

Grade 4

Math

Coursebook



Oak Meadow

Oak Meadow, Inc.
Post Office Box 1346
Brattleboro, Vermont 05302-1346
oakmeadow.com



Table of Contents

Introduction	vii
Lesson 1: Addition, Subtraction, and Skip Counting	1
Lesson 2: Three-Digit Addition and Subtraction	11
Lesson 3: Place Value and Telling Time	21
Lesson 4: Simple Division and Word Problems	29
Lesson 5: Carrying and Borrowing	39
Lesson 6: Division with Remainders	47
Lesson 7: Roman Numerals and Multistep Word Problems	53
Lesson 8: Multiplication with Tens	63
Lesson 9: Roman Numerals to the Thousands	71
Lesson 10: Two-Digit Multiplication	77
Lesson 11: Skills Review	83
Lesson 12: Skills Review	85
Lesson 13: Weights and Measures	87
Lesson 14: Liquid Measures	91
Lesson 15: Two-Digit Multiplication	95
Lesson 16: Two-Digit Multiplication with Carrying	101

Lesson 17: Word Problems with Measuring	107
Lesson 18: More Weights and Measures	111
Lesson 19: Introduction to Fractions	115
Lesson 20: More Fractions	123
Lesson 21: Adding and Subtracting Fractions with the Same Denominator	127
Lesson 22: Money Math	135
Lesson 23: More Money Math	141
Lesson 24: Skills Review	147
Lesson 25: Rounding and Estimating	151
Lesson 26: Long Division	161
Lesson 27: Long Division with Remainders	173
Lesson 28: Two-Digit Division with Tens	181
Lesson 29: Mixed Numbers	189
Lesson 30: Improper Fractions	195
Lesson 31: Equivalent Fractions	207
Lesson 32: Common Denominators and Adding and Subtracting Fractions with Different Denominators	215
Lesson 33: Simplifying Fractions	227
Lesson 34: Multiplying by 100s	233
Lesson 35: Year-End Review	243
Lesson 36: Year-End Assessment	251

Appendix 261

 Materials..... 263

 Answer Key to Lesson Practice Sets 265

 Extra Practice Worksheets..... 289

 Answer Key to Extra Practice Worksheets..... 319

Lesson

1

Addition, Subtraction, and Skip Counting

The year begins with a thorough review of the four processes—addition, subtraction, multiplication, and division—all of which were covered in third grade. Over the next few weeks, review each of these processes to help your child “sweep out the cobwebs” of summer vacation. Practice problems are provided for you on the pages following, but we hope you will not limit your child’s practice to these worksheets. Most children learn best by using a variety of methods.

Assignments

1. Review the four processes, both orally and in written form.
2. Review counting by 2s, 5s, and 10s (“skip counting”). Take some time this week to do active counting games, such as jumping rope, tossing a ball back and forth, or doing hand-clapping games while skip counting. Take turns with your child saying the numbers, or say them in unison. Practice throughout the week in a variety of ways to review the 2, 5, and 10 times tables.
3. Do some or all of the practice sets in this lesson:
 - Practice Adding
 - Practice Subtracting
 - Practice Adding Columns of Numbers
 - Practice Skip Counting and Sequencing

Activity

Math Games

All games can be played exactly as outlined, but we suggest that you use your imagination to create new versions that suit your child’s particular needs. Most games can be changed for use in a variety of different situations.

ASSIGNMENT SUMMARY

- ☐ Review four processes, orally and in writing.
- ☐ Practice skip counting by 2s, 5s, and 10s.

Complete practice sets

- ☐ Practice Adding
- ☐ Practice Subtracting
- ☐ Practice Adding Columns of Numbers
- ☐ Practice Skip Counting and Sequencing

Activity

- ☐ Math Games

MATERIALS

poster board
crayons or colored pencils
small playing pieces
one die
colored sidewalk chalk
deck of cards

Store-bought games that use numbers are also excellent practice and lots of fun. Ideas include Monopoly, Dominoes, and Yahtzee, as well as many card games.

Number Pie

MATERIALS

poster board
crayons or colored pencils
small playing pieces
1 die

Number of players: Unlimited

1. Draw a large circle on a piece of poster board and divide it into 14 even slices. Number each slice of the circle, using the numbers from 1–14 in random order. Make your number pie colorful and attractive (see diagram).
2. Each player needs a small playing piece, such as a dried bean, pebble, or penny.
3. Designate the slot with “1” as the starting place. Players will be moving their playing pieces around the entire circle from there.
4. To play, throw the die. The player must add the number on the die to the number in the pie slice their playing piece currently occupies.

Example: Your child throws a 5, and her playing piece is on 1. She must add $5 + 1$. If she answers correctly, she moves her playing piece to the next slice and adds 5 to that number. In this fashion, she progresses around the entire circle, adding 5 to each number. If she keeps answering correctly, she keeps taking another turn. If she is unable to answer a problem, other players may help her; or, she forfeits her turn and the next player throws the die and proceeds in the same fashion.



Number Hopscotch

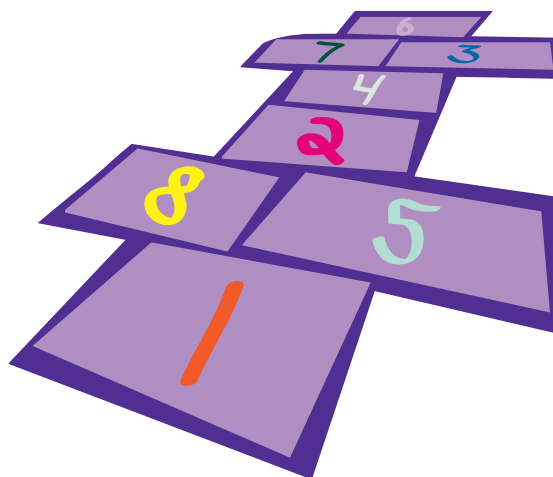
MATERIALS

colored chalk

driveway or other large flat surface

Number of players: Unlimited

Note: This game will quickly take the student into addition far beyond 20, so it is best for those who are very comfortable with number combinations up to 20 and are ready for more of a challenge.



1. With colored chalk, draw a large hopscotch board on your driveway or other appropriate surface. It should have enough squares to include all the numbers from 1–10, or higher if you desire. Write the numbers in the squares in random order.
2. To play: Hop onto the first square and add that number to itself. (If the first square has a 5 written on it, add $5 + 5$.) Next, hop to the next square and add that number to the current sum. (If the next square is 7, add $10 + 7$.) When you land with two feet on two squares, add the two squares together first, and then add them to the current sum—this will not be easy! Make your way through all the squares, adding the numbers to the current total. See how fast you can hop and add!
3. When you get to the end of the squares, turn around and play it backward, subtracting as you hop back toward the first square.

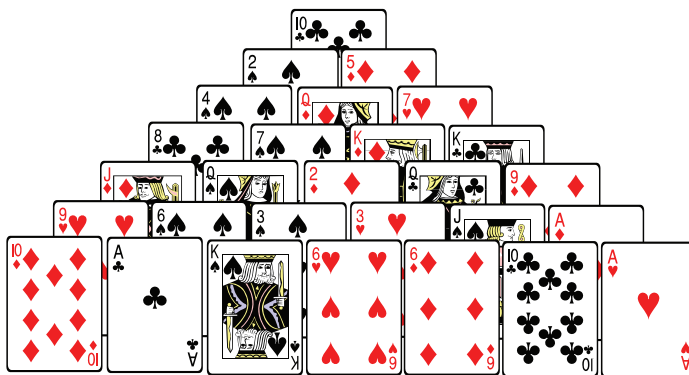
Pyramid Solitaire

MATERIALS

a full deck of cards

Number of players: One

Lay out the cards faceup in a pyramid shape. Start with one card, then place two cards overlapping the bottom of the first card, then place three cards overlapping the bottom of those two, and so on, until you have laid out a pyramid. There should be 7 cards in the final row at the bottom. (See the illustration above.) Lay the rest of the cards facedown.



1. King = 13, Queen = 12, Jack = 11, 10 = 10, 9 = 9, and so on down to Ace = 1.

2. The object is to remove all the cards from the pyramid. This is done by adding together any pairs of cards that are not covered by any other card to make a sum of 13. Remove each card as you add it. A King stands alone, so if a King is not covered, simply remove it. You are looking for pairs that equal 13 ($9 + 4$, $10 + 3$, Jack + 2, etc.). Remove all the pairs you can. You are likely to have many cards left that cannot be removed.
3. When you have made all the sums of 13 you can, begin going through the cards remaining in the deck, one by one. Whenever a card is turned up that can be matched with one of the completely exposed cards on the pyramid to make a sum of 13, set those two cards aside.
4. Go through the extra stack as often as necessary—but only in the order they appear as you turn them over one by one. When no more combinations of 13 can be made, you're done! Your goal is to use all the cards and use up the entire pyramid, but you will “win” the game only occasionally.
5. If your child has trouble remembering the value of the face cards, you can write them down so he can refer to it as often as necessary, or you can remove the face cards from the deck.
6. To make the game trickier and improve mental math skills, you can also allow three-card combinations that add up to 13.

Concentration

MATERIALS

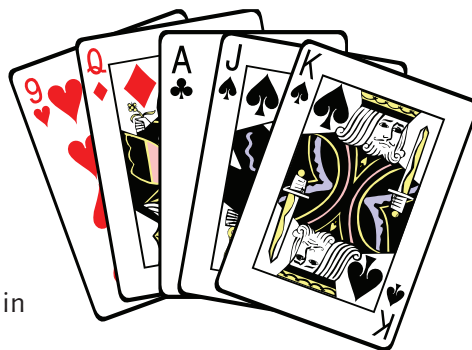
a full deck of cards

Number of players: Unlimited

1. Just as with any regular game of concentration, begin by shuffling the deck and laying all the cards out face down in a large, orderly rectangle.
2. The goal is to pair each card with another of the same number, thereby winning the most number of pairs. Players go about this by turning over two cards per turn. Players may only keep cards that match (a pair of 3s, a pair of 7s, a pair of Queens, etc.). The hitch is that each player must also add (or subtract, depending on what you are currently working on with your child) the numbers on the two cards she turns over each turn.

Example: Player #1 turns over a 3 and a 4. He adds $3 + 4$. Clearly, these are not a pair, so he doesn't get to keep them. Player #2 turns over a 3 and a 7 and adds $3 + 7$. She doesn't get to keep them, because they're not a pair. Now it is Player #1's turn again, and he remembers where both the 3s are. He turns them over, adds $3 + 3$, and removes the two 3s from the playing field. In this way, turn after turn, your child is practicing adding (or subtracting) while also exercising visual memory in trying to locate the card pairs.

3. If you are playing competitively, the player with the most pairs of cards at the end of the game is the winner.



Duel

MATERIALS

a full deck of cards

Number of players: Two

1. Deal out the entire deck, facedown, so each player ends up with half a deck.
2. At the same time, the players turn the top card faceup. The person with the higher card wins the two cards, but only if she can add (or subtract, depending on what you are working on) the numbers on the cards correctly. If the arithmetic is done correctly the player keeps the pair of cards; otherwise the cards are returned to the bottom of the deck.
3. Decide ahead of time what math operation you will practice with this game. It's good for addition, subtraction, and even multiplication. The adult may also make mistakes for the child to catch, and if the child can catch the errors, she wins the cards.

Skip-Counting Game for Times Table Practice

Number of players: Unlimited

1. Decide which times table to use for skip counting. We suggest beginning with 2, 5, or 10. When you get more involved in a times table review, expand the game to include any table you are working on.
2. While marching around in a large circle, skip count (chanting or singing, if you like) up to 50. (If you are starting with skip counting by 2 or if your child finds this activity to be very challenging, begin by counting only up to 20 until your child feels confident.) When you get to 50, you must begin to march backward while skip counting backward down through the numbers to zero.

Example: If you had planned to count by 5s, march forward and say, "5, 10, 15, 20, 25, 30, 35, 40, 45, 50," and then begin marching backward, saying, "50, 45, 40, 35," etc. Try to create a smooth transition when you hit 50, so you move forward from 45 to 50 and then immediately backward to 45 as you move down the numbers again.
3. Your child might also enjoy clapping while marching, but don't give up the marching. The physical movement is a crucial part of what makes this game effective for memorization. Most children respond well to music and rhythm, and will also benefit from chanting the numbers to a simple tune.

Practice Adding

$$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$$

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

$$\begin{array}{r} 2 \\ + 1 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ + 0 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 2 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ + 0 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$$

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

Practice Subtracting

$$\begin{array}{r} 7 \\ -1 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ -2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ -1 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ -8 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ -3 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ -6 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ -5 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ -0 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ -0 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ -1 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ -6 \\ \hline \end{array}$$

Practice Adding Columns of Numbers

$$\begin{array}{r} 2 \\ 4 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ 4 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ 1 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ 5 \\ + 2 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ 3 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ + 0 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ 2 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ 1 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ 3 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ 2 \\ 3 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ 6 \\ 3 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ 5 \\ 3 \\ + 1 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ 4 \\ 6 \\ + 2 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ 1 \\ 2 \\ + 3 \\ \hline \end{array}$$

Practice Skip Counting and Sequencing

2, 4, _____, 8, 10, 12, _____, 16, _____, 20, _____, _____, _____, 30

40, 42, 44, _____, _____, 50, 52, 54, _____, _____, 60

5, 10, _____, 20, _____, 30, 35, _____, _____, 50

100, 105, 110, _____, 120, 125, _____, _____, 140, _____, 150

0, 10, 20, _____, 40, _____, _____, 70, _____, _____, 100

200, 210, _____, 230, _____, _____, _____, 270, _____, _____, 300

50, _____, 60, _____, _____, 75, _____, _____, 90, _____, 100

100, 110, _____, _____, _____, _____, 160, _____, _____, 190, _____

601, 602, _____, 604, _____, _____, _____, 608, _____, 610

350, 352, _____, _____, 358, _____, 362, _____, 366, _____, 370

FOR ENROLLED STUDENTS

You will be sending a sample of work from this lesson to your Oak Meadow teacher at the end of lesson 4. In the meantime, feel free to contact your teacher if you have any questions about the assignments or the learning process. You can use the assignment summary checklist and the learning assessment form to keep track of your student's progress. You will be sending this documentation to your teacher every four weeks (with each submission of student work).

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.

SKILLS	Developing	Consistent	Competent	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				

Lesson

2

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.

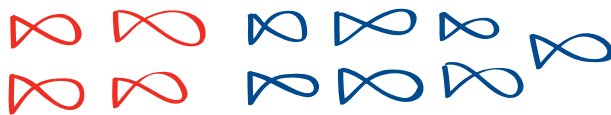
New Concepts

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:

$$\begin{array}{r} 4 + 7 = 11 \\ 4 \\ + 7 \\ \hline 11 \end{array}$$

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, 1,000, 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
- ☐ Place Value Practice
- ☐ Word Problems for Adding and Subtracting

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 them 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
 - Practice Adding and Subtracting Larger Numbers
 - Place Value Practice
 - 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 progress with the assignment summary checklist and the learning assessment form.

Review 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 Columns of Numbers

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

$$\begin{array}{r} 21 \\ + 18 \\ \hline \end{array}$$

$$\begin{array}{r} 13 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 56 \\ + 23 \\ \hline \end{array}$$

$$\begin{array}{r} 82 \\ + 17 \\ \hline \end{array}$$

$$\begin{array}{r} 55 \\ - 34 \\ \hline \end{array}$$

$$\begin{array}{r} 47 \\ - 22 \\ \hline \end{array}$$

$$\begin{array}{r} 66 \\ - 31 \\ \hline \end{array}$$

$$\begin{array}{r} 89 \\ - 45 \\ \hline \end{array}$$

$$\begin{array}{r} 123 \\ + 456 \\ \hline \end{array}$$

$$\begin{array}{r} 340 \\ + 229 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ 1 \\ 2 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ 3 \\ 4 \\ + 2 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ 4 \\ 7 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 204 \\ + 263 \\ \hline \end{array}$$

$$\begin{array}{r} 421 \\ + 366 \\ \hline \end{array}$$

More Practice Adding and Subtracting

$$\begin{array}{r} 7 \\ - 0 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ - 5 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 11 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 65 \\ + 12 \\ \hline \end{array}$$

$$\begin{array}{r} 91 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 18 \\ - 9 \\ \hline \end{array}$$

$$\begin{array}{r} 41 \\ + 36 \\ \hline \end{array}$$

$$\begin{array}{r} 72 \\ - 22 \\ \hline \end{array}$$

$$\begin{array}{r} 873 \\ - 141 \\ \hline \end{array}$$

$$\begin{array}{r} 667 \\ - 245 \\ \hline \end{array}$$

$$\begin{array}{r} 348 \\ - 36 \\ \hline \end{array}$$

$$\begin{array}{r} 876 \\ - 72 \\ \hline \end{array}$$

$$\begin{array}{r} 421 \\ + 36 \\ \hline \end{array}$$

Practice Adding and Subtracting Larger Numbers

$$\begin{array}{r} 124 \\ + 305 \\ \hline \end{array}$$

$$\begin{array}{r} 416 \\ + 242 \\ \hline \end{array}$$

$$\begin{array}{r} 190 \\ + 208 \\ \hline \end{array}$$

$$\begin{array}{r} 276 \\ - 136 \\ \hline \end{array}$$

$$\begin{array}{r} 976 \\ - 325 \\ \hline \end{array}$$

$$\begin{array}{r} 842 \\ - 340 \\ \hline \end{array}$$

$$\begin{array}{r} 758 \\ - 437 \\ \hline \end{array}$$

$$\begin{array}{r} 415 \\ + 362 \\ \hline \end{array}$$

$$\begin{array}{r} 4,643 \\ + 246 \\ \hline \end{array}$$

$$\begin{array}{r} 8,987 \\ - 3,214 \\ \hline \end{array}$$

$$\begin{array}{r} 9,940 \\ - 720 \\ \hline \end{array}$$

$$\begin{array}{r} 8,763 \\ - 721 \\ \hline \end{array}$$

Place Value Practice

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.

SKILLS	Developing	Consistent	Competent	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				

Lesson

6

Division with Remainders

Throughout the year, continue reviewing times tables 0–12 until they become automatic. Use a variety of practice techniques, including games, physical approaches, verbal drills, and written problems.

Assignments

1. Review the concepts of greater than, less than, and equal to. Write down pairs of whole numbers and ask your child to identify one number as greater than, less than, or equal to the other. Start with easy numbers before progressing to more challenging material. Have your child use the symbols $>$ (greater than), $<$ (less than), or $=$ (equal to).

For example: $6 > 3$ $8 < 10$ $12 > 9$ $20 = 20$

When your child feels confident with simple problems, you can offer ones like this:

$$\begin{array}{rcl} 52 & \underline{\hspace{2cm}} & 81 \\ 1,344 & \underline{\hspace{2cm}} & 1,452 \\ 1,105 & \underline{\hspace{2cm}} & 1,105 \\ 8 + 2 & \underline{\hspace{2cm}} & 3 + 9 \\ 4 \times 1 & \underline{\hspace{2cm}} & 7 - 3 \\ 3 \times 5 & \underline{\hspace{2cm}} & 15 + 2 \end{array}$$

2. Practice simple division with remainders in vertical format. For now, you may want to stay within the bounds of the times tables your child has mastered. More complicated long division will be presented later.

Example:

$$\begin{array}{r} 1 \text{ r}1 \\ 4 \overline{)5} \end{array} \qquad \begin{array}{r} 2 \text{ r}3 \\ 6 \overline{)15} \end{array}$$

ASSIGNMENT SUMMARY

- ☐ Review using signs for *greater than*, *less than*, and *equal*.
- ☐ Practice division with remainders.

Complete practice sets

- ☐ Practice Odd and Even
- ☐ Practice Greater Than, Less Than, Equal To
- ☐ Practice Multiplication and Division
- ☐ Practice Addition and Subtraction
- ☐ Practice Division with Remainders

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

- Practice Odd And Even
- Practice Greater Than, Less Than, Equal To
- Practice Multiplication and Division
- Practice Addition and Subtraction
- Practice Division with Remainders

FOR ENROLLED STUDENTS

A sample of work from this lesson will be sent to your Oak Meadow teacher at the end of lesson 8.

Continue to use the assignment checklist and learning assessment form to help you organize your lessons and track your student's progress.

Practice with Odd and Even

1. List 4 even numbers between 0 and 20.

2. List 5 odd numbers between 1 and 19.

3. Circle the even numbers below:

1 4 7 9 6 3 12 15 16 20 24 13 8

4. Circle the odd numbers below:

3 4 8 9 11 12 15 16 17 18 24 27

Practice Greater Than, Less Than, Equal To

1. 16 _____ 13

2. 29 _____ 62

3. 5 _____ 11

4. 25 _____ 52

5. 3×12 _____ 40

6. $33 - 11$ _____ 2×11

7. $9 + 5$ _____ $2 + 12$

8. 8×2 _____ $17 - 3$

9. 3×6 _____ 20

10. If a number is more than 5×4 , is it $>$ (greater than), $<$ (less than), or $=$ (equal to) 15?11. If a number is two less than 6×5 , is it $>$ (greater than), $<$ (less than), or $=$ (equal to) 20?12. If a number is either 6×4 or 3×8 , is it $>$ (greater than), $<$ (less than), or $=$ (equal to) 27?13. Make up a series of practice problems along these lines. Let your child make up some for you, too.
Take turns trying to trick each other.

Practice Multiplication and Division

$5 \times 6 = \underline{\hspace{2cm}}$

$42 \div 7 = \underline{\hspace{2cm}}$

$8 \times 4 = \underline{\hspace{2cm}}$

$9 \times 3 = \underline{\hspace{2cm}}$

$64 \div 8 = \underline{\hspace{2cm}}$

$15 = 3 \times \underline{\hspace{2cm}}$

$24 \div 8 = \underline{\hspace{2cm}}$

$6 \times \underline{\hspace{2cm}} = 48$

$72 = 9 \times \underline{\hspace{2cm}}$

Practice Adding and Subtracting

$$\begin{array}{r} 12 \\ 47 \\ + 62 \\ \hline \end{array}$$

$$\begin{array}{r} 326 \\ - 243 \\ \hline \end{array}$$

$$\begin{array}{r} 729 \\ + 496 \\ \hline \end{array}$$

$$\begin{array}{r} 868 \\ - 693 \\ \hline \end{array}$$

Practice Division with Remainders

$$4 \overline{)15}$$

$$5 \overline{)26}$$

$$3 \overline{)11}$$

$$8 \overline{)65}$$

$$12 \overline{)28}$$

$$3 \overline{)17}$$

$$2 \overline{)9}$$

$$6 \overline{)39}$$

Learning Assessment

Use these assessment rubrics to 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.

SKILLS	Developing	Consistent	Competent	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				

Lesson

7

Roman Numerals and Multistep Word Problems

New Concepts

Some of the word problems this week have multiple steps. You may have to help your child figure out how to do one step first and get an answer, and then use that answer to calculate the second step. Encourage your child to write out each individual equation so they don't get confused.

Here is an example:

Riley and Liam were eating a pizza that was cut into 8 slices. Riley put 3 slices on his plate and Liam put 2 slices on his. After eating 2 of his slices, Riley decided he was full and put his last slice back in the pan. How many slices of pizza were left over?

Figure it out one step at a time.

Riley took 3 slices: $8 - 3 = 5$

Liam took 2 slices: $5 - 2 = 3$

Riley put 1 slice back: $3 + 1 = 4$

There were 4 slices left over.

Here's another way your child might work the problem:

Riley took 3 slices and Liam took 2 slices: $3 + 2 = 5$

The pizza originally had 8 slices: $8 - 5 = 3$

Riley put 1 slice back: $3 + 1 = 4$

There were 4 slices left over.

Either way is correct. In fact, it is a great idea to have your child talk you through how they solved it, and then you might show your child (or ask your child) another way to do it.

ASSIGNMENT SUMMARY

- ☐ Solve word problems requiring multiple steps.
- ☐ Review Roman numerals 1 through 50.
- ☐ Continue memorizing the times tables.

Complete practice sets

- ☐ Practice Using Greater Than, Less Than, and Equal To
- ☐ Practice Division
- ☐ Practice Roman Numerals
- ☐ Practice Adding and Subtracting Roman Numerals
- ☐ More Practice with Roman Numerals
- ☐ Word Problems

Take the time to do a few problems like this together to make sure your child understands the process before moving on to the practice sets.

Assignments

1. Introduce your child to word problems with multiple steps.
2. Review Roman numerals. Have your child write out Roman numerals from 1–50 in crayon or colored pencil (see the Roman numeral chart below). If your child is new to Roman numerals, spread out this work over the course of a couple of weeks to give plenty of time to absorb the material in small increments. Return to Roman numerals periodically throughout the year to help your child remember them.
3. Continue memorizing any times tables your child has not yet mastered. Do simple division as part of the times table work, with and without remainders.
4. Do some or all of the practice sets in this lesson:
 - Practice Using Greater Than, Less Than, and Equal To
 - Practice Division
 - Practice Roman Numerals
 - Practice Adding and Subtracting Roman Numerals
 - More Practice with Roman Numerals
 - Word Problems

FOR ENROLLED STUDENTS

You will be sending the next batch of work to your Oak Meadow teacher at the end of the next lesson. Continue to document your student's progress using the assignment checklist and learning assessment form in each lesson.

Roman Numerals

I = 1

II = 2

III = 3

IV = 4

V = 5

VI = 6

VII = 7

VIII = 8

IX = 9

X = 10

XI = 11

XII = 12

XIII = 13

XIV = 14

XV = 15

XVI = 16

XVII = 17

XVIII = 18

XIX = 19

XX = 20

XXI = 21

XXII = 22

XXIII = 23

XXIV = 24

XXV = 25

XXVI = 26

XXVII = 27

XXVIII = 28

XXIX = 29

XXX = 30

XXXI = 31

XXXII = 32

XXXIII = 33

XXXIV = 34

XXXV = 35

XXXVI = 36

XXXVII = 37

XXXVIII = 38

XXXIX = 39

XL = 40

XLI = 41

XLII = 42

XLIII = 43

XLIV = 44

XLV = 45

XLVI = 46

XLVII = 47

XLVIII = 48

XLIX = 49

L = 50

C = 100

D = 500

M = 1,000

Practice Using Greater Than, Less Than, and Equal To

$78 \underline{\hspace{1cm}} 19$

$94 \underline{\hspace{1cm}} 58$

$72 \underline{\hspace{1cm}} 10$

$27 \underline{\hspace{1cm}} 28$

$33 \underline{\hspace{1cm}} 52$

$82 \underline{\hspace{1cm}} 31$

$22 \underline{\hspace{1cm}} 17$

$20 \underline{\hspace{1cm}} 85$

$49 \underline{\hspace{1cm}} 72$

$23 \underline{\hspace{1cm}} 90$

$46 \underline{\hspace{1cm}} 46$

$37 \underline{\hspace{1cm}} 69$

$66 \underline{\hspace{1cm}} 22$

$50 \underline{\hspace{1cm}} 47$

$60 \underline{\hspace{1cm}} 53$

$78 \underline{\hspace{1cm}} 31$

$11 \underline{\hspace{1cm}} 51$

$68 \underline{\hspace{1cm}} 68$

$65 \underline{\hspace{1cm}} 44$

$63 \underline{\hspace{1cm}} 11$

$28 \underline{\hspace{1cm}} 49$

Practice Division

$$8 \overline{)24}$$

$$7 \overline{)21}$$

$$2 \overline{)25}$$

$$7 \overline{)14}$$

$$4 \overline{)8}$$

$$8 \overline{)16}$$

$$7 \overline{)31}$$

$$4 \overline{)12}$$

$$1 \overline{)37}$$

$$9 \overline{)45}$$

$$7 \overline{)42}$$

$$10 \overline{)21}$$

$$3 \overline{)15}$$

$$2 \overline{)19}$$

$$6 \overline{)30}$$

$$3 \overline{)20}$$

$$3 \overline{)21}$$

$$4 \overline{)44}$$

$$3 \overline{)24}$$

$$5 \overline{)5}$$

Practice Roman Numerals

$$\text{VII} = 7$$

$$\text{VIII} = \underline{\hspace{2cm}}$$

$$\text{IV} = \underline{\hspace{2cm}}$$

$$\text{II} = \underline{\hspace{2cm}}$$

$$\text{X} = \underline{\hspace{2cm}}$$

$$\text{XI} = \underline{\hspace{2cm}}$$

$$\text{IX} = \underline{\hspace{2cm}}$$

$$\text{VI} = \underline{\hspace{2cm}}$$

$$\text{XV} = \underline{\hspace{2cm}}$$

$$\text{XVII} = \underline{\hspace{2cm}}$$

$$\text{XIX} = \underline{\hspace{2cm}}$$

$$\text{L} = \underline{\hspace{2cm}}$$

Practice Adding and Subtracting Roman Numerals

Remember to write your answer in Roman numerals!

$$\text{VIII} + \text{X} = \underline{\hspace{2cm}}$$

$$\text{IX} - \text{V} = \underline{\hspace{2cm}}$$

$$\text{XX} + \text{IV} = \underline{\hspace{2cm}}$$

$$\text{XVI} - \text{IX} = \underline{\hspace{2cm}}$$

$$\text{XX} + \text{X} = \underline{\hspace{2cm}}$$

$$\text{XVII} + \text{III} = \underline{\hspace{2cm}}$$

$$\text{XI} - \text{IV} = \underline{\hspace{2cm}}$$

$$\text{VIII} + \text{XX} = \underline{\hspace{2cm}}$$

$$\text{XXV} + \text{XXII} = \underline{\hspace{2cm}}$$

Write as a Roman Numeral.

$$34 \underline{\hspace{2cm}}$$

$$15 \underline{\hspace{2cm}}$$

$$29 \underline{\hspace{2cm}}$$

$$48 \underline{\hspace{2cm}}$$

More Practice with Roman Numerals

Add greater than, less than, or equal signs.

$$\text{II} \quad \underline{\hspace{1cm}} \quad \text{IV}$$

$$\text{XXX} \quad \underline{\hspace{1cm}} \quad \text{XIX}$$

$$\text{IX} \quad \underline{\hspace{1cm}} \quad \text{XI}$$

$$\text{XXIX} \quad \underline{\hspace{1cm}} \quad \text{XXXV}$$

Write the answer in Roman numerals.

$$\text{III} + \text{IV} = \underline{\hspace{2cm}}$$

$$\text{XI} + \text{V} = \underline{\hspace{2cm}}$$

$$\text{VII} + \text{XXI} = \underline{\hspace{2cm}}$$

$$\text{V} + \text{V} + \text{IV} = \underline{\hspace{2cm}}$$

$$\text{V} + \text{V} + \text{V} + \text{V} + \text{X} + \text{X} + \text{X} = \underline{\hspace{2cm}}$$

Word Problems

Show how you get your answer by writing the problem as numbers first, and then writing your answer in a complete sentence. Remember to draw a picture to help you see the problem. Use a clock to figure out the answers to the time problems.

1. Jenny and David were planting a garden. In one section they planted 4 rows with 3 plants in each row. In another section they planted 2 rows with 12 plants in each row. How many plants were there in all?
2. Shannon's grandmother had lots of boxes in her attic. In 12 of the boxes there were old dolls. Half of the boxes had 3 dolls in each box and half of them had only 1 doll in each box. How many dolls were there?
3. At snack time, Mom served carrot and celery sticks. Tim loved carrots, and he took 7 carrot sticks. He took only 2 celery sticks. Then he dropped 1 of his carrot sticks on the floor. How many vegetable sticks were left on his plate?
4. Rose had a dance lesson from 3:00 to 4:15. How many minutes long was her lesson?
5. There were 6 children in Aaron's art class, plus 2 teachers. They were going on a field trip. Both teachers drove an equal number of passengers. How many people were in each car? (Hint: Don't forget to count the teachers!)
6. The art students left on their field trip at 1:20. They were supposed to be at the art show by 2:15. How much time did they have to get to the art show?
7. The art show had many rooms. In one room the students saw 12 paintings. In another room they saw 25 paintings. In a third room they saw 17 more paintings. How many paintings did they see in all?
8. In addition to seeing paintings, the art class saw 5 sculptures in one room, 13 sculptures in another room, and 9 sculptures in the main hall. How many sculptures did they see? How many works of art (paintings and sculptures) did they see altogether?

Learning Assessment

Use these assessment rubrics to track your student's progress. 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.

SKILLS	Developing	Consistent	Competent	Notes
Solves multistep word problems				
Demonstrates knowledge of Roman numerals to 1,000				
Uses the four processes 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 in vertical format				
Solves simple division problems with remainders in vertical format				
Identifies place value up to seven 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				