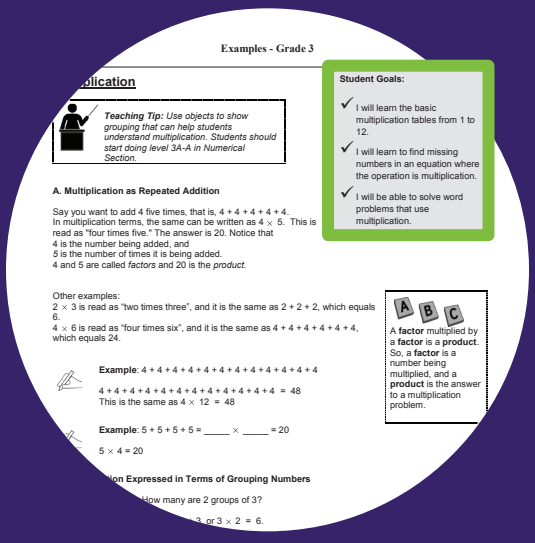
3rd Grade Math

Curriculum Sample

A Grade Ahead's rigorous, year-round enrichment program will challenge your child to a higher academic standard. Our math material consists of two components: **numerical drills** and **curriculum**. Numerical drills are quick exercises that will improve your child's speed and accuracy in computational skills while our monthly curriculum includes mathematical topics that your child will see in school. Both numerical drills and curriculum work together to ensure a complete understanding and mastery of each topic.

The numerical drills and curriculum will each have an in-depth lesson (which we call Examples), as well as homework, and answers. In these next pages, we offer a closer look at what our examples, homework, and answers offer as well as a specific sample of both numerical drills and curriculum.



Examples - Grade 3

Student Goals:

- ✓ I will learn the basic multiplication tables from 1 to 12.
- ✓ I will learn to find missing numbers in an equation where the operation is multiplication.
- ✓ I will be able to solve word problems that use multiplication.

Teaching Tip: Use objects to show grouping that can help students understand multiplication. Students should start doing level 3A-A in Numerical Section.

A. Multiplication as Repeated Addition

Say you want to add 4 five times, that is, 4 + 4 + 4 + 4 + 4.
In multiplication terms, the same can be written as 4 × 5. This is read as "four times five." The answer is 20. Notice that
4 is the number being added, and
5 is the number of times it is being added.
4 and 5 are called *factors* and 20 is the *product*.

A **factor** multiplied by a **factor** is a **product**. So, a **factor** is a number being multiplied, and a **product** is the answer to a multiplication problem.

Other examples:
2 × 3 is read as "two times three", and it is the same as 2 + 2 + 2, which equals 6.
4 × 6 is read as "four times six", and it is the same as 4 + 4 + 4 + 4 + 4 + 4, which equals 24.

Example: 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4

4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 48
This is the same as 4 × 12 = 48

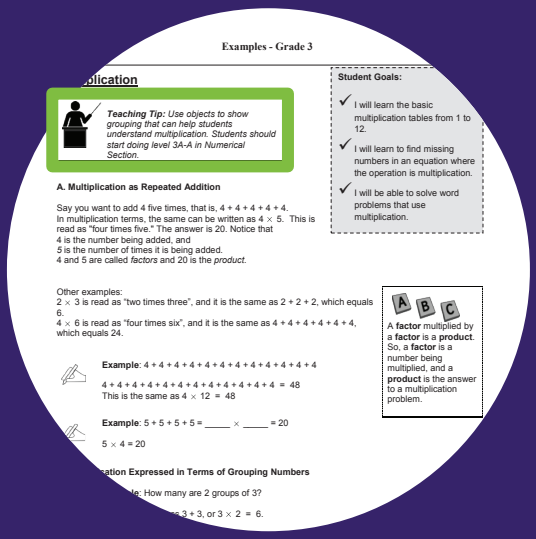
Example: 5 + 5 + 5 + 5 = ____ × ____ = 20

5 × 4 = 20

Student Goals

Student goals are listed at the top right of the Examples each week. These are topics that your child should understand by the end of the week.

Lesson pages are titled "Examples – Grade 3," answer pages are titled "Answers – Grade 3," and homework pages are simply titled "Grade – 3."



Examples - Grade 3

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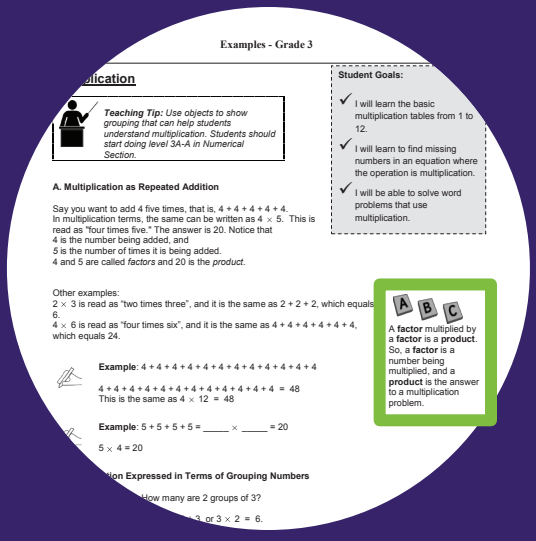
...ation Expressed in Terms of Grouping Numbers

...le: How many are 2 groups of 3?

...3 + 3, or 3 × 2 = 6.

Teaching Tip

Teaching tips are suggestions to help you or your teacher present the topic to your child. These could include topics to review first or even an activity to do with your child.



Examples - Grade 3

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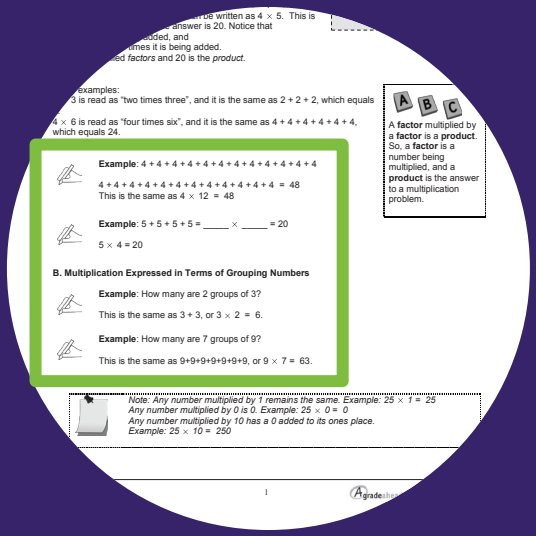
ABC Word Boxes

These word boxes define terms used within the lesson that your child may not know.

Each day's homework usually takes about 30 minutes to complete.



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5 × 4 = 20

B. Multiplication Expressed in Terms of Grouping Numbers

Example: How many are 2 groups of 3?
This is the same as 3 + 3, or 3 × 2 = 6.

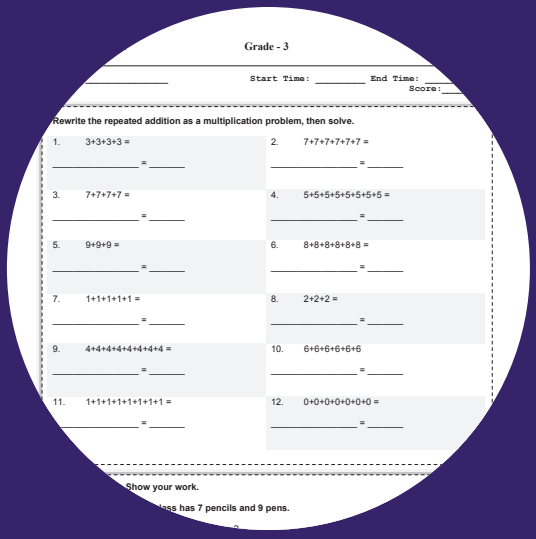
Example: How many are 7 groups of 9?
This is the same as 9+9+9+9+9+9+9, or 9 × 7 = 63.

Note: Any number multiplied by 1 remains the same. Example: 25 × 1 = 25
Any number multiplied by 0 is 0. Example: 25 × 0 = 0
Any number multiplied by 10 has a 0 added to its ones place.
Example: 25 × 10 = 250

A **factor** multiplied by a **factor** is a **product**. So, a **factor** is a number being multiplied, and a **product** is the answer to a multiplication problem.

Examples

To illustrate the topic, examples are provided to you and your child. These examples help demonstrate how to solve the problem or figure out the answer.



Grade - 3

Start Time: _____ End Time: _____
Score: _____

Rewrite the repeated addition as a multiplication problem, then solve.

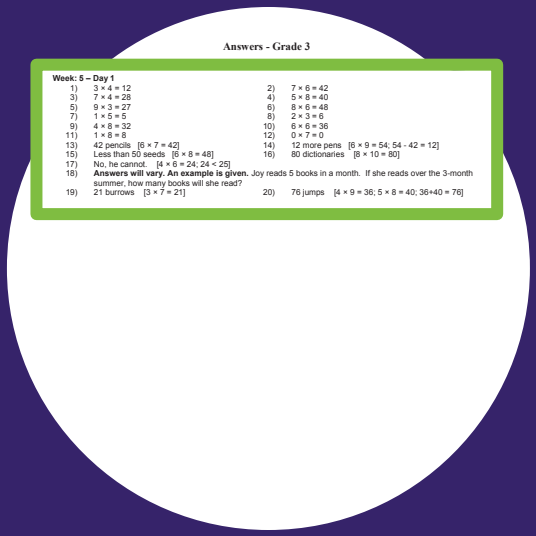
1. 3+3+3+3 = _____ = _____
2. 7+7+7+7+7+7 = _____ = _____
3. 7+7+7+7 = _____ = _____
4. 5+5+5+5+5+5+5+5 = _____ = _____
5. 9+9+9 = _____ = _____
6. 8+8+8+8+8+8 = _____ = _____
7. 1+1+1+1+1 = _____ = _____
8. 2+2+2 = _____ = _____
9. 4+4+4+4+4+4+4+4 = _____ = _____
10. 6+6+6+6+6+6 = _____ = _____
11. 1+1+1+1+1+1+1+1+1 = _____ = _____
12. 0+0+0+0+0+0+0 = _____ = _____

Show your work.

ass has 7 pencils and 9 pens.

Homework

Each week, four days of homework are given to apply concepts from that week's lesson and reinforce the topic.



Answers - Grade 3

Week: 5 – Day 1

1) 3 × 4 = 12
2) 7 × 6 = 42
3) 7 × 4 = 28
4) 5 × 8 = 40
5) 9 × 3 = 27
6) 8 × 6 = 48
7) 1 × 5 = 5
8) 2 × 3 = 6
9) 4 × 8 = 32
10) 6 × 6 = 36
11) 1 × 8 = 8
12) 0 × 7 = 0
13) 42 pencils [6 × 7 = 42]
14) 12 more pens [6 × 9 = 54; 54 - 42 = 12]
15) Less than 50 seeds [6 × 8 = 48]
16) 80 dictionaries [8 × 10 = 80]
17) No, he cannot. [4 × 6 = 24; 24 < 25]
18) **Answers will vary. An example is given.** Joy reads 5 books in a month. If she reads over the 3-month summer, how many books will she read?
19) 21 burrows [3 × 7 = 21]
20) 76 jumps [4 × 9 = 36; 5 × 8 = 40; 36+40 = 76]

Answers

Answers are provided to check your child's homework. Enter the scores into the Parent Portal to track progress and note which areas may need more work.

Day: 1 **Multiplication / Addition / Subtraction 2** **Score:____/32**

(Time Goal: 12 minutes)

Date: _____ Time Taken: _____

Multiply these numbers.

1. 4 × 8	2. 2 × 3	3. 4 × 9	4. 3 × 9
5. 5 × 2	6. 2 × 7	7. 3 × 8	8. 5 × 4
9. 3 × 7	10. 2 × 6	11. 4 × 6	12. 2 × 8
13. 2 × 9	14. 4 × 8	15. 4 × 7	16. 2 × 3
17. 3 × 5	18. 4 × 4	19. 5 × 2	20. 4 × 5
21. 5 × 8	22. 4 × 9	23. 4 × 6	24. 3 × 8

Add and subtract these numbers.

25. 158 + 759 =	26. 710 + 952 =	27. 659 − 457 =	28. 649 + 106 =
29. 650 + 951 =	30. 658 + 529 =	31. 523 − 462 =	32. 790 − 549 =

Answers - Addition / Subtraction (Carry 1)

Day: 1

1) 182	2) 84	3) 106	4) 61
5) 93	6) 62	7) 153	8) 131
9) 107	10) 114	11) 112	12) 6
13) 60	14) 21	15) 14	16) 24
17) 102	18) 78	19) 56	20) 17
21) 10	22) 35	23) 105	24) 76

Place Value / Standard, Expanded, & Word Form

Student Goals:

- ✓ I will learn place value, standard form, expanded form, and word form of a 4-digit number.
- ✓ I will be able to write a number in any of the forms mentioned above.

A. Place Value

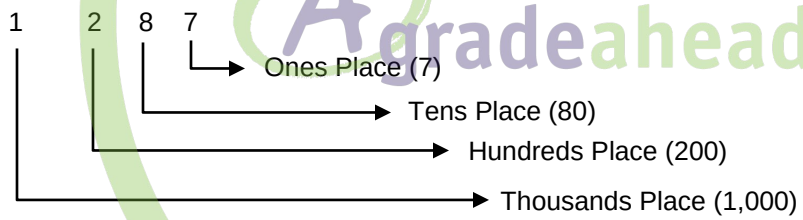
Place value is used to determine the size of a number and compare it with other numbers.

Any number is written using ten different digits: 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. When you move to the left in a number, each place is equal to ten times the value of the place to the right.

Note: Students should be familiar with the hundreds place value learned in 2nd grade. 3rd graders will learn place value up to the thousands.

Think about the number 1,287.

Starting from the right, the *right-most* digit is the ones place. There are 7 ones in this example (7 ones equal 7).
The next digit to the left of the ones is the tens place. It tells you that there are 8 tens (8 tens equal 80).
The next digit to the left of the tens is the hundreds place. It tells you how many hundreds there are in the number. The number 1,287 has 2 hundreds (2 hundreds equal 200).
The *left-most* digit is the thousands place. It tells you how many thousands there are in the number. In this number, there is 1 thousand (1 thousand equals 1,000).



A chart helps to learn place value. It matches each digit in the number to its value. Below is an example:

Example: Determine the place value of each digit in the number 6,142 using the chart. You can do this by asking yourself the following questions: how many thousands, how many hundreds, how many tens, and how many ones?

Thousands	Hundreds	Tens	Ones
6	1	4	2

The chart can also be used in reverse to find the place value of a digit. For instance, you can look at the char and see that the 2 is in the ones place.

Note: To increase clarity in reading a larger number, all numbers greater than 999 should be written with a comma between the hundreds and thousands place. Example: 5,672 instead of 5672. Starting from the right, you add a comma after every 3 numbers.

Example: What is the number: 3 thousands 5 tens?

3 thousands is 3,000. 5 tens is 50.
So the number is 3,000 + 50 = **3,050**.

Example: What is the place *and* value of **3** in the number 2,386?

2,386 is a four-digit number. The second digit is the 3, and it is in the hundreds place, which tells us that there are 3 hundreds in the number. The place of 3 is the hundreds, and its value is **300**.

Note: Students must understand the difference between the place of a number and its value. In the example above, the place of 6 is the ones, and its value is 6. The place of 8 is the tens, and its value is 80. The place of 3 is the hundreds, and its value is 300. The place of 2 is the thousands, and its value is 2,000.

Example: What is the number: 7 thousands 4 hundreds 5 ones?

Use the place value chart. Put the numbers in the correct column. Put a 0 where there is no digit given.

Thousands	Hundreds	Tens	Ones
7	4	0	5

The number is **7,405**.

Teaching Tip: *Show the students that when they say a 3 or 4-digit number, they use the words "hundred" and "thousand." This gives them a hint as to what the place value of certain digits is. Example: 1,456 is read as one thousand four hundred fifty-six. So, it already tells them that the place value of 1 is the thousands, and 4 is the hundreds.*

B. Standard, Expanded, and Word Forms

There are three basic ways of writing a number: the standard form, the expanded form, and the word form.

The *standard form* of any number is the number written with numbers. For example, the standard form for 35 is **35**.

The *expanded form* of a number is the number broken down by place value. For example, the expanded form of 35 is **30 + 5** (since there is a 3 in the tens place, and is equal to 30, and a 5 in the ones place.)

The *word form* of a number is written using words. For example, 35 in word form is **thirty-five**.

Example: For the number **124**

Standard form: 124
Expanded form: 100 + 20 + 4
Word form: one hundred twenty-four

Example: For the number **1,405**

Standard form: 1,405
Expanded form: 1,000 + 400 + 5
Word form: One thousand four hundred five.

Note: If a place has a value of 0, it is omitted in the expanded form.

Example: Write the following in expanded form: **72**

70 + 2. Expanded form can also be written: 7 tens 2 ones (sometimes the latter is also called the Place value form).

Example: Write the following in standard form: **8 hundreds, 9 ones**

Use the place value chart. Put the numbers in the correct column. Put a 0 where there is no digit given.

Thousands	Hundreds	Tens	Ones
	8	0	9

The number is **809**.

Note: If a place value has no number, don't forget to place a zero (0) in that spot. Otherwise, you may end up with incorrect answers. For instance, if you forgot the zero in the tens place for 8 hundreds and 9 ones, you would end up with 89, instead of 809.

Example: Write the following in standard form: **Four thousand twenty.**

Use the place value chart. Put the numbers in the correct column. Put a 0 where there is no digit given.

Thousands	Hundreds	Tens	Ones
4	0	2	0

The number is **4,020**.

C. Adding and Subtracting Place Value Numbers

Example: Write the following in *standard form,* then calculate the answer.

3 tens and 5 ones plus 9 tens
35 + 90 = **125**

Example: Write the following in *expanded form*. Then calculate the answer.

3 hundreds 3 tens 5 ones plus 2 hundreds 9 tens
(300 + 30 + 5) + (200 + 90) = 335 + 290 = **625**

Example: Calculate forty-two minus 2 tens. Write the answer in *word form*.

42 – 20 = 22 = **twenty-two**

Example : Use the following digits to write all numbers greater than 4000.

2 **0** **6** **7**

The numbers must be greater than 4,000, so the number in the thousands place must be either 4 or greater than 4, and only 6 and 7 are greater than 4 in this set. When doing these types of problems, list the numbers from smallest to biggest.

6,027	6,072	6,207	6,270	6,702	6,720
7,026	7,062	7,206	7,260	7,602	7,620

Date: _____ Start Time: _____ End Time: _____

Score: ____/31

Write the place value of the underlined digit? What is its value?

1. 3<u>9</u>5 _____ _____
2. <u>7</u>05 _____ _____
3. 1,00<u>9</u> _____ _____
4. <u>8</u>,019 _____ _____
5. <u>9</u>91 _____ _____
6. <u>9</u>,990 _____ _____
7. 1,0<u>6</u>5 _____ _____
8. 7,<u>1</u>29 _____ _____

Write the expanded form of the following numbers.

9. 849 = _____
10. 1,658 = _____
11. 548 = _____
12. 3,258 = _____
13. 248 = _____
14. 5,680 = _____

Write the following in standard form.

15. 7,000 + 400 + 6 = _____
16. Three thousand sixty six = _____
17. Two thousand seventy = _____
18. 5000 + 800 + 90 = _____
19. 300 + 20 + 5 = _____
20. Nine thousand and ninety = _____

21. Which of these numbers does not round to 280 when rounded to the nearest 10?

- ○ A. 284
- ○ B. 278
- ○ C. 274
- ○ D. 283

22. In the number 4510, the ones and thousands are switched. The new number falls between:

- ○ A. 4,000 and 5,000
- ○ B. 500 and 600
- ○ C. 5,000 and 6,000
- ○ D. 1,000 and 2,000

Word problems:

The following items are on sale. Write the savings on each item in the blank space provided below.
[Regular price – Sale price]

Summer dresses Regular price: $70 Sale price: $58 23. _____

Stockings Regular price: $8 Sale price: $5 24. _____

Sandals Regular price: $67 Sale price: $45 25. _____

Jackets Regular Price: $130 Sale price: $95 26. _____

27. Rhonda buys a dress and a pair of sandals. How much money does she save by buying at the reduced prices?

_____

28. Amy spends $100 and buys four items at the reduced price. She buys two pairs of stockings. What else does she buy?

_____

29. What are the savings on two jackets and two pairs of stockings?

_____

CHALLENGE!

30. What is the largest number that can be made from the following digits?

4 1 5 0

_____

31. What number is in the hundreds place?

_____

Week: 1 – Day 1

1) ten; 90
2) hundreds; 700
3) ones; 9
4) thousands; 8,000
5) hundreds; 900
6) thousands; 9,000
7) tens, 60
8) hundreds, 100
9) 800 + 40 + 9
10) 1,000 + 600 + 50 + 8
11) 500 + 40 + 8
12) 3,000 + 200 + 50 + 8
13) 200 + 40 + 8
14) 5,000 + 600 + 80
15) 7,406
16) 3,066
17) 2,070
18) 5,890
19) 325
20) 9,090
21) C
22) B [The new number becomes 0514, which is 514.]
23) $12 [70 – 58]
24) $3 [8 – 5]
25) $22 [67 – 45]
26) $35 [130 – 95]
27) $34 [12+22]
28) two pairs of sandals [45+45+5+5=100]
29) $76 [35+35+3+3]
30) 5,410
31) 4