Grade 4
Math

Oak Meadow
Coursebook

Grade 4 Contents

Contents

2 Lesson

Three-Digit Addition and Subtraction

As we move forward this week into word problems and multi-digit addition and subtraction, continue to focus on anything your child struggled with last week. If your child is ready to practice number combinations above 20, proceed at his pace. The math games from lesson 1 can be adapted to higher number combinations.

Remember to take advantage of daily real-life opportunities for your child to solve simple math problems.

New Concepts

Word problems are introduced this week. Encourage your child to draw the word problem first to have a pictorial representation. Next, help your child figure out how to turn the words into a mathematical equation before solving the problem.

For example, the first problem reads:

Jeff and Maggie went to the pet store. They saw 4 red fish and 7 blue fish. How many fish did they see?

Your child might draw it like this:
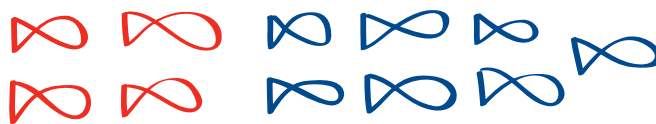
Next, have your child translate this into numbers. Your child can use either the horizontal or vertical format:

$$4 + 7 = 11$$

$$\begin{array}{r} 4 \\ +\ 7 \\ \hline 1\ 1 \end{array}$$

ASSIGNMENT SUMMARY

☐ Practice two- and three-digit addition and subtraction.

☐ Check addition and subtraction answers using the opposite process.

☐ Review place value up to four digits.

☐ Practice skip counting with large numbers (20, 50, 100, 1000, etc.)

☐ Translate word problems into numeric equations.

Complete practice sets

☐ Review Skip Counting and Sequencing

☐ Practice Adding and Subtracting

☐ More Practice Adding and Subtracting

☐ Practice Adding and Subtracting Larger Numbers

☐ Practice Place Value

☐ Word Problems for Adding and Subtracting

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(continued)

Word problems always get answered with words. First, they are translated into numeric equations and solved, and then answered as a sentence. After your child has solved the problem in numeric form, have him or her write the answer as a complete sentence: *They saw 11 fish.* This is the format to follow for all the word problems in this book. Both the numeric equation and the written sentence form the final answer.

Assignments

1. Practice two- and three-digit adding and subtracting on paper (without borrowing and carrying). Show your child how to check addition answers by subtracting, and check subtraction answers by adding. Help your child develop the habit of checking all answers in this way.

2. Review the place value for each digit in a series of numbers of different sizes up through a place value of one thousand. Moving from right to left, the columns are as follows: ones, tens, hundreds, thousands.

3. Continue last week's skip-counting game with 2, 5, and 10. If your child is ready, go on to practice skip counting with 20, 50, 100, and 1,000. Practice orally with active movement, such as marching, skipping, hopping, or tossing a ball).

4. Do some or all of the practice sets in this lesson:

   - Review skip counting and sequencing

   - Practice adding and subtracting

   - More practice adding and subtracting

   - Practice adding and subtracting larger numbers

   - Practice place value

   - Word problems for adding and subtracting

For Enrolled Students

Feel free to contact your teacher if you have any questions about the assignments or the learning process. You will be sending a sample of work from this lesson to your Oak Meadow teacher at the end of lesson 4. Continue documenting your student's process with the assignment summary checklist and the learning assessment form.

Reviewing Skip Counting and Sequencing

22, _____, _____, 28, 30, _____, _____, 36, _____, 40

20, 40, _____, _____, 100, _____, _____, _____, 180, _____

220, 222, 224, _____, _____, 230, 232, _____, _____, 238, _____

35, 40, _____, 50, _____, 60, 65, _____, _____, 80

300, 305, _____, _____, 320, 325, _____, _____, 340, _____, _____

0, _____, _____, 30, _____, _____, 60, _____, _____, _____, 100

200, 250, _____, _____, 400, _____, _____, 550, _____, _____, 700

110, _____, 120, _____, _____, 135, _____, _____, 150, _____, _____

70, 80, _____, _____, _____, _____, 130, _____, _____, 160, _____

430, _____, 432, _____, _____, _____, _____, _____, 438, _____, _____

100, _____, 300, _____, _____, 600, _____, _____, 900, _____

1,000, 2,000, _____, _____, _____, _____, 7,000, _____, _____, 10,000

1,001, 1,002, _____, 1,004, _____, _____, _____, 1,008, _____, 1,010

250, 300, _____, _____, 450, _____, _____, 600, _____, _____, _____, 800

5,000, 5,100, _____, _____, 5,400, _____, _____, _____, 5,800, _____, _____

Practice Adding and Subtracting

Note: Pay careful attention to whether it is a plus or minus sign!

21	13	56	82	55
+ 18	+ 5	+ 23	+ 17	- 34

47	66	89	123	340
- 22	- 31	- 45	+ 456	+ 229

4	2	6	204	421
1	3	4	+ 263	+ 366
2	4	7		
+ 6	+ 2	+ 3		

More Practice Adding and Subtracting

7	8	9	11	12
- 0	- 5	+ 6	- 2	+ 3

65	91	18	41	72
+ 12	+ 7	- 9	+ 36	- 22

873	667	348	876	421
- 141	- 245	- 36	- 72	+ 36

More Practice Adding and Subtracting Larger Numbers

124	416	190	276
+ 305	+ 242	+ 208	- 136

976	842	758	415
- 325	- 340	- 437	+ 362

4,643	8,987	9,940	8,763
+ 246	- 3,214	- 720	- 721

Practice Place Value

1. In 1,342, what digit is in the tens place? _____ What digit is in the thousands place? _____

2. In 4,874, what digit is in the hundreds place?

3. Write a number with 3 in the ones place and 5 in the tens place. _____

4. Write a number with 4 in the thousands place, and 3 in the tens place. _____

5. Write this number in words: 627 _____

6. Write this number in words: 8,645_____

7. Write a number with 2 in the thousands place, 7 in the hundreds place, and 4 in the ones place. _____

8. In 3,410, in which place is the 4? _____

9. In digits, write the number six thousand, three hundred twenty-one. _____

10. In 5,025, in what places are the 5s? _____

Word Problems for Adding and Subtracting

Note: Write the problem out in number form either in a line (horizontally) like this,
5 + 5 = 10, or in a column (vertically) like this:

$$\begin{array}{r} 5 \\ +5 \\ \hline 10 \end{array}$$

1. Jeff and Maggie went to the pet store. They saw 4 red fish and 7 blue fish. How many fish did they see?

2. Maggie wanted to buy some fish for her aquarium. She bought 3 blue fish, 2 goldfish, and 5 tiny silver fish. How many fish did she buy?

3. Jeff was especially interested in the kittens. There were lots of kittens at the pet store. In one cage there were 6 little newborn kittens. In another cage there were 5 bigger kittens with short hair. In a third cage there were 7 kittens with long hair. How many kittens did the pet store have?

4. While Maggie and Jeff were in the store, someone came in to buy some hamsters. There were 15 hamsters in the cage. The customer decided to buy 4 hamsters. How many were left?

5. In another hamster cage there were 8 hamsters. A woman came in and bought 3. How many hamsters were left in that cage?

6. How many hamsters were bought altogether?

7. How many hamsters were left in the two cages?

Learning Assessment

These assessment rubrics are intended to help you track your student's progress throughout the year. Please remember that these skills continue to develop over time. Use this space to make notes about the learning your child demonstrates or skills that need work.

Math

(continued)

MATH	Not Yet Evident	Developing	Consistent	Notes
Uses addition and subtraction in daily situations				
Solves two- and three-digit addition and subtraction without carrying or borrowing				
Solves two- and three-digit addition and subtraction with carrying or borrowing				
Checks addition and subtraction answers using opposite process				
Has memorized times tables up to 12				
Solves simple division problems in vertical format				
Solves simple division problems with remainders in vertical format				
Identifies place value up to six digits				
Translates word problems into mathematical equations				
Tells time and solves time questions using an analog clock				
Demonstrates understanding of odd, even, greater than, less than, and equal to				

16

Lesson

Two-Digit Multiplication with Carrying

New Concepts

Now that your child is comfortable with multiplying two-digit numbers without carrying, we will introduce multiplication with carrying. Talk your child through the process of carrying in multiplication, step-by-step:

$$\begin{array}{r} 48 \\ \times\ 13 \\ \hline \end{array}$$

Multiply the ones (3 x 8 = 24) and write the answer below as shown, putting the 4 in the ones column and carrying the 2 to the tens column, just as in carrying with addition.

$$\begin{array}{r} 2\ \ \\ 48 \\ \times\ 13 \\ \hline 4 \end{array}$$

Now multiply 3 x 4, adding the carried 2 (3 x 4 = 12 + 2 = 14), and write the answer as shown.

$$\begin{array}{r} 2\ \ \\ 48 \\ \times\ 13 \\ \hline 144 \end{array}$$

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(continued)

Next, multiply the tens: 1 x 8 = 8

Remind your child that since the 1 is really a 10, the answer must start in the tens column, and you use a zero as a place holder, like this:

$$
\begin{array}{r}
2 \\
48 \\
\times\ 13 \\
\hline
144 \\
80
\end{array}
$$

Then multiply 1 x 4 = 4 and place the answer next to the 8 in the hundreds column:

$$
\begin{array}{r}
2 \\
48 \\
\times\ 13 \\
\hline
144 \\
480
\end{array}
$$

Finally, put a line underneath and add the answers together for the total:

$$
\begin{array}{r}
2 \\
48 \\
\times\ 13 \\
\hline
144 \\
+\ 480 \\
\hline
624
\end{array}
$$

Complete a number of practice problems together, talking aloud as you go through the calculations, until your child feels confident about the process. Then switch roles and have your child do the calculations, talking you through it as you watch.

Assignments

1. Practice multiplication with two-digit multipliers with carrying. Have your child talk through the process several times before working on the practice sets.

2. Do some or all of the practice sets in this lesson:

   - Practice two-digit multipliers with carrying

   - Practice problems with four processes

For Enrolled Students

It's time to send your next batch of lesson submissions to your Oak Meadow teacher. Include a representative sample of your child's work from lessons 13–16, your weekly documentation, and notes on your child's progress.

Math

(continued)

Practice Two-Digit Multipliers with Carrying

67	68	70	75	49
x 59	x 27	x 13	x 32	x 28

27	67	67	54	17
x 19	x 33	x 44	x 30	x 12

96	36	66	84	66
x 58	x 13	x 32	x 57	x 18

**Practice Problems with the Four Processes
(addition, subtraction, multiplication, division)**

$$\begin{array}{r} 73 \\ \times\ 22 \\ \hline \end{array} \qquad \begin{array}{r} 53 \\ \times\ 23 \\ \hline \end{array} \qquad \begin{array}{r} 93 \\ \times\ 31 \\ \hline \end{array} \qquad \begin{array}{r} 43 \\ \times\ 33 \\ \hline \end{array}$$

$$\begin{array}{r} 372 \\ +\ 917 \\ \hline \end{array} \qquad \begin{array}{r} 623 \\ -\ 412 \\ \hline \end{array} \qquad \begin{array}{r} 49 \\ \times\ 28 \\ \hline \end{array} \qquad 5\overline{)26}$$

$$9\overline{)74} \qquad \begin{array}{r} 767 \\ +\ 398 \\ \hline \end{array} \qquad \begin{array}{r} 876 \\ -\ 519 \\ \hline \end{array} \qquad \begin{array}{r} 71 \\ \times\ 42 \\ \hline \end{array}$$

$$\begin{array}{r} 36 \\ \times\ 74 \\ \hline \end{array} \qquad 12\overline{)36} \qquad \begin{array}{r} 161 \\ +\ 879 \\ \hline \end{array} \qquad \begin{array}{r} 436 \\ -\ 399 \\ \hline \end{array}$$

$$\begin{array}{r} 532 \\ -\ 444 \\ \hline \end{array} \qquad \begin{array}{r} 43 \\ \times\ 33 \\ \hline \end{array} \qquad 11\overline{)61} \qquad \begin{array}{r} 735 \\ +\ 537 \\ \hline \end{array}$$

Math   # Learning Assessment

(continued)   Use these assessment rubrics to track your student's progress throughout the year and make notes about the learning your child demonstrates or skills that need work. Please remember that these skills continue to develop over time.

MATH	Not Yet Evident	Developing	Consistent	Notes
Solves problems with two-digit multipliers without carrying				
Solves problems with two-digit multipliers with carrying				
Takes measurements and solves problems with weights and measures				
Makes conversions between different units of measurement				
Records data on a bar graph				
Solves multistep word problems				
Demonstrates knowledge of Roman numerals to 1000				
Uses math in daily situations				
Solves two- and three-digit addition and subtraction with carrying or borrowing				
Checks addition and subtraction answers using opposite process				
Has memorized times tables up to 12				
Solves simple division problems with remainders in vertical format				
Identifies place value up to seven digits				
Tells time and solves time questions using an analog clock				
Demonstrates understanding of odd, even, greater than, less than, and equal to				

Grade 4

17 Lesson

Word Problems with Measuring

New Concepts

Now that we've reviewed teaspoons, tablespoons, cups, pints, and so on, we'll learn more about pounds and ounces.

16 ounces = 1 pound

To change pounds to ounces, multiply the number of pounds by 16.

If you have access to a reasonably accurate scale, help your child collect and weigh a variety of different items. If you do not have access to such a scale, explore weights at the market by weighing various amounts of produce and reading the weights on packages of foods. Find as many opportunities as you can in daily life to explore weights and measures with your child this week.

Now that your child is familiar with weights and measures, we can introduce story problems using measurements. Story problems often contain many steps. Work through the sample problem below with your child, showing how each step can be written out in number form as you work toward the solution. (Refer back to earlier lessons on measurement if necessary.)

> Renee and Julia are making a chocolate cake for their mom's birthday. They need 4 cups of flour, 1 cup of chocolate powder, and 2 cups of sugar. They have a $\frac{1}{2}$ cup measuring cup. How many times will they fill the $\frac{1}{2}$ cup measuring cup with flour?

1 cup = two $\frac{1}{2}$ cups

4 (cups of flour) × 2 ($\frac{1}{2}$ cups) = 8

They will fill the measuring cup 8 times with flour.

ASSIGNMENT SUMMARY

☐ Use conversions and the four processes to solve multistep word problems.

Complete practice set

☐ Word Problems Using Measurements

MATERIALS
Kitchen scale (optional)

Math

(continued)

How many times will they fill the measuring cup with chocolate powder? How many times with sugar?

1 (cup of chocolate) × 2 ($\frac{1}{2}$ cups) = 2

2 (cups of sugar) × 2 ($\frac{1}{2}$ cups) = 4

They will fill the cup 2 times with chocolate powder and 4 times with sugar.

How many times did Renee and Julia use the $\frac{1}{2}$ cup measuring cup in all?

8 + 2 + 4 = 14

They used it 14 times.

Assignments

1. Practice weighing amounts and converting between ounces and pounds.

2. Work with your child on solving word problems using measurements. Give plenty of practical experience with everyday tasks in the kitchen.

3. Do the following practice set:

   • Word problems using measurements

For Enrolled Students

You will be sending the next batch of work to your Oak Meadow teacher at the end of lesson 20. Continue to use the assignment checklist and learning assessment form to help you organize your lessons and track your student's progress.

Word Problems Using Measurements

1. Gabe and Nell made lemonade for the swim team picnic. They used a 1-cup measure to fill two 1-gallon jugs. How many cups of lemonade did they need? Gabe poured 18 cups. How many did Nell pour?

2. Katie and Mark are making muffins for the picnic. The recipe uses 4 cups of blueberries. The blueberries at the market are all in 1-pint containers. How many pints will they need? How many pints will Katie and Mark need if they decide to double the recipe?

3. Erin and Evan are making sandwiches for the picnic. They plan to make 24 sandwiches. How many slices of bread will they need? If each 1-pound loaf of bread has 12 slices in it, how many pounds of bread will they need? (Hint: Remember each sandwich needs two slices of bread.)

4. Mary Ellen's grandmother is knitting several pairs of mittens. She needs 8 balls of yarn for the mittens. Each ball of yarn weighs 4 ounces and costs 1 dollar an ounce. How much will the yarn cost? How much will the total amount of yarn weigh in ounces?

5. A.J. weighs 83 pounds. How many ounces does he weigh? He is 4 feet 7 inches tall. How tall is he in inches?

6. Make a bar graph of the weights of four different children.

7. Make a bar graph of the heights, in inches, of four different items in your house.

Math
(continued)

Learning Assessment

Use these assessment rubrics to track your student's progress throughout the year and make notes about the learning your child demonstrates or skills that need work. Please remember that these skills continue to develop over time.

MATH	Not Yet Evident	Developing	Consistent	Notes
Solves problems with two-digit multipliers without carrying				
Solves problems with two-digit multipliers with carrying				
Takes measurements and solves problems with weights and measures				
Makes conversions between different units of measurement				
Records data on a bar graph				
Solves multistep word problems				
Demonstrates knowledge of Roman numerals to 1000				
Uses math in daily situations				
Solves two- and three-digit addition and subtraction with carrying or borrowing				
Checks addition and subtraction answers using opposite process				
Has memorized times tables up to 12				
Solves simple division problems with remainders in vertical format				
Identifies place value up to seven digits				
Tells time and solves time questions using an analog clock				
Demonstrates understanding of odd, even, greater than, less than, and equal to				