

Grade 5 Math

Oak Meadow

Coursebook

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Introduction

Welcome to Grade 5 Math!

This year, you will have the chance to learn new skills and become confident in your mastery of skills you learned last year. Before you begin, please take a few minutes to read this introduction to get an idea about what you will be doing this year.

Course Materials

This course includes the following materials:

Oak Meadow Grade 5 Math Coursebook

Oak Meadow Grade 5 Math Workbook and Answer Key

In this coursebook, you will find all the instructions for each lesson. In the workbook, you will find all the worksheets for practicing math skills, all the lesson tests, and the answer key for each worksheet and test. You'll also find a collection of extra practice worksheets in the math workbook. These can be used whenever you need more practice with a particular skill.

Having the answer key lets you check your answers after you have completed your practice worksheets. Circle any problems that you answered incorrectly, and then redo the problem. If you still have trouble getting the right answer, ask your parent or teacher for help. Your parent will use the answer key to check your answers after each test, circling any incorrect answers, and then giving you the opportunity to make test corrections.

In the workbook you'll also find B-tests, which are for students enrolled in Oak Meadow School (those who are sending their work to an Oak Meadow teacher). You will not find answers to the B-tests in the workbook.



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Here are a few additional materials that will be used in this course:

- Deck of cards
- 4 or more dice
- Various coins (pennies, nickels, dimes, and quarters, or the local currency)

How the Course Is Organized

This coursebook is divided into 36 lessons. Each lesson is designed to be done in one week. You can expect to spend about three to four hours on each lesson. It's best to divide up the work throughout the week rather than trying to do it all in one day.

In the lessons, you will find the following:

Assignment Summary: A checklist of assignments is included at the beginning of each lesson. This lets you check off assignments as you complete them and see at a glance what still needs to be done.

Mental Math: Mental math games are math problems that you do in your head. You won't write anything down (or turn in anything to your teacher). These mental math exercises will get your brain all warmed up and ready to learn new material.

Skills Check: In each lesson, you'll have a chance to practice the skills you've already learned.

New Skills: Each new skill is explained fully with examples that show you the step-by-step process.

New Skills Practice: Worksheets are provided to give you a chance to practice each new skill.

Lesson Test: At the end of each lesson, you will find a lesson test which gives you a chance to demonstrate your skills.

Learning Checklist: On each test, you'll find a learning checklist to fill out. This checklist lets you see which skills are easy for you and which need more work, and lets you as well as your parent and teacher keep track of your progress.

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For Enrolled Students: This section is for families who are enrolled in Oak Meadow School and sending their work to an Oak Meadow teacher. It provides information and reminders about how and when to submit work.

Every few lessons, you will find a Skills Review lesson. This lesson gives you time to review all that you've learned and brush up on any skills that need more practice. You can use the extra practice worksheets to work on your skills at any time.

Study Tips to Help You Get the Most Out of This Course

- 1. Read the math instruction in each lesson even if it seems like something you already know. It will help to refresh your memory and perhaps give you new information or techniques that will help you in the long run.
- 2. In all your math work, **show your work**. This means you will show evidence of carrying, borrowing, and figuring multiplication and division step-by-step. Whatever process you use to solve a problem, show this in your work. Even if you can figure out the problem in your head, write down how you reached the answer. Since the answer key is provided, **simply writing down the answer is not enough**—you have to show your calculations for each step. This not only proves that you know how to do the problem, but if mistakes are occurring, it shows your parent or teacher where help is needed.
- 3. When you are practicing new skills, refer to the information in the coursebook if you need help. If you are still confused, ask for help. You can use the extra practice worksheets in the math workbook if you need more time to learn a skill.
- 4. After you complete each worksheet, check your answers at the back of the book and rework any incorrect problems. Get an adult to help you if necessary. Make all the corrections before you move onto the next worksheet—this helps you avoid making the same mistakes over and over without realizing it.
- 5. Make sure to use the answer key AFTER you have completed each worksheet. Copying answers from the answer key won't help you

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Introduction

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- succeed. Not only is that considered cheating, but it prevents you from learning to think for yourself and persevere in your efforts to learn.
- 6. For the lesson tests, solve all the problems on your own, without looking at the coursebook or asking for help. Once you have done your best, ask a parent to check your answers in the answer key. They will circle any wrong answers (and put your test score at the top of the test), and then you can make test corrections, using the course-book to review any skills you need help with.
- 7. When you are making corrections, talk through the problem aloud. This helps you focus on each step of the process and lets your parent or tutor hear where you may be having trouble. Being able to talk your way through a math problem is an important skill and will reinforce your learning and memory.

Moving Forward with Confidence

Learning math can be a very satisfying process. It encourages a flexibility of thinking and an appreciation for the beauty of patterns, shapes, logic, and much more. We hope this course helps you develop a strong foundation and gives you the confidence for more advanced skills while opening your mind to the enjoyment and practical importance of mathematics.

For the Parent

Fifth grade students are often ready for the challenges of learning independently, and many students will find this course well-suited to their ability to pace themselves and work autonomously. Other students, however, may need extra support from you. Taking the time to sit with your child at the beginning of each lesson until new skills are clarified can go a long way toward helping your child feel confident and successful.

In addition to providing support in learning new skills, it is important that you look over your child's work on lesson tests and check the answers against the answer key in the workbook. You are encouraged to have your student self-correct the practice worksheets using the answer key, but you

should correct all tests so that you can spot any weaknesses or confusion and help clear it up immediately. This instant feedback is essential. Circle any incorrect answers, put the test score at the top of the test, and then have your student make test corrections BEFORE moving on to the next lesson. Math skills are cumulative and an understanding of each concept or skill is necessary.

In the appendix of the math workbook, we have included many extra practice worksheets. These can be used if your student needs more time to work on a particular skill. The extra practice worksheets are organized by lesson, and listed in the table of contents. If you don't find what you are looking for, feel free to make up some extra practice problems of your own.

Many parents remember struggling with math as a child. This curriculum is designed to guide the student through increasingly complex skills one step at a time to alleviate any frustration or struggle. The review lessons built into the course provide extra time to solidify skills. Hopefully this course will build confidence in your child and foster an enjoyment of mathematics. Your interest in your student's work, and your eagerness to learn and share in the discovery of new math skills, will help your child face the challenges ahead with a willing heart and an open mind.

An Important Note about Workload

This course, like all Oak Meadow courses, offers plenty of practice and review for each skill. Some students benefit from completing every practice problem, while others work better with targeted practice. You might find that your student needs to do all the practice problems for a skill that is challenging but is able to grasp other concepts more quickly and easily, resulting in fewer practice problems needed.

Math is a subject in which repetition is extremely beneficial. That's why we have designed this course with a lot of opportunities to revisit previous skills and practice them. However, no student should be forced to do endless problem sets after they have already demonstrated mastery. All the problems on the lesson tests must be completed. However, you and your student can work together to determine the most useful number of problems to complete on the practice worksheets.

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For Families Enrolled in Oak Meadow School

At the end of most lessons, you will find a "For Enrolled Students" section that contains information about what to send to your teacher. You are expected to submit work to your teacher after every two lessons, and communicate any time there are questions or concerns about your student's learning.

Here is a brief explanation of what you will submit:

- At the end of every two lessons, you will send two lesson tests, and one B-test. All tests are found in the *Oak Meadow Grade 5 Math Workbook and Answer Key*.
- The lesson tests will be scored (by you) and corrected (by your student). Your teacher will check and score the B-test. Answers to all worksheets and tests are found in the Oak Meadow Grade 5 Math Workbook and Answer Key. Answers to B-tests are not provided.
- To score a test, use the answer key to check each answer and circle any incorrect answers. At the top of the page write the number correct over the total number of problems. For instance, if there are 25 problems in the test and your student gets two wrong, you would write ²³/₂₅ at the top.
- After you score the test, have your student redo any incorrect problems (the ones that are circled). Encourage your child to talk through the problem aloud so you can see where the error occurred and help your child fix it.
- Do not include any practice worksheets (Skills Check and New Skills Practice) when you submit work to your Oak Meadow teacher. Only the lesson tests and B-tests are sent to the teacher. Although the practice worksheets are not being submitted, these are important elements of this course and your student will gain valuable skills and confidence from doing them.

When submitting work to your teacher, always keep a copy of what you are sending. Work can be submitted digitally or through the postal mail. You will find detailed instructions about how to submit your work in your

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teacher's welcome letter and in your Parent Handbook. If you have any questions, please contact your teacher.

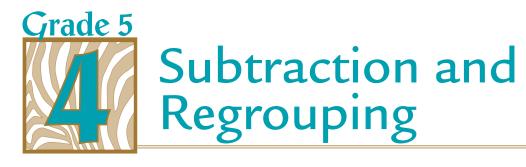
We wish you and your student an engaging year of math challenges and successes!

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Mental Math

Version 1: Play a board game that uses two or more dice (so you have to add the numbers). Yahtzee is a great game to play because you have to use multiplication or addition to write down your points each turn.

Version 2: Roll a pair of dice and add up the total. Keep this number in mind as you roll again. Add the numbers on the two dice, and then add that to the previous total. Keep rolling the dice, adding them together, and adding it to your running total. See if you can keep doing this, all in your head, until you reach 100.

Skills Check

In the last lesson, you worked on measuring units of time, time lines, and adding and subtracting time. Do the following worksheet to practice what you've learned.

Lesson 4 Skills Check

New Skills

Regrouping (Borrowing) in Subtraction

When we subtract one number from another, sometimes we must rename one of the numbers before we can subtract. This renaming process is called regrouping or borrowing.

Example: Subtract 193 from 358.

 $\frac{2,15}{3,88}$ $\frac{-193}{165}$

ASSIGNMENT SUMMARY

- Play mental math games.
- Do the Skills Check worksheet.
- Read New Skills instruction.
- Complete New Skills Practice.
- Complete Lesson 4
 Test and Learning
 Checklist.

Lesson 4 Grade 5 Math

Lesson 4

(continued)

We begin, as always, with the column on the right. We say, "8 minus 3 is 5," and we write the 5 below the line. Then we go to the next column, and say, "5 minus 9 is" but we can't answer, because 9 is larger than 5, so we can't subtract it. This is where we have to regroup or rename, so we look at the next digit to the left, which is a 3. We're going to borrow 1 from that digit, so we draw a line through the 3, subtract 1 from it, and write the result, 2, above the digit. Then we take the 1 that we borrowed (which is really 100 or 10 tens) and add it to the 5 (which is really 5 tens) to get 15; cross out the 5 and write 15 above it in the tens place. Since 15 is larger than 9, we can subtract, so we say, "15 minus 9 is 6," and we write the 6 below the line. Finally, we move to the next column, and since that number is now a 2, we say, "2 minus 1 is 1," and we write the 1 below the line, for a final answer of 165.

At first, this may seem like we're just juggling numbers around, but there's actually a good reason behind it. If we look at the original number in terms of place values, it looks like this:

Hundreds	Tens	Ones
3	5	8

$$300 + 50 + 8 = 358$$

When we borrow 1 from the 3 and move that amount to the tens column to add to the 5, we're not really changing the value of the number, we're just renaming it and writing it in a different form. Let's look again at our place value chart.

Hundreds	Tens	Ones
2	15	8

$$200 + 150 + 8 = 358$$

Regrouping is just renaming a number to make subtraction easier.

Solving Word Problems with Subtraction

One common type of problem that uses subtraction is a comparison between two amounts. Subtraction problems always tell us the difference between two amounts, so one of the words you will commonly see in

Grade 5 Math Lesson 4

problems that require subtraction is *difference*. In addition, the phrases *how many more* or *how many fewer* are often found in subtraction problems.

Lesson 4

Example: Jonah has 184 cards in his collection. Faith has 218 cards in her collection. How many more cards does Faith have than Jonah?

(continued)

$$\frac{\cancel{218}}{\cancel{218}}$$
 $\frac{-184}{34}$

Faith has 34 more cards than Jonah.

Example: In June the Smithville Bicycle Works sold 84 bicycles. In January they sold 18. How many fewer bicycles did they sell in January?

$$\begin{array}{r}
7,14 \\
8/4 \\
-18 \\
\hline
66
\end{array}$$

They sold 66 fewer bicycles in January than in June.

Example: Josh counted 23 sparrows in the tree. Something scared them, and most flew away, leaving only 4. How many birds flew away?

$$\frac{113}{23}$$
 $\frac{-4}{19}$

19 birds flew away.

Borrowing across Zero

When we are subtracting and have to borrow from the next digit to the left, usually that digit is a number greater than zero. But sometimes that digit is a zero. Since we can't borrow from zero, what do we do? We go to the next digit, and then borrow across zero.

Lesson 4 Grade 5 Math

Lesson 4

Example: Subtract 367 from 804.

(continued)

As usual, we begin with the column at the right. We say, "4 minus 7 is," but we can't subtract because 7 is larger than 4. We go to the next column to borrow, but the next digit is 0, so we can't borrow from that. So we go to the next digit, the 8, and borrow from that to make it 7. Remember, when we borrow 1 from the 8, we are really borrowing 100 or 10 tens. So we cross out the 0 and put 10 above it (to show the 10 tens we borrowed). Now we have 10 in the tens place, so we can borrow from that. To do that, we have to regroup again: we borrow 1 from the 10, crossing it out and putting 9 above it. Then we move the 1 that we borrowed from the tens place (which is really one group of ten) and we add that to the ones place by crossing out the 4 and making it 14. Then we solve our subtraction problem.

This takes several steps, but as you complete several problems, you'll find that when you borrow across zero, the 0 always becomes a 9. So the easy way to borrow across zero is to borrow from the first digit to the left, cancel the 0 and make it a 9, and move the borrowed 1 to the next digit.

Example: Subtract 485 from 602.

Grade 5 Math Lesson 4

Example: Subtract 543 from 800.

$$\begin{array}{r}
 7 & 1010 \\
 8 & 0 & 0 \\
 \hline
 -543 \\
 \hline
 257$$

This same process also works if you have to borrow across more than one zero. The only difference is that instead of borrowing from the next digit to the left, you borrow from the first digit to the left that is larger than 0. Then you bring the 1 back to where you started, changing all the zeroes to nines in between.

Example: Subtract 264 from 5,000.

$$\begin{array}{c}
4 & 9 & 9 & 10 \\
\cancel{5}, \cancel{0}, \cancel{0}, \cancel{0} \\
- & 2 & 6 & 4 \\
\hline
4, 7 & 3 & 6
\end{array}$$

If this seems a little confusing, you can do a quick check to see that the renamed number still equals 5,000:

Thousands	Hundreds	Tens	Ones
4	9	9	10

$$4,000 + 900 + 90 + 10 = 5,000$$

Example: Subtract 1,362 from 7,004

$$\begin{array}{r}
6 & 910 \\
7, 0 & 4 \\
-1, 362 \\
\hline
5, 642
\end{array}$$

Borrowing to a Borrowed Digit

that has already been renamed. You've done this with zero already, and you can also do it with other numbers. Look at the following example:

Lesson 4

(continued)

Sometimes a subtraction problem will require you to borrow from a digit

Lesson 4 Grade 5 Math

Lesson 4

Example: Subtract 487 from 3,753.

(continued)

$$\begin{array}{r}
 413 \\
 3,753 \\
 -487 \\
 \hline
 6
\end{array}$$

You try to subtract 7 from 3, but you can't, so you borrow from the 5. You change the 5 into a 4, and move the 1 you borrowed over to the 3 to make it 13. Then you subtract 7 from 13 to get 6, and you write this below the line. This is the normal process. But when you get to the next column you discover that you can't subtract 8 from 4. This seems like it might be a problem, because you've already borrowed from that column once, when you changed it from a 5 to a 4. But that doesn't matter; just proceed as usual. Borrow from the 7 and make it a 6. Next put the 1 you borrowed in front of the 4 to make it 14 (or you can cross out the 4 and write 14 above it). Then continue subtracting.

Example: Subtract 986 from 6,522

New Skills Practice

Complete the following worksheets in your math workbook:

- Lesson 4 New Skills Practice: Regrouping (Borrowing) in Subtraction, Regrouping across Zero, Borrowing from a Renamed Digit
- Lesson 4 Test

Grade 5 Math Lesson 4

Remember to show all your work. **Check your answers** and circle any incorrect answers before reworking these problems. Ask for help or use the additional practice worksheets if you need to.

Once you understand the material, complete the Lesson 4 Test. Your parent will check your answers for the test and have you redo any incorrect problems.

For Enrolled Families

At the end of this lesson, submit the following three items to your Oak Meadow teacher:

- Lesson 3 Test
- Lesson 4 Test
- Lesson 4 B-test

Do not include any of the practice worksheets (Skills Check, New Skills Practice, or extra practice worksheets).

Make sure the two lesson tests have been graded (by you) and then corrected (by your child). Contact your teacher if you have any questions about the assignments or the learning process.

Lesson 4

(continued)



Skills Review

This is the first Skills Review lesson—you will find these throughout the course. This lesson gives you the chance to brush up on skills you still need to practice. The test is a *cumulative* test; that means that it includes a collection of all the skills you've worked on so far this year. Here is a list of those skills:

Lesson 1

Adding Whole Numbers Using Carrying Solving Word Problems Using Addition Adding Columns of Whole Numbers

Lesson 2

Place Value up to One Billion Translating between Numbers and Words Rounding Whole Numbers

Lesson 3

Measuring Units of Time Time Lines Adding and Subtracting Time

Lesson 4

Regrouping (Borrowing) in Subtraction Regrouping across Zero Borrowing from a Renamed Digit

Look over this list carefully. Is there any topic that you have some questions or confusion about? If so, use the extra practice worksheet on that topic to practice it (all the extra practice worksheets are in the appendix of the math workbook). You might also want to reread the lesson instruction on that topic or ask someone to help you understand it better.

ASSIGNMENT SUMMARY

- Practice skills learned so far.
- Complete Lesson 5
 Test and Learning
 Checklist.

Lesson 5 Grade 5 Math

Lesson 5

(continued)

Use this week to check your skills in all these areas of learning, and then complete the Lesson 5 Test and Learning Checklist.

When you fill out the Learning Checklist this week, you might find that some of the skills you needed help with in the past weeks are now ones you can do on your own. Give yourself a pat on the back for the progress you are making!