Study Guide
Topic 1 and 2

Make corrections as you go

Set A pages 7–12

TOPIC 1

Reteaching

Write the word form and tell the value of the underlined digit for 930,365.

Nine hundred thirty thousand, three hundred sixty-five.

Since the 0 is in the thousands place, its value is 0 thousands or 0.

Use digital tools to solve these and other Reteaching problems.

Remember you can find the value of a digit by its place in a number.

Write the word form and tell the value of the underlined digit.

1. 9,000,009
2. 3,485,002,000
3. 25,678
4. 17,874,000,000

Remember, word form is the number written like it is spoken.
The value of the number is the digit and its place value.

1) nine million, nine; 9 million

2) three billion, four hundred eighty-five million, two thousand; 80 million

3) twenty-five thousand, six hundred seventy-eight; 5 thousand

4) seventeen billion, eight hundred seventy-four million; 10 billion

Set B pages 13–18

A place-value chart can help you write decimals in standard form, expanded form, and word form.

Standard form: 8.026
Word form: Eight and twenty-six thousandths
Expanded form: 8 + 0.02 + 0.006

Remember the word *and* is written for the decimal point.

Write each number in standard form.

1. eight and fifty-nine hundredths
2. seven and three thousandths
3. six and eight hundred thirty-seven thousandths
4. 2 + 0.2 + 0.05 + 0.001
5. 3 + 0.2 + 0.004
6. 0.6 + 0.03 + 0.006

Set C pages 19–24

Standard form is the digits.
Expanded form is each digit written out by its value.
Word form is the number written like it is spoken.

1. 8.59
2. 7.003
3. 6.837
4. 2.251
5. 3.204
6. 0.636

Set C pages 19–24

Compare. Write >, <, or =.

8.45 ◯ 8.47

Line up the decimal points. Start at the left to compare. Find the first place where the digits are different.

8.45
8.47

0.05 < 0.07 So, 8.45 < 8.47.

6. 0.6 + 0.03 + 0.006

Remember that equivalent decimals, such as 0.45 and 0.450, can help you compare numbers.

Compare. Write >, <, or =.

1. 0.584 ◯ 0.58

2. 9.327 ◯ 9.236

3. 5.2 ◯ 5.20

4. 5.643 ◯ 5.675

5. 0.07 ◯ 0.08

Equivalent Decimals are decimals that may look a little different but have the same value. Like .5 and .50
To compare decimals, line them up by their decimal point, and start left to right.

1) 0.584 > 0.58
2) 9.327 > 9.236
3) 5.2 = 5.20
4) 5.643 < 5.675
5) 0.07 < 0.08

Set D pages 25–30

Round 12.087 to the place of the underlined digit.

12.087 Look at the digit following the underlined digit. Look at 7.

Round to the next greater number of hundredths because $7 > 5$.

12.087 is about 12.09.

Round 9.073 to the place of the underlined digit.

9.073 Look at the digit following the underlined digit. Look at 0.

Since $0 < 5$ the digit in the ones place remains the same.

9.073 is about 9.

Remember that rounding a number means replacing it with a number that tells about how many or how much.

Round each number to the place of the underlined digit.

1. 10.245
2. 73.4
3. 9.145
4. 3.999
5. 13.023
6. 45.398
7. 0.153
8. 0.625
9. 8.978
10. 5.739

11. Raul mails three packages. The packages weigh 13.09 ounces, 13.16 ounces, and 13.8 ounces. Which package's weight is closest to 13 ounces?

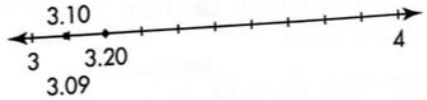
Remember:
Find my number.
Look next door.
Five or higher, raise the score.
Four or less, let it rest.

1) 10.2
2) 70
3) 9.15
4) 4
5)13.02
6) 45.4
7) 0.2
8) 0.63
9) 9
10) 5.7
11) 13.09 ounces is closest to 13 ounces because it is only 9 hundredths away from 13, whereas 13.16 is 16 hundredths away and 13.8 is 8 tenths or 80 hundredths away.

Set E pages 31–36

When you solve problems, you write to explain your answers. You can use words, pictures, or numbers to communicate your reasoning to others.

Megan practiced the long jump for the field day competition. First, she jumped 3.20 meters. Then she jumped 3.09 meters. Which jump was her better jump? Explain.



A number line shows 3.20 to the right of 3.09. Since 3.20 is greater than 3.09, her better jump is 3.20 meters.

Remember a good explanation should be correct, simple, and easy to understand.

1. Mr. Wilson's odometer shows that he has driven 216,784 miles. Explain how to write the number for the odometer reading after he drives 10,000 more miles.

2. The heights of Sara's tomato plants are 1.15 meters, 1.05 meters, and 1.1 meters. Explain how to order the heights from tallest to shortest.

3. Jake's height is 4.5 feet. Explain how to round Jake's height to the nearest foot.

1) After Mr. Wilson drives 10,000 more miles, his odometer will read 226,784 miles because he is adding an extra 10,000 miles to his original odometer number.

2) To order the plants from tallest to shortest, first stack the numbers by their decimals:
1.15
1.05
1.1
Then start from left to right and compare each place value. Annex any zeroes as needed.
1.15, 1.1, 1.05

3) When you round a number to the nearest foot, you are rounding to the nearest whole number (the ones place). My number is 4, next door is a 5. I know that five or higher means I round up, so 4.5 rounds to 5 feet.

Set A pages 47–52

2 Reteaching

Add 15.3 + 1.1 + 1.7 using mental math.

Use compatible numbers. These are numbers that are easy to calculate mentally.

15.3 and 1.7 are compatible numbers.

The Commutative Property of Addition allows us to add in any order.

$$15.3 + 1.1 + 1.7 = 15.3 + 1.7 + 1.1$$
$$= 17.0 + 1.1$$
$$= 18.1$$

So, 15.3 + 1.1 + 1.7 = 18.1.

Remember that you can use compatible numbers or compensation to find sums and differences.

Use mental math to add or subtract.

1. 8.6 + 23.4 + 1.4
2. 27 − 9.9
3. 13.5 + 5.7 + 36.5
4. 205.4 − 99.7
5. $12.35 + $25.89 + $19.65
6. 1.29 + 3.72 + 5.15 + 2.85

Mental Math = re-arranging the numbers to make them easier to add or subtract, and finding things that add to 10.

1) 1.4 + 8.6 = 10 + 23.4 = 33.4
2) 27 - 9 = 18 - .9 = 17.1
3) 13.5 + .5 = 14 + 36 = 50 + 5.7 = 55.7
4) 205.4 - 100 = 105.4 + .3 = 105.7
5) 12.35 + .65 = 13 + 19 = 32 + 25 = 57 + .89 = $57.89
6) 2.85 + .15 = 3 + 5 = 8 + 1 = 9 + 3.72 = 12.72 + .29 = 13.01

6. 1.29 + 3.72 + 5.15 + 2.85

Set B pages 53–58

Estimate 19.9 + 17.03.

$$\begin{array}{rcll} 9.9 & \longrightarrow & 20 & \text{Round to the nearest} \\ +\ 17.03 & \longrightarrow & +\ 17 & \text{whole number.} \\ & & 37 & \end{array}$$

19.9 + 17.03 is about 37.

Estimate 22.4 − 16.2.

$$\begin{array}{rcll} 22.4 & \longrightarrow & 20 & \text{Use compatible} \\ -\ 16.2 & \longrightarrow & -\ 15 & \text{numbers.} \\ & & 5 & \end{array}$$

22.4 − 16.2 is about 5.

Remember that using compatible numbers to estimate is often easier than rounding.

Estimate each sum or difference.

1. 76 + 23
2. 358 + 293
3. 15.01 − 4.4
4. 80.01 + 2.89
5. 25,003 − 12,900
6. 9.5 + 9 + 8.6

Set C pages 59–64

Estimating means rounding or finding compatible numbers. Round or find compatible numbers BEFORE adding or subtracting. There can be multiple answers for each problem depending on how you estimated.

1) 80 + 20 = 100
2) 350 + 300 = 650 OR 400 + 300 = 700
3) 15 - 5 = 10
4) 80 + 3 = 83
5) 25,000 - 13,000 = 12,000 OR 30,000 - 10,000 = 20,000
6) 10 + 10 + 10 = 30 OR 10 + 9 + 9 = 28

When you are adding and subtracting larger numbers, you use the same strategies such as regrouping and borrowing.

1. 15,430
2. 5,747

Set C pages 59–64

Find 6,259 – 2,488.

Line up numbers by place value. Subtract the ones, and then subtract the tens, hundreds, and thousands. As you subtract, regroup if needed.

```
 6,259
-2,488
     1
```

```
 5 11 15
 6,259
-2,488
 3,771
```

Remember to use what you already know about regrouping to help add and subtract with larger numbers.

Add or subtract. Check the answer to subtraction exercises by adding.

1. 9,371 + 6,059

```
  9,371
+ 6,059
 15,430
```

2. 14,506 − 8,759

```
 0 13
 14,506
- 8,759
  5,747
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Set D pages 65–82

Lucy bought 3.12 pounds of pears and 9 pounds of apples. Find how many more pounds of apples than pears Lucy bought.

Write the numbers. Add a decimal point to the whole number. Annex zeros. Line up the decimal points.

$$\begin{array}{r} 9.00 \\ -\ 3.12 \\ \hline \end{array}$$

Subtract the hundredths, tenths, and ones.

$$\begin{array}{r} {}^{8}\cancel{9}.{}^{10}\cancel{0}{}^{10}\cancel{0} \\ -\ 3.12 \\ \hline 5.88 \end{array}$$

Remember to annex zeros so that each place has a digit.

1. $7.06 + 0.85$
2. $24.07 - 5.316$
3. $51.92 - 28.003$
4. $8.71 - 0.4$
5. $98 + 3.79$
6. Talia measured two strings. The green string was 2.37 cm long. The blue string was 4 cm long. How many centimeters longer was the blue string than the green string?

Remember to line up the decimals and annex (add) zeroes if needed BEFORE adding or subtracting.

1) 7.91
2) 18.754
3) 23.917
4) 8.31
5) 101.79
6) This is a subtraction problem because we are trying to find the difference between the green and blue string. 4 - 2.37 = 1.63cm
The blue string is 1.63 cm longer than the green string.

Set E pages 83–88

When you solve multi-step problems, you can use strip diagrams to model the steps.

Gene wants to buy a catcher's mitt for $52.00 and baseball shoes for $95.75. He has a coupon for $8.50 off the price of the catcher's mitt.

How much will Gene have to pay for the

39.25

1. Earnings
Mag. ? ← what's left
16.95

2. 22.30
DVD DVD

Remember to break up the information into smaller parts that can be shown with strip diagrams.

Write and answer the hidden question or questions. Then solve.

DATA

Job	Earnings
Mowing lawn	$13.50
Raking leaves	$11.00
Walking dogs	$14.75

1. Pedro earned money doing different jobs for neighbors. He kept a table of what he earned. If Pedro bought a magazine subscription for $16.95 from his earnings, how much money did he have left?

2. Now Pedro wants to buy two DVDs for $10.99 each. Does he have enoug' money left over?

Drawing pictures like strip diagrams helps us understand word problems. When you are reading word problems, circle important information and read the problem several times to understand it.

1) To solve this problem, we first have to find out what Pedro earned from his jobs. We need to add up 13.50 + 11 + 14.75 = $39.25 If Pedro buys a magazine subscription, he is spending some of the money he earned. So now, we have to subtract $39.25 - $16.95. Pedro has $22.30 left.

2) We know that Pedro has $22.30 left. The two DVDs together cost $21.98 (10.99 + 10.99). Pedro has enough money to buy the two DVDs and he will have 32 cents left if he buys them.