MATH

LESSONS FOR A LIVING EDUCATION

eve 5

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Dedicated to my favorite students,
who were also my teachers.
I love you!

Scope and Sequence

Using This Course

Features: The suggested weekly schedule enclosed has easy-to-manage lessons that guide the reading, worksheets, and all assessments. The pages of this course are perforated and three-hole punched so materials are easy to tear out, hand out, grade, and store. Teachers are encouraged to adjust the schedule and materials needed in order to best work within their unique educational program.

Lesson Scheduling: Students are instructed to read the pages in their book and then complete the corresponding section provided by the teacher. Assessments that may include worksheets, activities, quizzes, and tests are given at regular intervals with space to record each grade. Space is provided on the weekly schedule for assignment dates, and flexibility in scheduling is encouraged. Teachers may adapt the scheduled days per each unique student situation. As the student completes each assignment, this can be marked with an "X" in the box.

	**Approximately 30 minutes per lesson, five days a week, for 36 weeks**
	**Solution Manual for worksheets is available in the back of this book**
	**Review sections can be used as quizzes**
	**Worksheets are included for each section**
	**Designed for grade 5 in a one-year course**

Course Description

Welcome to the fifth book in the **Math Lessons for a Living Education** series! You will find that *Math Lessons for a Living Education* is a unique approach to learning math. A blend of stories, copy work, oral narration, and hands-on experience brings the concepts to life and invites the child to explore the world around them. The tone of this math book is meant to speak personally to each child, and the method easily adapted to any teaching style.

The first 30 lessons have a story about the twins, taught through hands-on learning. After the story, there are exercises for students to practice the lesson they learned and to review what they have learned earlier. The first lessons provide review time, and the last 6 lessons are focused reviews, covering topics learned throughout the first 30 lessons.

Course Objectives: Students completing this course will

- Review basic operations
- Explore new concepts like fractions, mixed numbers, decimals, and percents
- Learn how to find greatest common factor and least common multiple
- Add, subtract, multiply, and divide decimals.

Teaching mathematics as a living subject

As a teacher and a mother, I have discovered that true education is based on relationships: the relationship the child makes with the amazing concepts in the world around them; the relationship the teacher and the child make with each other; and most importantly and ultimately, the relationship the child makes with their Creator. It is built on discovering the God of the Universe — the One who holds the universe in His hands, but at the same time, lovingly dwells in the heart of a little child. The story in Book 5 is meant to reach into a child's world, grab their attention and invite them into the learning process. The concepts are not taught through drill only, but also through encouraging the student to hone their critical thinking skills and think outside of the box. This curriculum teaches the student math, but it is not result-oriented, focusing only on grades; instead it is skill and process-oriented. I have discovered that it is in the everyday that we grow and become who we are meant to be. It is in the little discoveries all along the path of life that we grow, learn, develop, and discover who God is and, in turn, see ourselves the way He sees us. Math concepts are learned well, as it is learned in the context of living, in the midst of discovery, and through the worldview glasses that focus on the bigger picture.

About manipulatives

In the back of the book, you will find a manipulatives section. It is imperative that you prepare these before you start the book. You will need these resources:

1. contact paper and construction paper
2. large index cards
3. brass fasteners
4. crayons, markers, and colored pencils
5. glue or paste
6. hole punch and hole reinforcers
7. rings to keep flashcards together
8. a plastic shoe box with lid in which to store manipulatives
9. (optional but helpful) stickers to use for flashcards
10. pictures from old magazines
11. poster board (several large pieces)
12. foot ruler (with inches marked)
13. simple indoor/outdoor thermometer (non-digital)
14. rice
15. measuring devices
    - cup set: 1 cup, $\frac{1}{2}$ cup, $\frac{1}{4}$ cup, $\frac{1}{3}$ cup
    - spoon set: 1 tbs, $\frac{1}{2}$ tbs, 1 tsp, $\frac{1}{2}$ tsp, $\frac{1}{4}$ tsp
    - large plastic bowls (mixing bowls or ice cream buckets)

Grading subjective assignments

Most often with math the grading is very objective. For example, 2 + 2 = 4, and no amount of individual expression changes this answer. However, there are times in this course when the answer may depend on a student's reflections of what he or she has learned on a particular day or in a week of assignments. In these subjective cases, the teacher can base a grade for these responses on several more objective measures. Does the student seem to understand the question and answer it as clearly as possible? Does the answer seem complete or does it fail to answer all aspects of the question? So a student may receive full credit if they seemed to meet all the assignment requirements, may get a passing grade if they meet some of the requirements, or may need to repeat the assignment if they didn't meet any of the requirements.

A – Student showed complete mastery of concepts with no errors.

B – Student showed mastery of concepts with minimal errors.

C – Student showed partial mastery of concepts. Review of some concepts is needed.

D – Student showed minimal understanding of concepts. Review is needed.

F – Student did not show understanding of concepts. Review is needed.

How to use everyday items as manipulatives

Note to the teacher:

Welcome to *Math Lessons for a Living Education Book 5*. If this is your first year using this math curriculum, please take the time before you start, in order to familiarize yourself with the layout of the course. *Math Lessons for a Living Education* uses a unique approach to teaching and learning math concepts. Unlike many math curriculums, *Math Lessons For a Living Education* does not focus on memorization of computation to the exclusion of conceptual and critical understanding. In this course, you will find plenty of practice and reinforcement of concepts and computation. This is not a course that will allow students to quickly shove facts into their short term memories for the sole purpose of passing a quiz and getting a good grade. Grades are not the focus of this course; long term understanding and developed critical thinking skills are the desired outcome and will form a firm foundation on which higher math can be built.

Before you begin this book, please make sure you have prepared the charts from the manipulatives section. You may laminate a copy of each chart for each student, or if you prefer, make copies to store in a file and distributed as needed throughout the year.

Here is a list of topics that are used as crosscurricular focuses throughout the year. You may wish to have library books about topics of interest.

- the country of Peru
- a good Bible story book
- recipe books (or boxes)
- the history of the Volkswagen "Bug"
- Dewey Decimal System
- recycling
- Mexico
- Creation Science vs. Evolution
- Ancient Mayans
- auto mechanics shop
- the art of quilting
- Christmas traditions
- banks and personal financing
- geometry-focused books
- wilderness survival

First Semester Suggested Daily Schedule

Date	Day	Assignment	Due Date	✓	Grade
First Semester-First Quarter					
Week 1	Day 1	Read Lesson 1 • Page 15 Complete Lesson 1 Exercise 1 **Review Week** • Page 16			
	Day 2	Complete Lesson 1 Exercise 2 • Page 17			
	Day 3	Complete Lesson 1 Exercise 3 • Page 18			
	Day 4	Complete Lesson 1 Exercise 4 • Page 19			
	Day 5	Complete Lesson 1 Exercise 5 • Page 20			
Week 2	Day 6	Read Lesson 2 • Page 21 Complete Lesson 2 Exercise 1 **Review Week** • Page 22			
	Day 7	Complete Lesson 2 Exercise 2 • Page 23			
	Day 8	Complete Lesson 2 Exercise 3 • Page 24			
	Day 9	Complete Lesson 2 Exercise 4 • Page 25			
	Day 10	Complete Lesson 2 Exercise 5 • Page 26			
Week 3	Day 11	Read Lesson 3 • Pages 27-28 Complete Lesson 3 Exercise 1 **Review Week** • Pages 29-30			
	Day 12	Complete Lesson 3 Exercise 2 • Page 31			
	Day 13	Complete Lesson 3 Exercise 3 • Page 32			
	Day 14	Complete Lesson 3 Exercise 4 • Page 33			
	Day 15	Complete Lesson 3 Exercise 5 • Page 34			
Week 4	Day 16	Read Lesson 4 • Page 35 Complete Lesson 4 Exercise 1 **Review Week** • Page 36			
	Day 17	Complete Lesson 4 Exercise 2 • Page 37			
	Day 18	Complete Lesson 4 Exercise 3 • Page 38			
	Day 19	Complete Lesson 4 Exercise 4 • Page 39			
	Day 20	Complete Lesson 4 Exercise 5 • Page 40			
Week 5	Day 21	Read Lesson 5 • Pages 41-42 Complete Lesson 5 Exercise 1 **Review Week** • Page 43			
	Day 22	Complete Lesson 5 Exercise 2 • Page 44			
	Day 23	Complete Lesson 5 Exercise 3 • Page 45			
	Day 24	Begin Lesson 5 Exercise 4-5 • Page 46			
	Day 25	Finish Lesson 5 Exercise 4-5 • Page 46			
Week 6	Day 26	Read Lesson 6 • Page 47 Complete Lesson 6 Exercise 1 **Review Week** • Page 48			
	Day 27	Complete Lesson 6 Exercise 2 • Page 49			
	Day 28	Complete Lesson 6 Exercise 3 • Page 50			
	Day 29	Complete Lesson 6 Exercise 4 • Page 51			
	Day 30	Complete Lesson 6 Exercise 5 • Page 52			

Date	Day	Assignment	Due Date	✓	Grade
Week 7	Day 31	Read Lesson 7 • Pages 53-54 Complete Lesson 7 Exercise 1 • Page 55			
	Day 32	Complete Lesson 7 Exercise 2 • Pages 56-57			
	Day 33	Complete Lesson 7 Exercise 3 • Pages 58-59			
	Day 34	Complete Lesson 7 Exercise 4 • Page 60			
	Day 35	Complete Lesson 7 Exercise 5 • Pages 61-62			
Week 8	Day 36	Read Lesson 8 • Pages 63-64 Complete Lesson 8 Exercise 1 • Pages 65-66			
	Day 37	Complete Lesson 8 Exercise 2 • Pages 67-68			
	Day 38	Complete Lesson 8 Exercise 3 • Pages 69-70			
	Day 39	Begin Lesson 8 Exercise 4 • Pages 71			
	Day 40	Finish Lesson 8 Exercise 5 • Pages 72			
Week 9	Day 41	Read Lesson 9 • Pages 73-74 Complete Lesson 9 Exercise 1 • Pages 75-76			
	Day 42	Complete Lesson 9 Exercise 2 • Page 77			
	Day 43	Complete Lesson 9 Exercise 3 • Pages 78-79			
	Day 44	Begin Lesson 9 Exercise 4-5 **Review Time** • Page 80			
	Day 45	Finish Lesson 9 Exercise 4-5 **Review Time** • Page 80			
First Semester-Second Quarter					
Week 1	Day 46	Read Lesson 10 • Pages 81-82 Complete Lesson 10 Exercise 1 • Pages 83-84			
	Day 47	Complete Lesson 10 Exercise 2 • Page 85			
	Day 48	Complete Lesson 10 Exercise 3 • Pages 86-87			
	Day 49	Complete Lesson 10 Exercise 4 • Pages 88-89			
	Day 50	Complete Lesson 10 Exercise 5 • Page 90			
Week 2	Day 51	Read Lesson 11 • Page 91 Complete Lesson 11 Exercise 1 **Review Week** • Pages 92-93			
	Day 52	Complete Lesson 11 Exercise 2 • Page 94			
	Day 53	Complete Lesson 11 Exercise 3 • Page 95			
	Day 54	Complete Lesson 11 Exercise 4 • Pages 96-97			
	Day 55	Complete Lesson 11 Exercise 5 • Page 98			
Week 3	Day 56	Read Lesson 12 • Pages 99-100 Complete Lesson 12 Exercise 1 • Pages 101-102			
	Day 57	Complete Lesson 12 Exercise 2 • Page 103			
	Day 58	Complete Lesson 12 Exercise 3 • Page 104			
	Day 59	Complete Lesson 12 Exercise 4 • Page 105			
	Day 60	Complete Lesson 12 Exercise 5 **Review Time** • Page 106			
Week 4	Day 61	Read Lesson 13 • Page 107 Complete Lesson 13 Exercise 1 • Pages 108-109			
	Day 62	Complete Lesson 13 Exercise 2 • Page 110			
	Day 63	Complete Lesson 13 Exercise 3 • Page 111			
	Day 64	Complete Lesson 13 Exercise 4 • Page 112			
	Day 65	Complete Lesson 13 Exercise 5 **Review Time** • Pages 113-114			

Date	Day	Assignment	Due Date	✓	Grade
Week 5	Day 66	Read Lesson 14 • Pages 115-116 Complete Lesson 14 Exercise 1 • Pages 117-118			
	Day 67	Complete Lesson 14 Exercise 2 • Page 119			
	Day 68	Complete Lesson 14 Exercise 3 • Page 120			
	Day 69	Complete Lesson 14 Exercise 4 • Page 121			
	Day 70	Complete Lesson 14 Exercise 5 • Page 122			
Week 6	Day 71	Read Lesson 15 • Page 123 Complete Lesson 15 Exercise 1 • Page 124			
	Day 72	Complete Lesson 15 Exercise 2 • Page 125			
	Day 73	Complete Lesson 15 Exercise 3 • Page 126			
	Day 74	Complete Lesson 15 Exercise 4 • Page 127			
	Day 75	Complete Lesson 15 Exercise 5 • Page 128			
Week 7	Day 76	Read Lesson 16 • Pages 129-130 Complete Lesson 16 Exercise 1 • Page 131			
	Day 77	Complete Lesson 16 Exercise 2 • Page 132			
	Day 78	Complete Lesson 16 Exercise 3 • Pages 133-134			
	Day 79	Complete Lesson 16 Exercise 4 • Page 135			
	Day 80	Complete Lesson 16 Exercise 5 **Review Time** • Page 136			
Week 8	Day 81	Read Lesson 17 • Pages 137-138 Complete Lesson 17 Exercise 1 • Page 139			
	Day 82	Complete Lesson 17 Exercise 2 • Pages 140-141			
	Day 83	Complete Lesson 17 Exercise 3 • Page 142			
	Day 84	Complete Lesson 17 Exercise 4 • Page 143			
	Day 85	Complete Lesson 17 Exercise 5 **Review Time** • Page 144			
Week 9	Day 86	Read Lesson 18 • Pages 145-146 Complete Lesson 18 Exercise 1 • Pages 147-148			
	Day 87	Complete Lesson 18 Exercise 2 • Pages 149-150			
	Day 88	Complete Lesson 18 Exercise 3 • Page 151			
	Day 89	Complete Lesson 18 Exercise 4 • Pages 152			
	Day 90	Complete Lesson 18 Exercise 5 **Review Time** • Pages 153-154			
		Mid-Term Grade			

Review of All Addition and Subtraction

Lesson 1

There was much excitement in the Stevens household. The four older children had volunteered to help with the younger classes at their church's fall VBS. Their church had been serving the community and surrounding areas with this outreach for twenty-five years, and this year's VBS was going to be a celebration! There was a record number of children signed up, and there was a lot to do to get ready. Each of the Stevens children were in charge of a craft, song, and game with the younger children.

Charlie was signed up to work with the six and seven year old boys. They were going to learn and put on a skit depicting some of the miracles of Jesus. Hairo was going to work with the same boys learning some songs and building props for the skits. Charlotte was going to help take care of the kindergarten age children, and Natty was going to help lead the worship songs with all of the age groups. Natty was also going to do something special. Mrs. Andrews, the VBS organizer, had asked Natty to share her story with all of the children during one of the morning sessions. Natty had agreed, but now she was so nervous! She had been working on what she was going to say to the group.

"Mom! I have gone through at least ten pieces of paper! I can't seem to get my thoughts down," Natty sighed in frustration.

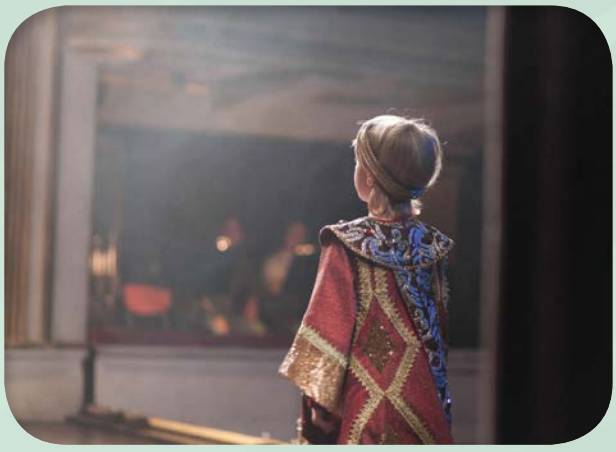
"Do you want me to help, Natty?" Charlotte asked her sister.

"I don't know. In fact, I don't know WHY I said I would do this!" Natty scowled as she balled up yet another piece of paper and threw it, rather forcefully, into the wastebasket. "I just can't seem to be able to sort through my thoughts. They are all jumbled," Natty sighed again as she took a clean piece of paper and started over.

"I know! Maybe you could use math to tell your story!" Charlie suggested. Charlie thought the answer to all of life's problems was MATH. Out of all of the Stevens children, Charlie loved math the most. In fact, math was probably his most favorite thing in the world. Math and cars.

"Oh Charlie!" Natty started to giggle. "How could math help me? My story has nothing to do with math!"

"Well, I don't know about that! All of us here could say that Jesus SUBTRACTED our sins away from us when He died for us on the cross, and then He ADDED us to His family. And because we love and obey Him, He MULTIPLIES our blessings! And of course, He said that when He comes again, He will DIVIDE the wheat — that's us — from the chaff — that's the ones who don't choose to follow Him! If that isn't math, I don't know what is!" Charlie finished with a flourish.



"Oh Charlie," Natty gasped between giggles, "you need to be a preacher! And you are right! Your math did help me! I know what I am going to write now!"

Name_____

Exercise 1

Day 1

Mental Math

20 + 8 + 6 + 11 + 3 + 5 =

110 + 120 + 350 =

1,090 + 10 + 100 =

650 + 40 + 8 + 2 =

200 + 60 + 9 + 10 =

4,001 + 9 + 80 =

Facts review. Work quickly.

+	4	6	10	8	2	3	5	1	9	7	0
6											

+	6	4	8	0	1	2	9	3	5	7	10
9											

+	2	5	8	1	10	3	6	4	0	7	9
8											

+	8	2	9	6	0	7	1	4	3	10	5
7											

Name_____

Exercise 2 Day 2

Addition review.

520 294 + 24	613 356 + 713	95,011 + 15,219	90,345 + 43,821

38 25 35 + 14	24 31 26 + 15	41 86 26 + 38

Fill in the blanks. Write the subtraction equation you used to solve the problem underneath it. The first one is done for you.

8 + 7 = 15
15 − 8 = 7

5 + _____ = 11

4 + _____ = 14

9 + _____ = 17

7 + _____ = 12

9 + _____ = 12

10 + _____ = 20

8 + _____ = 16

8 + _____ = 17

3 + _____ = 11

2 + _____ = 12

7 + _____ = 16

Name_____

Exercise 3 Day 3

Subtraction review.

9,000	3,055	20,020	52,031
- 6,826	- 2,245	- 12,172	- 10,729

Need more practice?

300	600	300
- 144	- 149	- 226

Fill in the blanks. Write the addition equation you used to solve the problem underneath it. The first one is done for you.

17 - 8 = 9

8 + 9 = 17

12 - _____ = 6

16 - _____ = 7

16 - _____ = 8

20 - _____ = 10

15 - _____ = 9

14 - _____ = 9

13 - _____ = 8

5 - _____ = 5

21 - _____ = 11

19 - _____ = 11

18 - _____ = 15

Name_____

Exercise 4 Day 4

Word Problems:

1. When Grandpa Stevens took the children to the State Fair, they counted 24 big rides in one area of the midway, 19 smaller rides in the children's area, and 15 rides along the old-fashioned board walks in the "Ole' Western Days" area. How many rides did they count all together at the fair?

2. How many more rides did they count in the midway than the children's area?

3. At the fair, Charlie bought cotton candy for $1.75, Hairo bought an ice-cream cone for $2.25, and Charlotte and Natty combined their money to buy a funnel cake for $5.90. How much money did they all spend together?

4. How much more did the girls pay for the funnel cake than Charlie paid for his cotton candy?

5. What addition clue words do you look for in a word problem?

6. What subtraction clue words do you look for in a word problem?

Name_____

Exercise 5 Day 5

Teacher

Please take the time to make sure your student(s) completely understand the process of solving word problems as seen on the previous page. Use this exercise to talk through this process.

Write your own word problems and solve them. Narrate to your teacher the steps of solving an addition word problem and a subtraction word problem.

My addition word problems...

1.

2.

My subtraction word problems...

1.

2.

Factoring

Lesson 12

"Mom, do you think there is something that Natty and I could do like Charlie and Hairo?" Charlotte asked with her arms in the soapy dishwater. She had soap suds up to her elbows as she stood on the stool, scrubbing cookie sheets. She and Natty had made oatmeal raisin cookies for snack.

"I don't know Charlotte. Would you and Natty like to volunteer at the library? I heard Mrs. Drew saying that they are short on volunteers this fall. You wouldn't get paid for it, but it would be a nice opportunity for you!" Maddie Stevens answered thoughtfully.

"Oh yes! I know I would love to do that! I'll ask Natty, and if she wants to help, may we go today after school? Please?" Charlotte asked excitedly as she wiped her hands on the towel.

"Yes, that would be fine. Just make sure you both have finished your independent work first, okay?" her mom answered with a smile...

"We are going to head on down to the library now, Mom!" Charlotte called from the hallway. She and Natty had excitedly finished their school work, had their afternoon snack, and carefully brushed their hair. (Both of the girls were sporting a new hair-do, and they loved their new bangs!)

"Ok, make sure you are home by 5:30 though!" their mother called back from the kitchen. "And both of you make sure you take a jacket!"

"We have them, Mom," they answered together. Linking arms, the girls skipped down the sidewalk and turned left down the street. Their house was only two blocks from the library, which meant they could go there by themselves.

"Mrs. Drew, we are here to sign up as library volunteers!" Natty said, smiling up at the tall lady behind the library desk. "Our mom says that we can volunteer after school, three days a week - just not Wednesdays because of Bible club that evening. Can you use our help?"

"Oh my, YES! You girls are an answer to my prayer! I've lost my helper, because Mrs. Snowden is finished working here with me - she's about to have her first baby, you know," Mrs. Drew whispered to the girls. Mrs. Drew always whispered - she had a lot of practice talking in her "library voice."

The girls nodded. They knew Mrs. Snowden was about to have her baby; Mom had just mentioned that this morning during prayer time.

"Mrs. Drew, can you show us how we can help?" Charlotte asked. Mrs. Drew tended to be a little absent minded, and sometimes had to be reminded what she was doing.

"Oh. Oh, yes, of course. Silly me," Mrs. Drew brought her attention back to the girls. "I was just thinking about my first baby..." The lady stood to her feet and came around the desk to the girls. "First," she instructed, "you two need to know about the Dewey Decimal System. Do either of you know anything about that? No? Well, ok, that is the best place to start..."

"Mrs. Drew told us about the Dewey Decimal System today, Mom!" Charlotte told her mom as she wiped off the kitchen table after supper. "She told us that it is like a big family tree, because it has branches like a tree." Charlotte giggled. Mrs. Drew was a very descriptive person and used rather flowery words. "Anyway, we learned about how each type of book in the library has its own numbers to tell us what branch it belongs to. It's still kinda confusing to me, but I know I'll get better as I practice. How 'bout you, Natty? Do you understand the Dewey Decimal System?" Charlotte asked her sister.

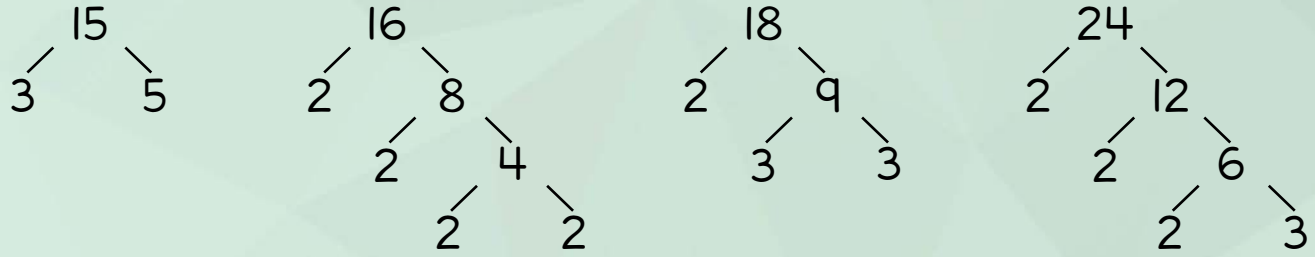
"Not really. But I'll get it," Natty answered. "Mom, what is the Dewey Decimal system for?" she asked her mother.

"Oh, I'm sure Mrs. Drew will tell you all about it!" their mom smiled. "But to put it simply, it's for organizing all of the books. In a way, it's similar to the charts you two do in math. In fact, in some ways, it's similar to factoring, which is our next new concept in math. Do you think you girls are going to enjoy working at the library?" she asked them in a whisper.

"Yes!" they both whispered back.

Just for fun!

These are called "factor trees"! (This is one way to find factors. You will learn the other way in Exercise 1.)



Name_____

Exercise 1 Day 56

New Concept!

Factors are all of the different numbers that divide evenly (without a remainder) into a number. Pairs of factors are two numbers that, when multiplied together, equal this number. Are you confused? Study these examples.

Example #1: Find the factors of 15.

Pairs of Factors
1 x 15
3 x 5
5 x 3
15 x 1

Factors
1, 3, 5, 15

When we list the factors, we write each one only once, from least to greatest.

Example #2: Find the factors of 9.

Pairs of Factors
1 x 9
3 x 3
9 x 1

Factors
1, 3, 9

Now you try it!

Find the pairs of factors of each of these numbers and list them in order from least to greatest.

Pairs of Factors for 8

_____
_____
_____
_____

Factors

_____, _____, _____, _____

Pairs of Factors for 10

_____
_____
_____
_____

Factors

_____, _____, _____, _____

Name_____

Exercise 1 Day 56

Pairs of Factors for 7	Factors
_____	_____, _____,
_____	

Pairs of Factors for 12	Factors
_____	
_____	
_____	
_____	_____, _____, _____, _____, _____, _____
_____	
_____	

Review!

On Monday, Charlotte and Natty worked at their lemonade stand from 2:30 to 3:45 p.m. Then they worked at the library from 4:00 to 5:30 p.m. How long did they work on Monday?

Name_____

Exercise 2 Day 57

Practice the new concept!

Complete the pairs of factors for these numbers.

18	20	35
1 x ____	1 x ____	1 x ____
2 x ____	2 x ____	5 x ____
3 x ____	4 x ____	7 x ____
6 x ____	5 x ____	35 x ____
9 x ____	10 x ____	
18 x ____	20 x ____	

Now list the factors for each of the numbers above.

18 _____

20 _____

35 _____

Mixed Review!

Divide and write the remainders as fractions.

$21\overline{)840}$ $15\overline{)313}$

Solve these mixed number problems.

$$\begin{array}{r} 203\frac{17}{19} \\ -\,187\frac{9}{19} \\ \hline \end{array} \qquad \begin{array}{r} 87\frac{3}{8} \\ +\,19\frac{2}{8} \\ \hline \end{array}$$

Name_____

Exercise 3 Day 58

Copywork of new concept!

Factors are all of the different numbers that divide evenly (without a remainder) into a number. Pairs of factors are two numbers that, when multiplied together, equal this number.

_____

_____

_____

_____

More practice of the new concept!

Write the pairs of factors. Note: These numbers are called prime numbers. Their only factors are 1 and themselves.

5	3	7	11
_____	_____	_____	_____
_____	_____	_____	_____

Write any three factors for each of these numbers. Optional: write all of the factors for each of the following numbers.

24 _____ 27 _____

32 _____ 64 _____

Mixed Review!

____ ÷ 9 = 4 9 x ____ = 108 ____ + 7 = 16

43 + ____ = 60 500 – 17 = ____ 27 – ____ = 18

Name_____

Exercise 4

Day 59

Practice with factoring!

Fill in this chart. The first one is done for you.

Number	Pairs of Factors	Factors
6	1 x 6 2 x 3	1, 2, 3, 6
12		
18		
25		
27		
49		
64		
72		
84		
96		
66		
50		
100		
42		
48		
11		

Name_____

Exercise 5 Day 60

Review Time!

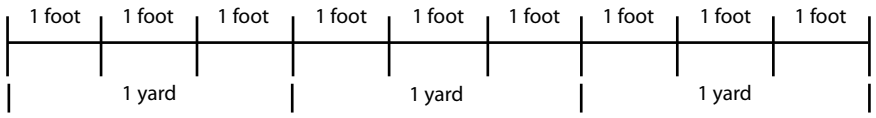
☐ Take the time now to narrate to your teacher everything you have learned about factoring.

Bonus Concept!

In Lesson 7, we discussed converting measurements. When we are going from larger units of measure to smaller units of measure, we multiply, as seen in the example:

3 yards = 9 feet

Since we know that 3 feet = 1 yard, we can multiply 3 x 3. So think: 3 groups of 3 yards.



Now you try it!

There are 5,280 feet in 1 mile.
_____ feet = 2 miles

There are 12 items in 1 dozen.
_____ items = 3 dozen

There are 60 minutes in 1 hour.
_____ minutes = 24 hours

There are 1,760 yards in 1 mile.
_____ yards = 8 miles

There are 12 items in 1 dozen.
36 items = _____ dozen

There are 60 seconds in a minute.
3,600 seconds = _____ minutes

There are 2,000 pounds in 1 ton
10,000 pounds = _____ tons

There are 12 months in 1 year
132 months = _____ years

Subtracting Mixed Numbers with Uncommon Denominators

Lesson 24

"But I don't want them to go!" Ella's voice trembled with sadness. "I'll miss Danielle too much."

"I know, Honey. Goodbyes are so very hard. But we will see them again! Soon! I promise. Come out from under the bed. You need to say goodbye to your Auntie and Uncle and cousins. Come on, Honey. Out you come. Good girl. Come here, let me give you a hug," Maddie knelt in front of her small daughter and hugged her tightly. Goodbyes are so hard, she thought to herself. Nasty things.

"Goodbye, Uncle Justin. Goodbye, Aunt Kate!" Natty hugged first one and then the other. "I'll miss you!"

"We'll miss you, too, Natty. We'll miss all of you!" Kate said through her sniffling. She hugged each of her nephews and nieces and then started around again.

"Kate! We have to go, Honey! We have to be at the airport in an hour," Uncle Justin put his arm around his wife to try to steer her out the door. Ugh. Goodbyes are so hard, he thought to himself.

Maddie and all of the Stevens children stood at the door and waved goodbye to their family members. Sean Stevens was taking them to the airport.

The house seemed strangely quiet. Everyone was so sad!

"Come on guys. Let's try to cheer up! Should we play a game or something? What do you guys want to do? Games? Puzzles? Anything?" When no one answered Mom, she decided to take things into her own hands. "Ok, well, let's play this new game we got from Grandma and Grandpa for Christmas. It's a banking game! Look, it even has little checkbooks for each of the players. Doesn't this look fun?" she asked.

"Ok, I'll play," Charlie said sadly. "It won't be as much fun without Sean and Abby, but that's ok. We have to get use to them not being here..."

"Ok, I'll play, too," Charlotte sighed and sat next to Charlie. One by one the children pulled out chairs and sat down around the table.

"Let me start by reading the directions," Mom said and tried to smile brightly at her children. Even Ella had pulled up a chair. After looking at the box lid to see how old she had to be to play, she went to get her new coloring book and crayons.

"Ella is so smart, isn't she, Mom?" Natty asked, smiling at her little sister. "She knows how to check the age on a game. She saw that it says "8+"!"

"She is smart!" Mom agreed and smiled at Ella. The little girl's eyes were still red from crying, but she smiled back and opened her coloring book to work on the picture she had started the night before.

"Here you go, kids; these are the little checkbooks we use to play the game," Mom slid the checkbooks and pencils across the table to each of the older kids. "This is a really cool game! Look at this list of skills covered in the game! It says, 'Writing checks, balancing bank accounts, addition/subtraction of decimals, and even work with fractions and whole numbers with uncommon denominators!"

"Hey, that's what I was just teaching the girls the other day," Charlie said. "I'm going to like this game! I can already tell! And, what do you know! Math was the answer to our problems again!" When everyone looked at him questioningly, he continued, "This game of math helped cheer us up! Math saves the day again!" Everyone was giggling by now. Charlie and his math! What a silly boy!

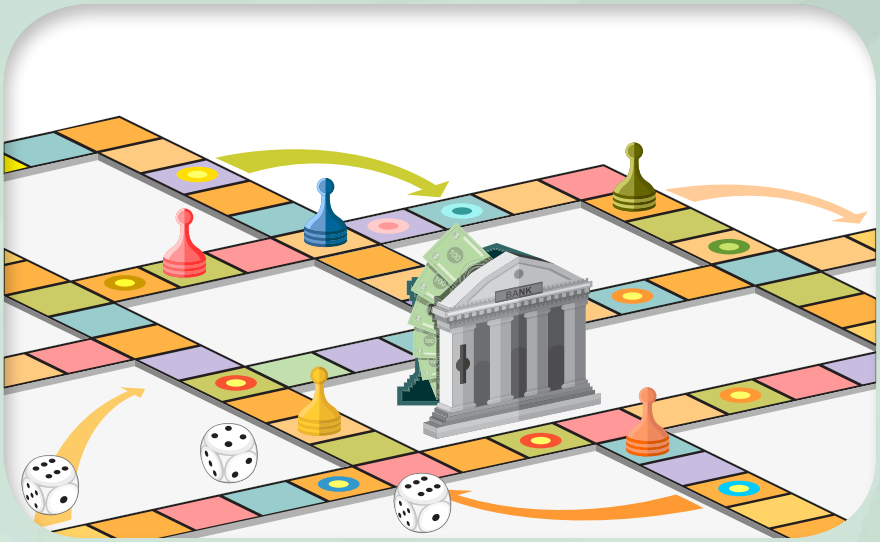
Later that evening, the family was gathered in the family room for their bedtime devotion time. Dad looked at Mom with a questioning look, and she nodded her head at him. The children looked from one parent to the other. Something was up!

"Kids, Mom and I have a surprise for you!" Dad said, leaning forward with excitement. "We are going to go on a three week adventure! We are going to go to a wilderness camp! Mom and I have been asked to come run a children's survival awareness camp for children six to twelve years old. We have decided to go, and you all are coming with us!"

Whoops of excitement went up around the circle. Only Ella sat quietly.

"Daddy, I'm not old enough to go," Ella said with a quivering lower lip. "I'm not old enough to do anything the other kids can. It's like the game we got for Christmas! I'm too little to do anything." Ella's head hung down, and a single tear slipped off of the end of her nose.

"Oh Honey! You most certainly ARE going with us!" Dad picked Ella up and placed her on his knee. "Look at me, Ella. You are part of this family, and you are going! In fact, I told the camp owners that all of my children were coming, or none of us were coming. That's what Mom and I decided. And that is what has happened. We are all going, Ella. Including you!"



Ella smiled through her tears and snuggled against her daddy's chest. She didn't mind being small after all. She was the only one of the children who could still snuggle up under her daddy's chin. And that was a good thing!

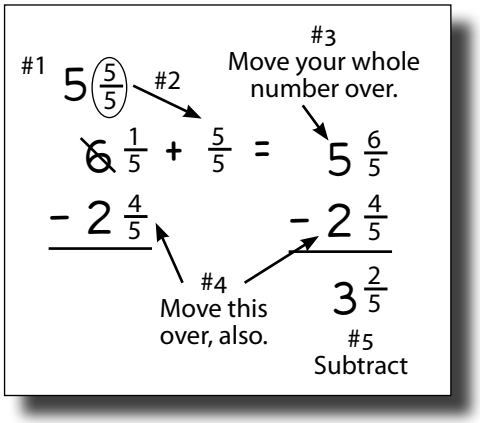
Name_____

Exercise 1

Day 116

New Concept!

We cannot subtract $2\frac{4}{5}$ from $6\frac{1}{5}$. Therefore, just like any other subtraction problem, we need to borrow. In this problem, we borrow from the 6. The 6 becomes $5\frac{5}{5}$. The five-fifths we borrowed from the 6 is added to the $\frac{1}{5}$, making our new mixed number $5\frac{6}{5}$. Now we can subtract.



Copywork.

We cannot subtract a mixed number problem when the top fraction is smaller than the bottom. Therefore, just like any other subtraction problem, we need to borrow. We borrow from the whole number, taking one "unit" from it and making it an equivalent fraction (with the bottom fraction). We then subtract, using the new mixed number as the minuend (top number).

Name_____

Exercise 1

Day 116

You try it now!

The first one is done for you. Reduce if necessary.

$4\frac{1}{3}$ $3\frac{4}{3}$
$-1\frac{2}{3}$ $1\frac{2}{3}$
$2\frac{2}{3}$

$5\frac{3}{5}$
$-2\frac{4}{5}$

$11\frac{1}{6}$
$-9\frac{5}{6}$

Mixed Review! Reduce and change improper fractions into mixed numbers.

$\frac{4}{9}$
$\frac{2}{3}$
$+\frac{5}{18}$

$\frac{3}{9}$
$\frac{5}{9}$
$+\frac{1}{18}$

11,050
$-$ 2,132

57,459
$-$ 29,091

Solve.

1,760 yards = _____ mile(s)

1 mile = _____ feet

3 miles = _____ yards

3 mile = _____ feet

108 items = _____ dozen

96 months = _____ years

Name_____

Exercise 2

Day 117

More practice with the concept! Reduce if necessary. Narrate to your teacher what you are doing.

$6\frac{3}{8} - 2\frac{5}{8}$ $\quad 5\frac{3}{7} - 4\frac{5}{7}$ $\quad 86\frac{1}{4} - 59\frac{3}{4}$ $\quad 10\frac{1}{9} - 3\frac{8}{9}$

Mixed Review!

Turn these improper fractions into mixed or whole numbers.

$\frac{42}{7}$ $\quad \frac{63}{8}$ $\quad \frac{25}{4}$

$\frac{17}{3}$ $\quad \frac{33}{11}$ $\quad \frac{75}{4}$

Reduce. Use your Reduce the Fraction! Chart if you need help.

$\frac{42}{7}$ $\quad \frac{63}{8}$ $\quad \frac{25}{4}$

$\frac{17}{3}$ $\quad \frac{33}{11}$ $\quad \frac{75}{4}$

Add.

$783 + 236 + 510$ $\quad 421 + 148 + 664$

Subtract.

$3,781 - 2,989$ $\quad 78 - 69$

Name_____

Exercise 3

Day 118

Adding onto the concept.

We have a mixed number problem with uncommon denominators.

#1 Find a common denominator.

#2 Since the top fraction is smaller than the bottom, we need to borrow from the whole number to make a bigger fraction.

$8\frac{1}{3} = 8\frac{2}{6} = 7\frac{8}{6}$

$-5\frac{5}{6} = 5\frac{5}{6} = 5\frac{5}{6}$

#3 Subtract.

$3\frac{3}{6} = 3\frac{1}{2}$

#4 Reduce if necessary.

Study the problem above and try these. The first one is done for you. Reduce if necessary.

$6\frac{1}{2} = 6\frac{2}{4} = 5\frac{6}{4}$

$-4\frac{3}{4} = 4\frac{3}{4} = 4\frac{3}{4}$

$1\frac{3}{4}$

$9\frac{3}{4}$

$-5\frac{7}{8}$

$4\frac{3}{16}$

$-2\frac{5}{8}$

$5\frac{1}{3}$

$-3\frac{4}{9}$

Mixed Review! Write as decimals. The first one is done for you.

$\frac{51}{100} = .51$ $\quad \frac{23}{100} =$ _____ $\quad \frac{1}{100} =$ _____

Copywork for review!

In decimal place value, the place to the right of the decimal is the tenths place.

_____

_____

The second place to the right of a decimal is the hundredths place.

_____

_____

Work with your Fraction, Decimal, and Percent Chart.

Show these fractions as decimals and percents on your chart.

☐ $\frac{4}{100}$ ☐ $\frac{78}{100}$ ☐ $\frac{92}{100}$ ☐ $\frac{28}{100}$ ☐ $\frac{16}{100}$

Name_____

Exercise 4 Day 119

Let's Review! Reduce if necessary. Narrate to your teacher each step.

$6\frac{1}{5} - 1\frac{4}{5}$

$9\frac{2}{7} - 1\frac{6}{7}$

$9\frac{3}{4} - 5\frac{7}{8}$

$391\frac{1}{6} - 187\frac{2}{3}$

$169\frac{8}{15} - 56\frac{4}{5}$

Write the following on a new index card and illustrate it.

We cannot subtract a mixed number problem when the top fraction is smaller than the bottom. Therefore, just like any other subtraction problem, we need to borrow. We borrow from the whole number, taking one "unit" from it and making it an equivalent fraction(with the bottom fraction). We then subtract, using the new mixed number as the minuend (top number).

Write these **numbers** in words.

301,568

_____

34,560

_____

2,001

_____

$46.56

_____

$782.10

_____

Name_____

Exercise 5 Day 120

Sudoku!

Take your time — and see if it is getting easier to do these puzzles! The next time you are at the library or a store, look and see what kinds of Sudoku puzzles are available. If you want to know more, you can research the history of the puzzles!

5	6			8	7			4
		4				6		7
7			5	4				9
			8	9		3	1	
	5				1	2	9	
1	3	9			5			
	9	1	4	6			7	2
	2	5	7					1
		7					6	

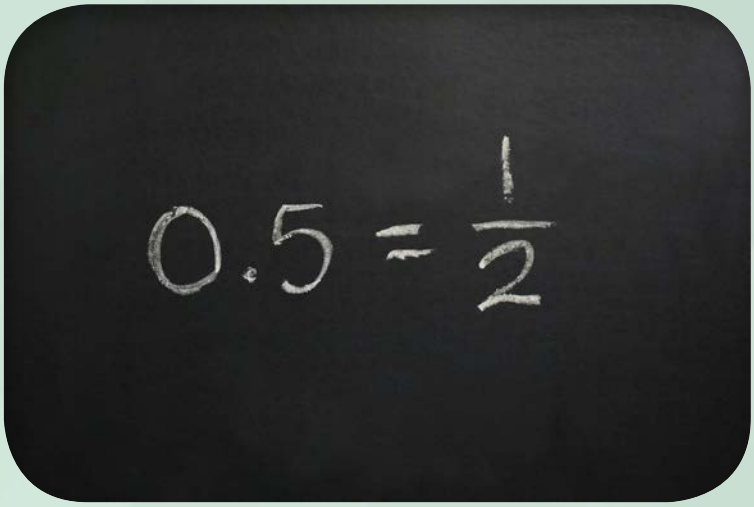
Teacher

Have your student(s) work with any concepts he or she is having trouble with.

Review of Multiplying and Dividing Decimals

Lesson 36

- Multiply as usual. Next, starting at the right, count the total number of decimal places in both factors and count off that many decimal places in the product.
- When we multiply decimals, we sometimes need to add a zero to the product to make enough decimal places. Count from the right the number of decimal places needed, but there were not enough places. This is where we added the zero to the left side of the product.
- When we multiply money (with decimals), we use the same rules. When we find our product, however, we need to round to the hundredths place.
- When we divide decimals, we have to completely remove the decimal from the divisor.
- In decimal place value, the place to the right of the decimal is the tenths place.



Name_____

Exercise 1 Day 176

Review Time! Copywork:

Multiplying decimals...
We multiply as usual. Next, starting at the right, count the total number of decimal places in both factors and count off that many decimal places in the product.

_____

_____

_____

_____

Solve.

.9	7.25	3.42	.642
x .4	x .3	x .88	x .11

Write, in your own words, what you have learned about multiplying decimals.

_____

_____

_____

Name_____

Exercise 2

Day 177

Review Time!

When we multiply decimals, we sometimes need to add a zero to the product to make enough decimal places. Like this.

As you can see, we counted from the right the number of decimal places needed, but there were not enough places. This is where we added the zero to the left side of the product.

.12 (2)
x .13 (2)
36
+ 12
.0156 (4)

We need to add a zero to make enough decimal places.

.23	.31	.43	.25
x .15	x .17	x .16	x .21

.5	.12	17.1	14.2
x .3	x .6	x 6	x .8

Write what you have learned about adding zero to the product when multiplying decimals.

_____

_____

_____

Name_____

Exercise 3 Day 178

Review Time! Copywork:

When we multiply money (with decimals), we use the same rules. When we find our product, however, we need to round to the hundredths place.

_____

_____

_____

$ 3.85	$ 7.13	$ 2.11	$ 2.38
x .43	x .18	x .80	x .27

Write what you have learned about multiplying money.

_____

_____

_____

Name_____

Exercise 4 Day 179

Review Time! Copywork:

When we divide decimals, we have to completely remove the decimal from the divisor.

_____

_____

_____

The third place to the right of the decimal is the thousandths place.

_____

_____

Divide and check.

$.9\overline{)18.9}$ $.4\overline{)13.6}$ $.5\overline{)20.5}$

Name_____

Exercise 5 Day 180

The Double Sudoku Challenge!

Here is a variation on the simple Sudoku puzzles you have been completing. This is a Double Sudoku – which just means there are two Sudoku puzzles in one overlapped puzzle. We have outlined one puzzle in blue, and the other in green.

When solving this kind of Sudoku, the same rules that you have learned still apply. You just have to take into account both puzzles when finding the solutions for each. The most challenge portion of the puzzle will be the four 3 x 3 squares in the overlapped area (it is the shaded portion). Hint – use the numbers outside of the overlapped area as clues to find the missing numbers for each Sudoku!

When solved, both puzzles will be complete with no repeated numbers in the rows, columns, or 3 x 3 squares within the 9 x 9 green and blue puzzles. As always, if you are not sure about what to do, talk to your teacher and ask for help.

4	5	6	8					1			
3	8	2				4	7				
9	7	1	3		2	5	6	8			
5		3	9	8	7			6	5		4
				3	1		5			2	
6		7		2		9				7	
	2		7				3		4		2
	3			1		6	9				
8		9			3	1	4	7	6		8
			1			4		9	2	8	3
				6	2				9	4	5
			3		9	5		8	7	6	1