# Let's Do MATHEMATICS Worktext 5A <br> WN: 

for learners 10 - 11 years old

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## Let's Do Mathematics

Let's Do Mathematics is a series covering levels K-6 and is fully aligned to the United States Common Core State Standards (USCCSS). Each level consists of two books (Book A and Book B) and combines textbook-style presentation of concepts as well as workbook practice.

Central to the USCCSS is the promotion of problem-solving skills and reasoning. Let's Do Mathematics achieves this by teaching and presenting concepts through a problem-solving based pedagogy and using the concrete-pictorial-abstract (CPA) approach. Learners acquire knowledge and understanding of concepts through a guided progression beginning with concrete examples and experiences which then flow into pictorial representations and finally mastery at the abstract and symbolic level. This approach ensures that learners develop a fundamental understanding of concepts rather than answering questions by learned procedures and algorithms.

Key features of the series include:

## Anchor Task

Open-ended activities serve as the starting point for understanding new concepts. Learners engage in activities and discussions to form concrete experiences before the concept is formalized.

## 咸 Let's Learn

Concepts are presented in a clear and colorful manner. Worked problems provide learners with guided step-by-step progression through examples. Series mascots provide guidance through helpful comments and observations when new concepts are introduced.


## Let's Practice

Learners demonstrate their understanding of concepts through a range of exercises and problems to be completed in a classroom environment. Questions provide a varying degree of guidance and scaffolding as learners progress to mastery of the concepts.

## At Home

Further practice designed to be completed without the guidance of a teacher. Exercises and problems in this section follow on from those completed under Let's Practice.


[^0]
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## 1 Whole Numbers

A. Anchor Task



## Numbers Beyond 1,000,000

咀
## Let's Learn

Use place value disks to show numbers up to 1 million.


10 hundreds


1 thousand


10 thousands


1 ten thousand


10 ten thousands


1 hundred thousand


10 hundred thousands


1 million


One million is a one followed by 6 zeros.

Find the number represented in the place value chart.
(a)

| Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | 0 |  |

We say: Thirty thousand, five hundred forty.
We write: 30,540.
(b)

| Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |

We say: Five hundred forty thousand, nine hundred one.
We write: 540,901.
(c)

| Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  | 0 |  | 0 |

We say: Three hundred fifty-one thousand, four hundred four.
We write: 351,404.
(d)

| Millions | Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 |  |  | 0 | 0 |

We say: Three million, sixty thousand, forty-five.
We write: 3,060,045.
(e)

| Millions | Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 0 |  |  |  |

We say: Five million, five thousand, four hundred eighty-nine.
We write: 5,005,489.
(f)

| Millions | Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 |  | 0 | 0 |  | 0 |  |

We say: Six million, nine hundred fifty-four thousand, eight hundred.
We write: 6,954,800.
(g)

| Millions | Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 0 |  |  |

We say: Nine million, eight hundred thousand, six hundred fifty.
We write: 9,800,650.

Count on in hundreds.
(a)

(b)


Count on in thousands.
(a)

(b)


Count on in ten thousands.
(a)

(b)


Count on in hundred thousands.
(a)

(b) $+100,000+100,000+100,000+100,000$


Count on in millions.
(a)

(b)
$+1,000,000+1,000,000+1,000,000+1,000,000$

(c)

(d)
+1,000,000 +1,000,000 +1,000,000 +1,000,000


## Let's Practice

1. Write as numerals and words.
(a)

| Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  | 0 |  |  |

(b)

| Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  | $O$ |  |  |

(c)

| Millions | Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 0 |  |  |  |

$\qquad$
$\qquad$
2. Write the numbers.
(a) One hundred thousand, fifty-six.
$\qquad$
(b) Four hundred sixty thousand, eight hundred fifty-four.
$\qquad$
(c) Nine million, four thousand, eighty-one.
$\qquad$
(d) Five million, seven hundred eighty thousand, two hundred twelve.
$\qquad$
(e) Two million, seventy thousand, nine hundred thirty-five.
$\qquad$
(f) Eight million, six hundred forty-five thousand, eight hundred eleven.
$\qquad$
3. Write in words.
(a) $1,758,284$
$\qquad$
$\qquad$
(b) $4,576,264$
$\qquad$
$\qquad$
(c) $9,649,538$
4. Count on in $1,000 \mathrm{~s}$.
(a) 5,856, $\qquad$
$\qquad$
$\qquad$
(b) 254, $\qquad$ , $\qquad$ , $\qquad$
(c) 87,934 , $\qquad$
$\qquad$
$\qquad$
(d) 563,573 , $\qquad$ — $\qquad$
5. Count on in $10,000 \mathrm{~s}$.
(a) 98,546 , $\qquad$
$\qquad$ ,
(b) 89,354 , $\qquad$ , $\qquad$ , $\qquad$
(c) 8,345 , $\qquad$ , $\qquad$ $\xrightarrow{ }$
(d) 265,925 , $\qquad$
$\qquad$
$\qquad$
6. Count on in 100,000 s.
(a) 530 , $\qquad$ , $\qquad$ , $\qquad$
(b) 640,240 , $\qquad$
$\qquad$
(c) 64,012 ,
(d) $1,542,155$, $\qquad$
$\qquad$
$\qquad$ ,
7. Count on in $1,000,000 \mathrm{~s}$.
(a) $1,754,899$, $\qquad$
$\qquad$ ,
(b) $5,983,085$, $\qquad$ , $\qquad$
(c) 879,690 , $\qquad$ ,
(d) $3,958,684$, $\qquad$
$\qquad$

## Hands On

Form pairs of students.
Each pair receives a dice and a place value chart. Roll the dice 7 times to form a 7-digit number. Write the number in the place value chart. Your teacher will say a count on number. Take turns counting on from your number.


| Millions | Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |

## At Home

1. Match.

eight million, four hundred forty-four thousand, eighty

- 


nine million, two hundred thousand, six hundred two

six hundred fifty thousand, three hundred sixty-six

2. Write as numerals and words.
(a)

| Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 0 | 0 |  |  |  |

(b)

| Millions | Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | 0 | 000 | 0 |  | 0 |

3. Count on in 10,000s.
(a) 98,546 $\qquad$
$\qquad$ ,
(b) 89,354 , $\qquad$ , $\qquad$ , $\qquad$
4. Count on in 100,000 s.
(a) 54,570 , $\qquad$ , $\qquad$ , $\qquad$
(b) $2,316,546$, $\qquad$
$\qquad$
$\qquad$
5. Count on in $1,000,000$ s.
(a) 24,641 ,
(b) $4,234,231$, $\qquad$ , $\qquad$

## Place Value

## 皿 <br> Let's Learn

Find the value of each digit in the numbers shown.
(a)

| Millions | Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :--- | :--- | :--- | :--- | :--- | :--- | :---: |
|  |  |  |  | 0 |  |  |

The digit in the millions place is 3 . It represents $3,000,000$.
The digit in the hundred thousands place is 1 . It represents 100,000 .
The digit in the ten thousands place is 2 . It represents 20,000 .
The digit in the thousands place is 4 . It represents 4,000 .
The digit in the hundreds place is 6 . It represents 600.
The digit in the tens place is 8 . It represents 80.
The digit in the ones place is 7 . It represents 7.
$3,000,000+100,000+20,000+4,000+600+80+7=3,124,687$


The number can be found by adding the place values of each digit!
(b)


The digit in the millions place is 4 . It represents 4,000,000. The digit in the hundred thousands place is 6 . It represents 600,000. The digit in the ten thousands place is 3 . It represents 30,000.
The digit in the thousands place is 1 . It represents 1,000 .
The digit in the hundreds place is 2 . It represents 200.
The digit in the tens place is 5 . It represents 50.
The digit in the ones place is 1 . It represents 1.
$4,000,000+600,000+30,000+1,000+200+50+1=4,631,251$


What is the value of the digit in the millions place?

Let's find the value of each digit in the number.
(a)


The value of the digit 5 is 500,000 .
The value of the digit 2 is 20,000 .
The value of the digit 4 is 4,000 .
The value of the digit 6 is 600 .
The value of the digit 9 is 90 .
The value of the digit 1 is 1 .
$500,000+20,000+4,000+600+90+1=524,691$
(b)


The value of the digit 1 is $1,000,000$.
The value of the digit 4 is 400,000 .
The value of the digit 6 is 60,000 .
The value of the digit 3 is 3,000 .
The value of the digit 2 is 200 .
The value of the digit 9 is 90 .
The value of the digit 0 is 0 .
$1,000,000+400,000+60,000+3,000+200+90=1,463,290$
(c)


The value of the digit 6 is $6,000,000$.
The value of the digit 7 is 700,000 .
The value of the digit 8 is 80,000 .
The value of the digit 2 is 2,000 .
The value of the digit 1 is 100 .
The value of the digit 4 is 40 .
The value of the digit 3 is 3 .
$6,000,000+700,000+80,000+2,000+100+40+3=6,782,143$
(d)


The value of the digit 8 is $8,000,000$.
The value of the digit 1 is 100,000.
The value of the digit 4 is 40,000 .
The value of the digit 9 is 9,000 .
The value of the digit 7 is 700 .
The value of the digit 6 is 60 .
The value of the digit 2 is 2 .
$8,000,000+100,000+40,000+9,000+700+60+2=8,149,762$

## Let's Practice

1. Write the numbers shown in the place value abacus.

(b)

(c)

(d)

$\qquad$
(e)

(f)

2. Write the number in its expanded form.
(a) 546,540
$\qquad$
$\qquad$
(b) 5,265,640
$\qquad$
$\qquad$
(c) $4,729,572$
$\qquad$
$\qquad$
(d) $1,730,275$
$\qquad$
$\qquad$
(e) $6,289,365$
$\qquad$
$\qquad$
3. Write the value of the digit.
(a) $4,37,863$ I
(b)
681,54.2

(d) $\underset{1}{9}, 373,304$
$\qquad$
$\qquad$
4. Write the value of each digit. Then add the values.

(b)


## @ Solve It!

Halle is helping her father paint the house. She accidentally spills some paint onto the brochure containing the price for her new house. The real estate agent leaves some clues to help Halle and her father find the price of the house. Use the clues to help them find the house price!


- The price has 7 digits.
- The price is greater than 2 million and less than 3 million.
- The price is an even number.
- The sum of the digits in the hundreds, tens and ones place is 8 .
- The digit in the ten thousands place is 5 .
- No digit is equal to 4 .
- All digits are less than 8 and no 2 digits are the same.

House price \$ $\qquad$

## At Home

1. Match the numbers in two ways.

## 563,859

five hundred sixty-three

- thousand, eight hundred fifty-nine
$3,000,000+700,000+40,000$
$+8,000+100+60+7$
five hundred sixty-nine
- thousand, one hundred ninety-four


## 3,748,167

- $5,000,000+100,000+70,000$
$+8,000+100+90+3$
three million, seven hundred


## 5,178,193

- forty-eight thousand, one hundred sixty-seven
five million, one hundred
- seventy-eight thousand, one hundred ninety-three


## 569,194

$500,000+60,000+3,000+$
$800+50+9$

- $500,000+60,000+9,000+$

2. Write the numbers shown in the place value abacus.
(a)


$\qquad$
3. Write the numbers represented by the place value disks.
(a)

(b)

4. Write the value of each digit. Then add the values.
(a)

5. Add the place values.
(a) $40,000+2,000+200+50=$ $\qquad$
(b) $100,000+60,000+1,000+7=$ $\qquad$
(c) $400,000+50,000+300+60+1=$ $\qquad$
(d) $500,000+80,000+3,000=$ $\qquad$
(e) $3,000,000+20,000+800+4=$ $\qquad$
(f) $400,000+70,000+400+30+2=$ $\qquad$
(g) $7,000,000+600,000+10,000+8,000+800+20+2=$ $\qquad$
(h) $4,000,000+500,000+40,000+7,000+500+60+6=$ $\qquad$

## Powers of 10 and Exponents

## 凅 Let's Learn

We can show repeated addition using multiplication.
$10+10+10+10=40$
$4 \times 10=40$
Similarly, we can show repeated multiplication with exponents. Halle uses place value disks to show repeated multiplication of 10 .


The base is the number that is repeatedly multiplied.
The exponent tells how many times the base is multiplied.
We write: $10^{4}$
We say: the fourth power of 10

Let's look at the powers of 10 to 1,000,000.

| 1 | $10^{0}=1$ |
| :--- | :--- |
| $1 \times 10$ | $10^{1}=10$ |
| $1 \times 10 \times 10$ | $10^{2}=100$ |
| $1 \times 10 \times 10 \times 10$ | $10^{3}=1,000$ |
| $1 \times 10 \times 10 \times 10 \times 10$ | $10^{4}=10,000$ |
| $1 \times 10 \times 10 \times 10 \times 10 \times 10$ | $10^{5}=100,000$ |
| $1 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$ | $10^{6}=1,000,000$ |

Dominic read in his space book that the distance from Earth to the moon is about $4 \times 10^{5} \mathrm{~km}$. Write the distance as a whole number.
$10^{5}=100,000$

$$
\begin{aligned}
4 \times 10^{5} & =4 \times 100,000 \\
& =400,000
\end{aligned}
$$



So, the distance from Earth to the moon is about $400,000 \mathrm{~km}$.

Blue whales can reach a mass of $150,000 \mathrm{~kg}$. Find the mass as a whole number multiplied by a power of 10 .

$$
\begin{aligned}
150,000 & =15 \times 10,000 \\
& =15 \times 10^{4}
\end{aligned}
$$



So, blue whales can reach a mass of $15 \times 10^{4} \mathrm{~kg}$.

## Let's Practice

1. Write in exponent form in numbers and in words.
(a) $10 \times 10 \times 10$

Exponent form: $\qquad$ Word form: $\qquad$
(b) $10 \times 10$

Exponent form: $\qquad$ Word form: $\qquad$
(c) $10 \times 10 \times 10 \times 10$

Exponent form: $\qquad$ Word form: $\qquad$
(d) $10 \times 10 \times 10 \times 10 \times 10 \times 10$

Exponent form: $\qquad$ Word form:
2. Write the number.
$\qquad$ (b) $10^{2}=$ $\qquad$
(c) $10^{5}=$
(d) $10^{4}=$ $\qquad$
(e) $10^{3}=$ $\qquad$ (f) $10^{6}=$ $\qquad$
(g) $10^{\circ}=$ $\qquad$ (h) $10^{7}=$ $\qquad$
3. Write the number.
(a) $2 \times 10^{2}=$ $\qquad$
(b) $3 \times 10^{1}=$ $\qquad$
(c) $15 \times 10^{3}=$ $\qquad$ (d) $25 \times 10^{3}=$ $\qquad$
(e) $9 \times 10^{5}=$ $\qquad$ (f) $3 \times 10^{6}=$ $\qquad$
(g) $99 \times 10^{2}=$ $\qquad$ (h) $10 \times 10^{4}=$ $\qquad$

## At Home

Match the numbers in two ways.

- 10
- $10 \times 10 \times 10$
$10^{4}$
- 10,000
- $1 \times 10$
$10^{1}$

100

## $10^{3}$

- $10 \times 10 \times 10 \times 10$
- $10 \times 10$


## Comparing and Ordering Numbers

## 舄 <br> Let's Learn

(a) Compare $1,422,645$ and $1,432,523$.

Which number is greater?

| Millions | Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 4 | 2 | 2 | 6 | 4 | 5 |
| 1 | 4 | 3 | 2 | 5 | 2 | 3 |

First, compare the values in the millions place. The values in the millions place are the same. Compare the values in the next place - hundred thousands. The values in the hundred thousands place are also the same. Compare the values in the ten thousands place. 3 ten thousands is greater than 2 ten thousands.

So, $1,432,523$ is greater than $1,422,645$.
(b) Compare the numbers $3,619,381$ and $3,619,728$.

| Millions | Hundred <br> Thousands | Ten <br> Thousands | Thousands | Hundreds | Tens | Ones |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3 | 6 | 1 | 9 | 3 | 8 | 1 |
| 3 | 6 | 1 | 9 | 7 | 2 | 8 |

The values in the millions, hundred thousands, ten thousands and thousands are the same. Compare the values in the hundreds place. 3 hundreds is smaller than 7 hundreds.
$3,619,381<3,619,728 \quad 3,619,728>3,619,381$


[^0]: