5th Grade Unit 1 Parent Packet

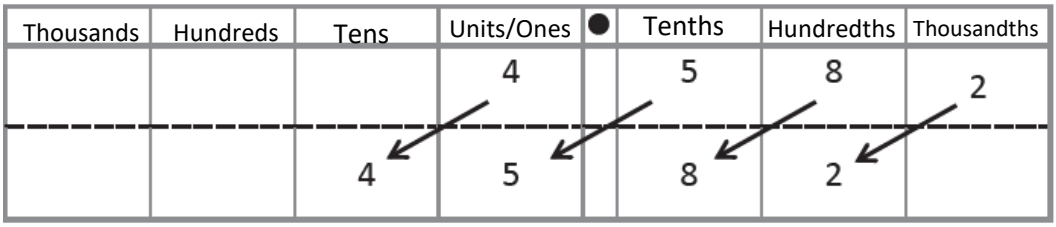
Standard: 5.NBT.1

- I can recognize that a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

Example:
Students have learned that each number has a specific place value. Now they are learning that the value of the number in each place value is 10 times bigger than the number to its right, and it is 1/10 the size of the number to its left.

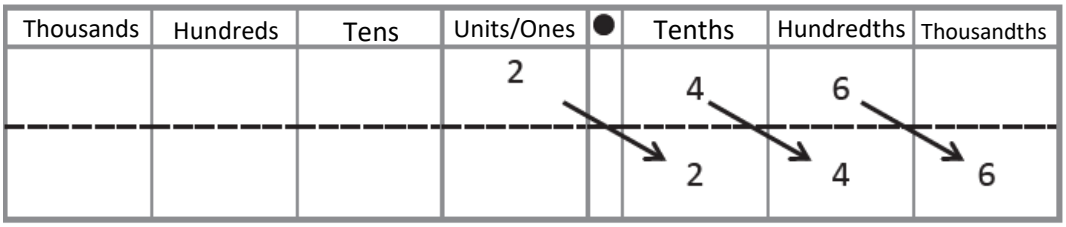
Use the place value chart and arrows to show how the value of each digit changes. The first one has been done for you.

a. $4.582 \times 10 =$ 45.82



Use the place value chart and arrows to show how the value of each digit changes. The first one has been done for you.

a. $2.46 \div 10 =$ 0.246



Misconceptions:
A common misconception that students have when trying to extend their understanding of whole number place value to decimal place value is that as you move to the left of the decimal point, the number increases in value.

Supplementary Material:
https://www.youtube.com/watch?v=dZPOCU10TqY - Video
https://www.commoncoresheets.com/Math/Values/Examining%20Digit%20Place%20Values/English/1.pdf –practice sheets

Standard: 5.NBT.2

- I can explain patterns in the number of zeros of the product when multiplying a number by powers of 10.
- I can explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.
- I can use whole-number exponents to denote powers of 10.

Example:
Students have been introduced to multiplying by 10, 100, 1,000, etc. Now we will introduce them to writing and multiplying these numbers by a power of 10, which is just another way to write 10, 100, 1,000, etc.

1,000,000	100,000	10,000	1,000	100	10
(10 × 10 × 10) × (10 × 10 × 10)	10 × 10 × (10 × 10 × 10)	10 × (10 × 10 × 10)	(10 × 10 × 10)	10 × 10	10 × 1
10^6	10^5	10^4	10^3	10^2	10^1

$$2.5 \times 10^3 = 2.5 \times (10 \times 10 \times 10) = 2.5 \times 1{,}000 = 2{,}500$$

$$350 \div 10^3 = 350 \div 1{,}000 = 0.350 = 0.35$$

Misconceptions:
The biggest misconception here is that students think that the exponent beside the 10 means to multiply by that number. For example students think 10^3 means 10 x 3 = 30 but what it really means is 10 x 10 x 10 = 1,000

Supplementary Material:
https://www.youtube.com/watch?v=YJdCw2fK-Og - video
https://www.math-drills.com/powersoften.php - practice sheets

Standard: 5.NBT.3

- I can read, write, and compare decimals to thousandths.
- I can write decimals to thousandths using standard form, word form, and expanded form.
- I can compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

Example:
Students will learn to read, write, and compare decimals to the thousandths. They will also be able to write decimals to the thousandths using standard form, word form, and expanded form.

Word Form:

73.273 seventy-three and two hundred seventy-three thousandths

Standard Form:

0.273 or $\frac{273}{1{,}000}$

Expanded Form:

74.672= (7x 10)+(4x1)+(6 x0.1)+(7x0.01)+(2x0.001) or (7x10)+(4x1)+(6x$\frac{1}{10}$)+ (7x$\frac{1}{100}$)+ (2x$\frac{1}{1000}$)

Comparing Decimals:

34.223 < 34.232

	3	4	2	2	3
	3	4	2	3	2

Misconceptions:

For this standard students have a hard time remembering what each form is. This is just something that students have to practice. Another misconception that is directly related to comparing whole numbers is the idea that the longer the number the greater the number. With whole numbers, a 5-digit number is always greater that a 1-, 2-, 3-, or 4-digit number. However, with decimals a number with one decimal place may be greater than a number with two or three decimal places. For example, 0.5 is greater than 0.12, 0.009 or 0.499.

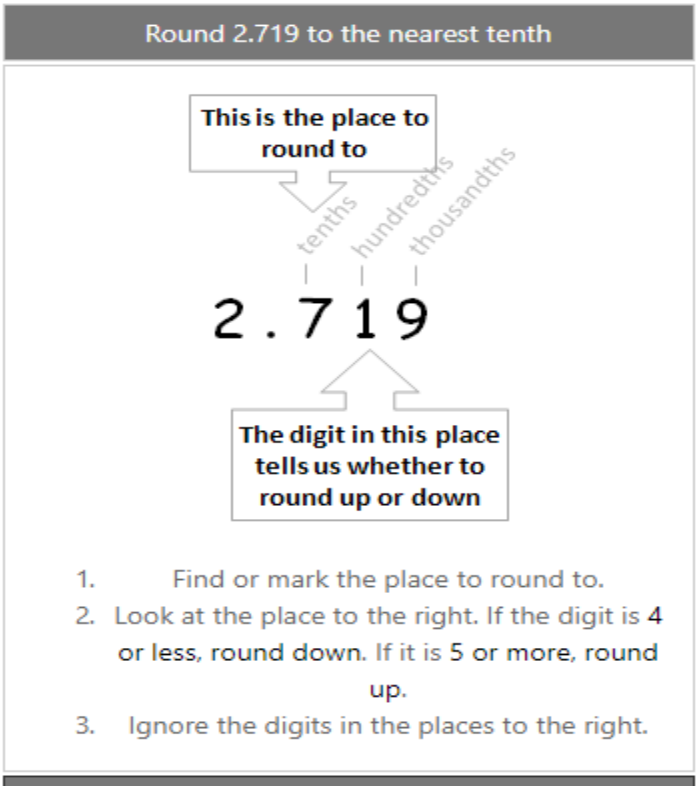
Supplementary Material:

https://www.youtube.com/watch?v=EX9CdUAMpgE - video
https://www.youtube.com/watch?v=JJawhaMqaXg - video
https://www.commoncoresheets.com/ConvertingForms.php - practice sheets
https://www.math-drills.com/decimal.php - practice sheets

Standard: 5.NBT.4

- I can use place value understanding to round decimals to any place.

Examples:



Misconceptions:
Students struggle with remembering which place value is which so they often mess up on their rounding. To help with this practice place value.

Supplementary Material:
https://www.youtube.com/watch?v=_MIn3zFkEcc - video
https://www.math-drills.com/decimal.php- practice sheets

Standard: 5.NBT.7

- I can add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

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Adding Decimals

Examples:

To add decimals, follow these steps:

- Write down the numbers, one under the other, with the **decimal points lined up**
- **Put in zeros** so the numbers have the same length (see below for why that is OK)
- **Then add** using column addition, remembering to put the decimal point in the answer

Example: Add 1.452 to 1.3

Line the decimals up:

```
  1.452
+ 1.3
```

"Pad" with zeros:

```
  1.452
+ 1.300
```

Add:

```
  1.452
+ 1.300
-------
  2.752
```

Misconceptions:

Students often forget to line up the place values or forget to regroup from one place value to the next.

Supplementary Material:

https://www.youtube.com/watch?v=oLh_sIESQnY – video

https://www.math-drills.com/search.php?s=Adding+Decimals&page=1&sort=weekly – practice sheets

Subtracting Decimals

Examples:

To subtract, follow the same method: line up the decimals, then subtract.

Example: What is 7.368 − 1.15 ?

Line the decimals up:

```
  7.368
− 1.15
```

"Pad" with zeros:

```
  7.368
− 1.150
```

Subtract:

```
  7.368
− 1.150
-------
  6.218
```

Misconceptions:

Students often forget to line up the place values or forget how to borrow from one place value to the next.

Supplementary Material:

https://www.youtube.com/watch?v=Eq4mVCd-yyo **- video**

https://www.math-drills.com/search.php?s=Subtracting+Decimals&page=1&sort=weekly **– practice sheets**

Multiplying Decimals

Examples:

To multiply decimal numbers:

1. Multiply the numbers just as if they were whole numbers.

- Line up the numbers on the right - **do not align the decimal points.**
- Starting on the right, multiply each digit in the top number by each digit in the bottom number, just as with whole numbers.
- Add the products.

2. Place the decimal point in the answer by starting at the right and moving a number of places equal to the sum of the decimal places in both numbers multiplied.

$3.77 \times 2.8 = ?$

$$\begin{array}{rl} & 3.77 \ (2 \text{ decimal places}) \\ \times & \underline{2.8} \ (1 \text{ decimal place}) \\ & 3016 \\ & +754 \\ & \overline{10.556} \ (3 \text{ decimal places}) \end{array}$$

Misconceptions:

Students often line up the place values or put the decimal in the wrong place

Supplementary Material:

https://www.youtube.com/watch?v=STyoP3rCmb0- videos

https://www.math-drills.com/search.php?s=Multiplying+decimals&page=1&sort=weekly – practice sheets

Dividing Decimals

Examples:

Dividing with decimals works exactly like regular long division... with just one difference.

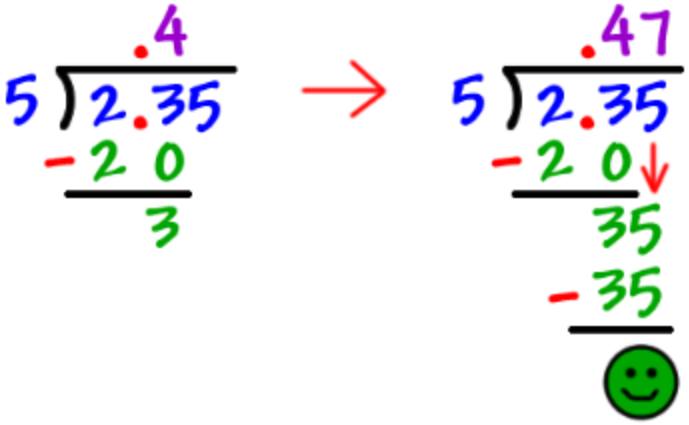
Let's divide 2.35 by 5:

$$2.35 \div 5$$

Set it up the usual way...

And put the decimal point right above the other one.

Now, just go on as usual and work around the decimal points. Just pretend they aren't even there!



Misconceptions:

Students often forget to bring the decimal up.

Supplementary Material:

https://www.youtube.com/watch?v=Z_NHrwK6ALE – video

https://www.math-drills.com/search.php?s=Dividing+Decimals&page=1&sort=weekly – practice sheets