORMS

Complete the missing equivalent forms.

	Number	Expanded form	A renamed form
1.	54 260	$50\,000 + 4\,000 + 200 + 60$	4 ten thousands + 14 thousands + 2 hundreds + 6 tens
2.	80 405	$80\,000 + 400 + 5$	7 ten thousands + 10 thousands + 4 hundreds + 5 ones
3.	73 629	$70\,000 + 3\,000 + 600 + 20 + 9$	6 ten thousands + 13 thousands + 6 hundreds + 2 tens + 9 ones
4.	74 803	$70\,000 + 4\,000 + 800 + 3$	6 ten thousands + 14 thousands + 8 hundreds + 3 ones

REGROUP WITHOUT CHANGING THE VALUE

5. $63\,200 = \underline{63}$ thousands + 5 hundreds

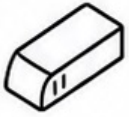
6. $47\,080 = 3$ ten thousands + $\underline{17}$ thousands + 8 tens

7. $90\,000 = \underline{7}$ ten thousands + 20 thousands

8. Write two different partitions of 52 400.

Partition A: $\underline{50\,000 + 2\,000 + 400}$

Partition B: $\underline{4 \text{ ten thousands} + 12 \text{ thousands} + 4 \text{ hundreds}}$



PARTITION AND REGROUP – PAGE 2



Name: _____

Date: _____

FIND AND FIX THE ERROR

Explain the error, then write a correct statement.

1. “68 402 = 60 000 + 8 000 + 400 + 20”

2. “The 7 in 72 615 has a value of 7 000.”

3. “90 080 is ninety thousand and eight”

4. “54 800 = 54 000 + 80”

MISSING-DIGIT CHALLENGE

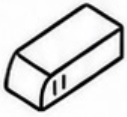
Write the digit that makes each statement true.

5. $6_420 = 60\,000 + 5\,000 + 400 + 20$

6. $83_07 = 80\,000 + 3\,000 + 400 + 7$

7. $4_530 > 48\,530$

8. $72\,000 = 5 \text{ ten thousands} + _____ \text{ thousands}$



PARTITION AND REGROUP – PAGE 2



Name: ANSWERS

Date: _____

FIND AND FIX THE ERROR

Explain the error, then write a correct statement.

1. “68 402 = 60 000 + 8 000 + 400 + 20”

20 represents two tens, making 68 420. Correct: 68 402 = 60 000 + 8 000 + 400 + 2.

2. “The 7 in 72 615 has a value of 7 000.”

The 7 is in the ten-thousands place. Its value is 70 000.

3. “90 080 is ninety thousand and eight.”

The tens digit is 8. Correct: ninety thousand and eighty.

4. “54 300 < 54 030”

The hundreds place decides. Correct: 54 300 > 54 030.

MISSING-DIGIT CHALLENGE

Write the digit that makes each statement true.

5. 6 5 420 = 60 000 + 5 000 + 400 + 20

6. 83 4 07 = 80 000 + 3 000 + 400 + 7

7. 4 9 530 > 48 530

8. 72 000 = 5 ten thousands + 22 thousands

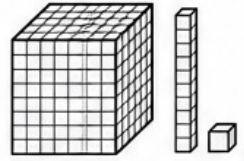
ROLL AND REPRESENT

Name: _____

Date: _____



Roll a die five times. Record one digit each time.
Arrange your digits to make a five-digit number.
A zero may not be first.



Roll 1

Roll 2

Roll 3

Roll 4

Roll 5

My number: _____

HTh	TTh	Th	H	T	0

WORD FORM

EXPANDED FORM

A RENAMED FORM

DRAW A MODEL

CHALLENGE

1. Make the greatest number possible with your digits.
2. Make the smallest number possible with your digits.

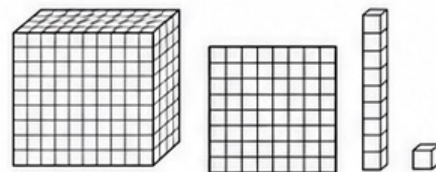
PLACE VALUE CHALLENGE — ASSESSMENT 1



Name: _____

Date: _____

Show your working where needed.



1. Write 76 304 in words.

2. Write “forty-two thousand, nine hundred and six” as a number.

3. Write 58 021 in expanded form.

4. Write $90\,000 + 700 + 50 + 4$ as a number.

5. What is the value of the 6 in 64 208?

6. What place is the 9 in 39 500?

7. Put 83 070 into a place-value chart.

HTh	TTh	Th	H	T	O

8. Explain the role of zero in 83 070.

9. Rename 72 400 using exactly 5 ten thousands. _____

10. Draw or describe a model for 45 006.

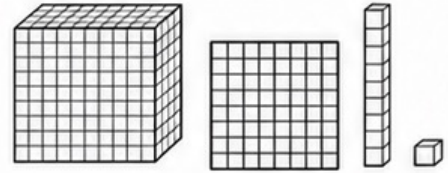
PLACE VALUE CHALLENGE — ASSESSMENT 1



Name: ANSWERS

Date: _____

Show your working where needed.



1. Write 76 304 in words.

seventy-six thousand, three hundred and four

2. Write “forty-two thousand, nine hundred and six” as a number.

42 906

3. Write 58 021 in expanded form.

50 000 + 8 000 + 20 + 1

4. Write $90\,000 + 700 + 50 + 4$ as a number.

90 754

5. What is the value of the 6 in 64 208? 6 000

6. What place is the 9 in 39 500? thousands

7. Put 83 070 into a place-value chart.

HTh	TTh	Th	H	T	O
		3	0	7	0

8. Explain the role of zero in 83 070.

Zeros show there are no hundreds and no ones; they hold the other digits in the correct places.

9. Rename 72 400 using exactly 5 ten thousands. 5 ten thousands + 22 thousands + 4 hundreds

10. Draw or describe a model for 45 006.

4 ten thousands + 5 thousands + 6 ones

PLACE VALUE CHALLENGE — ASSESSMENT 2

Name: _____ Date: _____



Show your working and explain your reasoning.

1. 47 620 ____ 47 260 (write <, > or =)

2. 80 090 ____ 80 900 (write <, > or =)

3. Order ascending: 53 210, 53 012, 53 201, 53 120.

4. Order descending: 91 004, 90 940, 91 040, 91 400.

5. Write a number greater than 62 780 but less than 63 000.

6. Fill the digit: $5_403 > 58400$.

7. True or false? $200 + 3 \text{ tens thousands} + 14 \text{ thousands} + 2 \text{ hundreds}$. Explain.



8. Find and fix the error: $73\,506 = 70\,000 + 3\,000 + 500 + 60$.



9. Use 6, 0, 9, 2 and 4 once each.

Greatest: _____

Smallest: _____



10. Explain why 90 010 is greater than 89 999.

PLACE VALUE CHALLENGE — ASSESSMENT 2

Name: ANSWERS Date: _____



Show your working and explain your reasoning.

1. 47 620 > 47 260 (write <, > or =)

2. 80 090 < 80 900 (write <, > or =)

3. Order ascending: 53 210, 53 012, 53 201, 53 120.

53 012, 53 120, 53 201, 53 210

4. Order descending: 91 004, 90 940, 91 040, 91 400.

91 400, 91 040, 91 004, 90 940

5. Write a number greater than 62 780 but less than 63 000.

62 790

6. Fill the digit: 59 403 > 58 403.

7. True or false? 64 200 is 6 ten thousands + 14 thousands + 2 hundreds. Explain.

True. 60 000 + 4 000 + 200 = 64 200.



8. Find and fix the error: 73 506 = 70 000 + 3 000 + 500 + 60.

The 60 should be 6. Correct: 73 506 = 70 000 + 3 000 + 500 + 6.



9. Use 6, 0, 9, 2 and 4 once each.

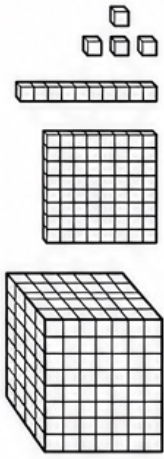
Greatest: 96 420

Smallest: 20 469



10. Explain why 90 010 is greater than 89 999.

Compare the greatest place. 9 ten thousands is greater than 8 ten thousands, so 90 010 > 89 999.



PLACE VALUE TO 100 000 – RUBRIC

Student: _____

Date: _____

CRITERIA	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
1. READS AND WRITES NUMBERS	Reads or writes some numbers with support.	Reads or writes numbers for five digit numbers.	Accurately reads and writes numbers to 100 000.	Connects and checks multiple number forms.	Explains patterns and justifies equivalent forms.
2. DIGIT PLACE AND VALUE	Identifies some digit places with support.	Finds place value in familiar examples.	Accurately states each digit's place and value.	Explains repeated digits and changes in value.	Generalises how value changes across places.
3. REPRESENTS AND PARTITIONS	Uses one representation with support.	Connects standard and expanded forms.	Connects word, standard, expanded and named forms.	Creates valid non-standard partitions.	Justifies multiple equivalent partitions.
4. COMPARES AND ORDERS	Compares numbers with support.	Compares using the greatest place.	Accurately compares and orders number sets.	Solves boundary and missing-digit comparisons.	Justifies efficient comparison strategies.
5. ZERO AND REGROUPING	Notifies zero in a number.	Describes zero as an empty place.	Uses zero and regrouping accurately.	Explains why regrouping keeps value unchanged.	Applies regrouping flexibly in unfamiliar cases.
6. MATHEMATICAL REASONING	Gives an answer with little explanation.	Gives a simple place-value reason.	Uses evidence to explain thinking.	Evaluates errors and communicates clear reasoning.	Constructs and defends efficient reasoning.

Teacher feedback: _____

Next step: _____

Place Value to 100 000



Learning Intention

We are learning to read, write, represent, compare and order whole numbers to 100 000.

Success criteria

- explain the value of each digit
- connect different number forms
- compare, order and justify



What Is Place Value?

Place value tells us how much a digit is worth because of where it sits.

63 400

- 6 means 60 000
- 3 means 3 000
- 4 means 400
- 0 means no tens
- 7 means 7



The Place-Value Chart

HTh Th Th H | T O
10 000 | 10 000 | 1 000 | 100 | 10 | 1

Always read a whole number from the greatest place on the left to the ones place on the right.



Build 63 407

6 ten thousands = 60 000

3 thousands = 3 000

4 hundreds = 400

0 tens = 0

7 ones = 7

$$60\,000 + 3\,000 + 400 + 7 = 63\,407$$



One Number, Four Forms

STANDARD: 4 20

WORD: eight thousand two hundred and six

EXPANDED: $80\,000 + 4\,000 + 200 + 6$

KEYWORD: 80 thousands + 14 thousands + 2 hundreds + 6 ones



Non-Standard Partitions

A number can be partitioned in more than one way.

$$= 5,000 + 2,000 + 400$$

4 ten thousands + 2 thousands + 4 hundreds

parts change, but the total stays the same.



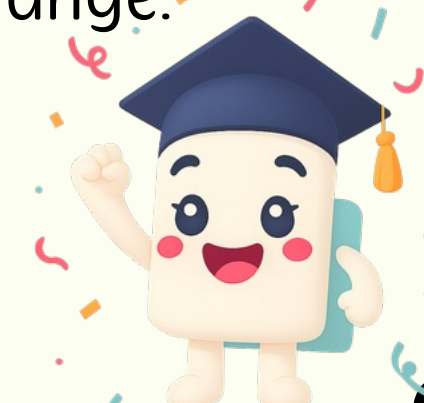
Zero Holds a Place

Zero shows that a place is empty.

83 070

8 ten thousands, 3 thousands, 0 hundreds, 7 tens and 0 ones.

Without the zero in the hundreds place, the other digits would shift and the value would change.



Rename Without Changing Value

Ten of one place make one in the next greater place.

1 ten thousand = 10 thousands

7 080

= 7 000 + 7 000 + 80

ten thousands + 17 thousands + 8 tens



Digit, Place and Value

Digit is the symbol: 8

Place is its position: thousands

Value is what it is worth: 8 000

In 8 219, the digit 8 is in the thousands place, so its value is 8 000.



The Same Digit Can Change Value

Compare the two 7s in 70 000 73.

The first 7 is in the ten-thousands place: 70 000.

The second 7 is in the thousands place: 7 000.

Moving one place left makes a digit ten times as valuable.



Compare From the Greatest Place

1. Line up the place values.
2. Compare the greatest place first.
3. If the digits match, move one place right.
4. Stop at the first different digit.

Use $<$, $=$ to record the comparison.



Worked Comparison

47 905 ? 48 105

Ten thousands $4 = 4$

Thousands $7 < 8$

At the thousands place decides.

Therefore, $47\ 905 < 48\ 105$.



Ascending Order

Ascending means from least to greatest.

Order 45 210, 45 120, 45 201, 45 120

$45\ 120 < 45\ 120 < 45\ 201 < 45\ 210$

Compare from the greatest place at every step.



Descending Order

Descending means greatest to least.

Order: 68 004, 67 940, 68 040, 68 400

$68\ 040 > 68\ 004 > 67\ 940$



Missing-Digit Reasoning

$$47 \square 12 > 47 812$$

The ten-thousands and thousands digits match.

The hundred digit must be greater than 8.

Only 9 works.

$$47 912 > 47 812$$



Estimate on a Number Line

Between 70 000 and 80 000 the midpoint is 75 000.

72 400 is below the midpoint, so it lies between 70 000 and 75 000.

Use benchmark numbers and place value to estimate a number's position.



Guided Practice

1. Write 58 021 in expanded form.
2. What is the value of 9 in 39 14?
3. Compare 80 000 and 80 900.
4. Round 72 400 using 5 ten thousands.

Explain in which place-value idea you used each time.

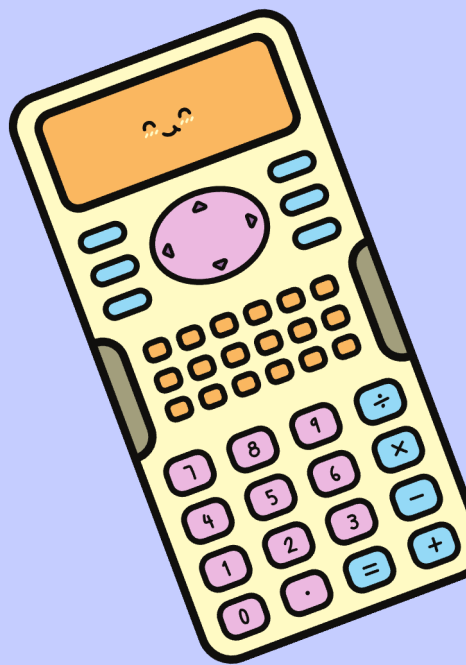
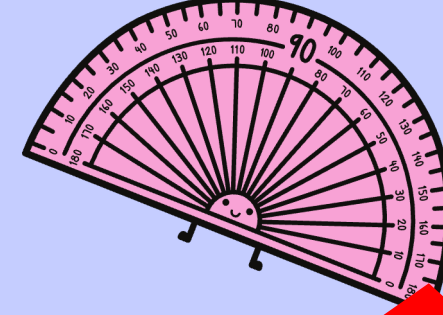
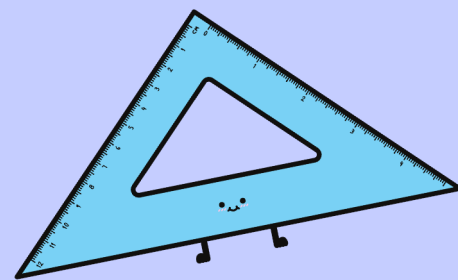
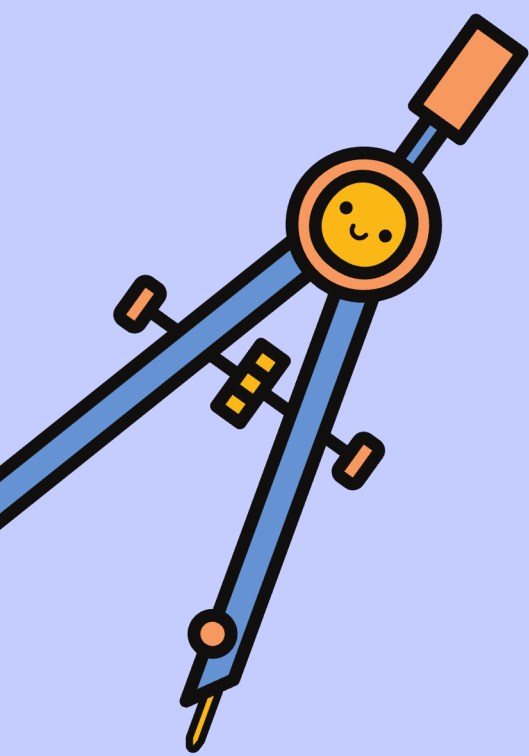


Recap

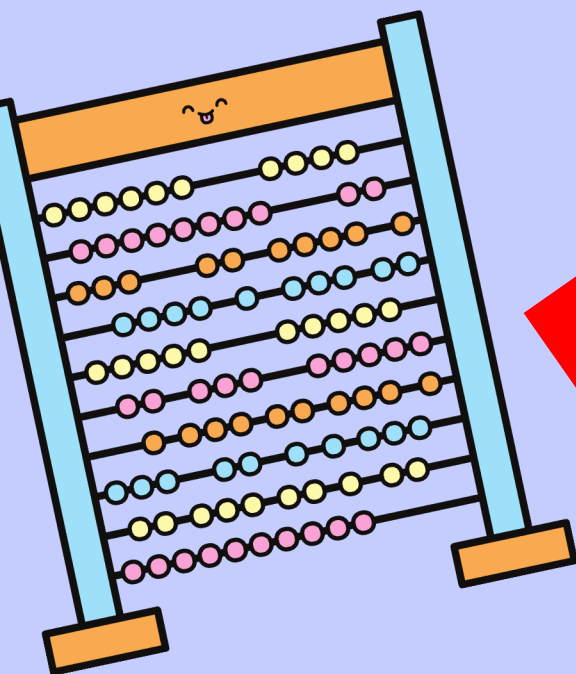
Can you now...

- read and write numbers to 100,000?
- identify every digit, name and value?
- connect standard, word, expanded and renamed forms?
- use zero correctly?
- compare and order with clear reasoning?

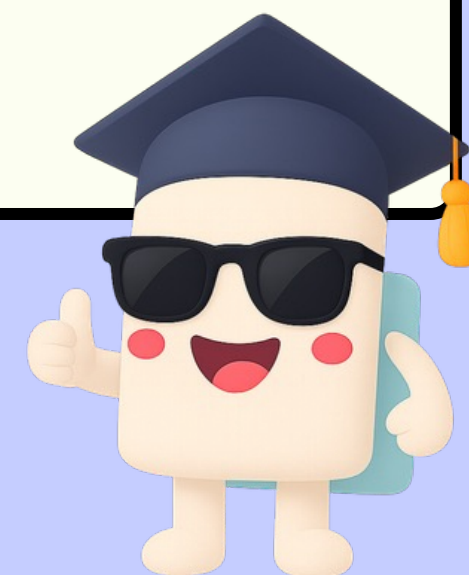
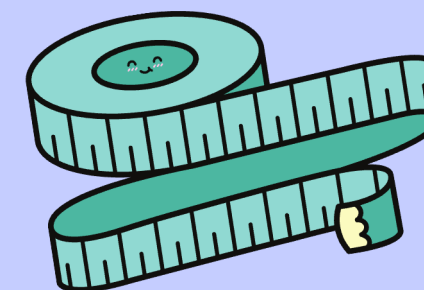
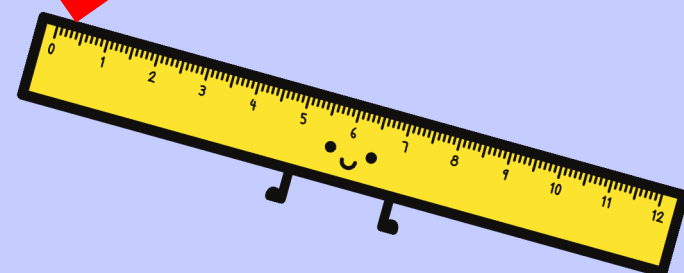




Well Done!



PREVIEW



Place Value
to 100,000
Quiz



Question 1

What is the value of the 6 in 64 200?

- A. 6
- B. 600
- C. 6 000
- D. 60 000



Answer 1

12,000

The 2 is in the ten-thousands place.



Question 2

True or false?

In 83 070, the 0 in the hundreds place shows there are no hundreds.



Answer 2

The zero holds the hundred place and the other digits keep their correct values.



Question 3

Write this number in standard form:

forty-four thousand, nine hundred and six



Answer 3

42 900

PREVIEW



Question 4

Which is the expanded form of 58 001?

A. $50\ 000 + 8\ 000 + 20 + 1$

B. $50\ 000 + 800 + 20 + 1$

C. $5\ 000 + 8\ 000 + 20 + 1$

D. $50\ 000 + 8\ 000 + 200 + 1$



Answer 4

$$A. 50\,000 + 8\,000 + 20 + 1$$



Question 5

Write $>$ or $=$.

80 090 $\square$ 80 900



Answer 5

80 000 < 80 000

The hundred place decides: hundreds is less than 9 hundreds.



Question 6

Put the numbers in ascending order:

210, 53 12, 53 201, 53 120



Answer 6

53 012 53 120, 53 01, 53 210



Question 7

True or false?

52,414 is 4 tens thousands + 12 thousands + 4 hundreds



Answer 7

$$4000 + 1200 + 400 = 5200.$$



Question 8

Fill the missing digit.

$$5 \square 4 2 > 58\,403$$



Answer 8

$$59\,411 > 58\,403.$$



Question 9

Use 1, 0, 9, 2 and 4 once each.

What is the greatest five digit number you can make?



Answer 9

120

Place the digits available in each place from left to right.



Question 10

and only fix the error.

$$73\ 000 = 70\ 000 + 3\ 000 + 500 + 60$$

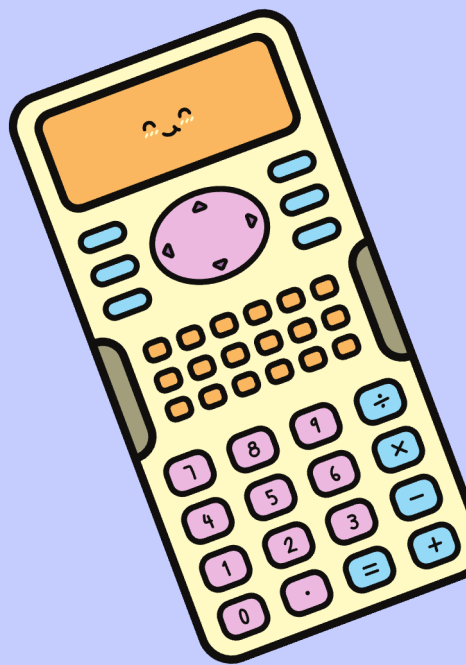
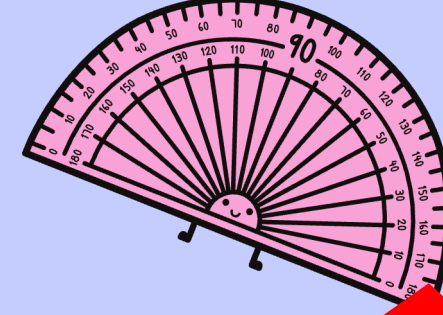
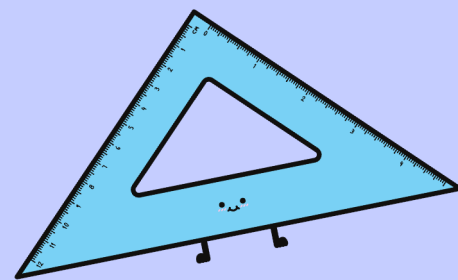
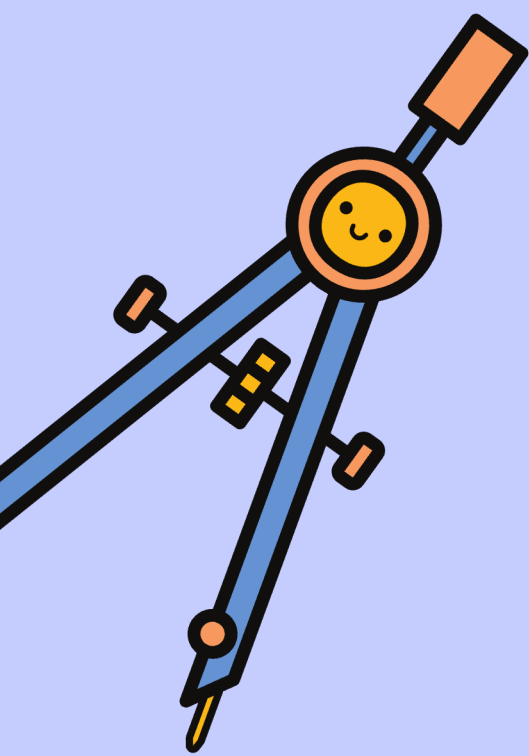


Answer 10

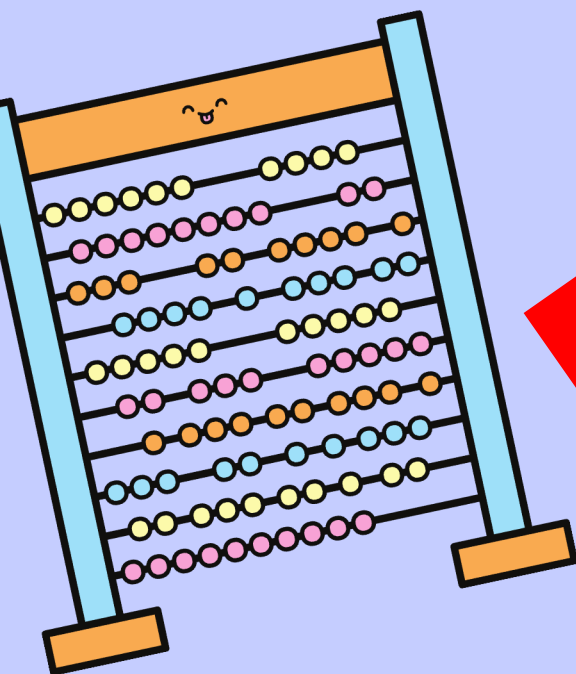
The 60 should be 6.

$$73\ 606 = 70\ 000 + 3\ 000 + 500 + 6$$





Well Done!



PREVIEW

