The CHARLOTTE MASON

ELEMENTARY ARITHMETIC

SERIES

SAMPLE

Richele R. Baburina

BOOK 2

The Charlotte Mason Elementary Arithmetic Series

Book 2

by Richele Baburina

Special thanks to Kristen Orr for her help in writing the sums.

The Charlotte Mason Elementary Arithmetic Series, Book 2
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"The Principality of *Mathematics* is a mountainous land, but the air is very fine and health-giving, though some people find it too rare for their breathing. It differs from most mountainous countries in this, that you cannot lose your way, and that every step taken is on firm ground. People who seek their work or play in this principality find themselves braced by effort and satisfied with truth."

(*Ourselves*, Book 1, p. 38)

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Introduction

Charlotte Mason desired that children not merely have a mechanical ability to work arithmetic problems but that they form a relationship with numbers. In fact, Irene Stephens, Ambleside's lecturer in mathematics—who would later become the director of Charlotte Mason's Parents' Union School—tells us that Miss Mason referred to arithmetic as "Number" in these initial years because she "wanted the children to get a real sense of number; some vision of its innate power and beauty far beyond the sum of the moment" (*Parents' Review,* Vol. XL, 1929, "Number: A Figure and a Step Onward," p. 35).

Charlotte Mason called education an *atmosphere*, a *discipline*, and a *life* and, likewise, you will see a number of methods distinct to her principles and applied philosophy of education throughout. Some to keep in mind:

Atmosphere. Lessons are short, 20 minutes in all, which includes a scheduled five minutes of rapid oral work. The teaching is carefully graduated with the child answering small word problems within his understanding while also providing mental effort. Lessons remain mainly oral, and children work out the tables with the use of concrete objects — what we today refer to as *manipulatives*. These objects are used to help the child understand the *why* of the work done. As the facts are proven, when a level of comfort is reached, and before boredom sets in, the everyday objects are put away.

Discipline. The methods employed in the arithmetic lessons are the means by which good habits are thoughtfully cultivated in the child. Charlotte Mason tells us that if we let the "arithmetic lesson be to the child a daily exercise in clear thinking and rapid, careful execution," the child's "mental growth will be as obvious as the sprouting of seedlings in the spring" (*Home Education,* p. 261). Both the variety of the questions and the liveliness with which they are given help develop a child's power of imagination and readiness and attention to his work. Though lessons are largely oral, the opportunity for more writing in Book 2 means neatness and careful execution should be adhered to. We never want the mechanics of writing to outweigh the ideas being presented in arithmetic, so the amount of written work assigned is largely dependent upon the child's ability. Having your child speak aloud as he solves larger problems and

requiring fully worded answers during table work is another means used in training good habits. (For more on habit training and mathematics see the handbook *Mathematics: An Instrument of Living Teaching* by Richele Baburina.)

Life. The unfolding of ideas in a child's mind is a hallmark of a Charlotte Mason education. In this book, as the language of mathematics is presented to the child, a number of ideas will be met with; such as subtraction as the complement of addition, multiplication as the extension of addition, and the relationship between division and subtraction, to name a few. Simple, everyday objects serve as tools to see the rationale of the tables and, since the objects don't require too much teaching, never replace the importance of the idea being presented. The lessons are straightforward—without rule after rule or lengthy explanations—in order to allow the child to think and discover for himself.

As you guide your child through these lessons, we hope he experiences the beauty and enjoyment to be found in Number as the realm of mathematics continues to open to him.

Arithmetic Concepts in Book 2

- The idea and operation of addition
- The idea and operation of subtraction
- Addition and subtraction tables up to 20 (10 + 10)
- Addition and subtraction with money
- Addition and subtraction in interesting story problems
- Addition and subtraction with pure number
- Longer sums with three or four sets of figures
- Addition and subtraction of numbers within 1000
- The idea and operation of multiplication
- Simple multiplication to show the idea of "times"
- The symbol "x"
- Construction of multiplication tables up to 6 x 10
- Mastery of multiplication tables up to 6 x 10
- Multiplication by 10s, 100s, 1000s
- The idea and operation of division
- The symbol "÷"
- Multiplication and division with money
- Multiplication and division in interesting story problems
- Multiplication with pure number
- Short division with pure number
- Numeration and Notation of numbers up to 1000

Overview of Lessons

In Book 1, the student thoroughly investigated numbers up to 100 while establishing a solid foundation in place value. In this second book, he will receive a formal introduction to the four rules (addition, subtraction, multiplication, division) and tables; master addition and subtraction tables up to 20 (10 + 10) and multiplication tables up to 6 x 10; embark on division; and learn to read, write, and work with numbers up to 1,000.

Tables

Tables must be learned, but Charlotte Mason's approach helps the teacher prepare the child for this task in the best way possible. The tables are committed to memory in a variety of ways through work in the concrete, which progresses to imagined objects, then advances to pure number. The idea of subtraction as the complement of addition is reinforced as subtraction tables are worked out alongside addition tables. A child further experiences a natural overlap with multiplication as it is introduced as repeated addition through simple and interesting problems. Charlotte Mason's multiplication tables are distinctive, and their construction—either with objects or written—allows a child to grasp their rationale, discover patterns, and take division as a normal counterpart when ascertaining how many times a certain number is contained in another.

Tables built in the concrete by your child may easily be saved for the next day's work if constructed on a tray. A sheet of felt laid on the tray makes a good cushion under the items to prevent their moving or sliding between lessons. If you are not able to save the table, you may quickly build it in advance of the lesson time in order to save time on the following day.

If your child has advanced past the need to use a concrete table, by all means put the objects away and continue the oral questions without the aid of the manipulative; but feel the freedom to get them back out if need be. If you are working with an older child who needs to solidify his knowledge of the tables, and he has established an ease with handwriting, he may write the tables in his math notebook instead of building them with objects.

Mental Arithmetic

A distinguishing characteristic of Charlotte Mason Arithmetic is the five minutes of scheduled mental arithmetic each day. Since arithmetic lessons are mainly oral and require mental work, this activity is somewhat set apart by giving questions in a rapid, lively fashion to fix attention while promoting a child's promptness and concentration. In Book 2, the Mental Arithmetic time is most often taken with rapid table work but also includes questions that may involve more than one operation as well as numeration questions. Many of the questions given in the sections *Table Work* and *Review* work well for this time of Mental Arithmetic. Additional questions are found in the back of this book. Allow your child to make up questions of his own, or if you have multiple students, they may take turns posing questions to one another. This activity need not be relegated to the schoolroom alone and can easily take place out of doors, in the car, or around the table.

When to Advance

No book can give the exact number of equations needed for each individual child to solidify his understanding. As you work with your child, daily drawing out new power, you will want to progress carefully enough that he has attained a level of comfort before moving on. You should also feel the freedom to not use every question given if it is not necessary. The questions are written in such a way as to allow you to easily change numbers, names, and objects that relate to your own child's life and interests. A brief look through the lesson ahead of time will aid your ability to keep the lesson engaging by seeing where you are headed. Be sure to follow the lesson with something that uses a different part of the brain or body, such as singing, handwriting, handicraft, dance, or drill.

Pacing

While the concepts found in Book 2 generally take place in a child's second year of formal education, you will want to progress at a pace that ensures each step is taken on solid ground. The charts on the next page are given as an example and are merely a loose planning guide for your convenience. You may find that your child moves a bit more quickly through certain sections and a bit more slowly through others. That is

perfectly normal. Consistency in daily arithmetic lessons is an important key to progress, but, as always, it is the chart that should be adjusted to your child's pace rather than trying to make your child fit the charts.

Term 1												
Suggested Weeks	1	2	3	4	5	6	7	8	9	10	11	12
Review of Previous Year's Work	■	■	■									
Addition and Subtraction Tables				■	■	■	■	■	■	■	■	
Term Exam												■

Term 2												
Suggested Weeks	13	14	15	16	17	18	19	20	21	22	23	24
Addition with Larger Numbers	■	■	■	■	■							
Subtraction with Larger Numbers						■	■	■	■			
Multiplication										■	■	
Term Exam												■

Term 3												
Suggested Weeks	25	26	27	28	29	30	31	32	33	34	35	36
Multiplication (cont'd).	■	■	■	■	■	■	■					
Division								■	■	■		
Review of Year's Work											■	
Term Exam												■

Exams

Three end-of-term exams are provided in the back of this book. Those oral exams are designed for you to customize to reflect where your child is in the lessons. See page 315 for details.

Supplies Needed

- Personal chalkboard, dry-erase board, or the like together with its appropriate writing instrument. For brevity, it will be referred to as *the slate* in the lessons. Available from Simply Charlotte Mason.
- Variety of everyday objects: beans, pennies, simple counters, candy-coated chocolates, beads, buttons, popcorn kernels, etc.
- Objects bundled in 10s from the previous year's work or a variety of objects that can either be bundled or threaded in groups of 10s. Beads or buttons can be threaded with string or chenille stems; craft sticks, matchsticks, or golf pencils are easily bundled with elastic bands.
- Coin purse with 50 pennies, 5 nickels, 20 dimes, and 4 quarters; plus 100 pennies for building tables.
- 20 one-dollar bills, either real or play.
- Gridded math notebook (sized according to child's handwriting: ¾", ½", or ¼").
- Pencil.
- Timer to be set for 20-minute lessons (15 minutes for the main portion and 5 minutes for mental arithmetic) or a clock to keep an eye on the time.

Optional

- The parent reference book, *Mathematics: An Instrument for Living Teaching,* explains Charlotte Mason's unique approach in mathematics more fully, from an introduction to numbers through geometry.
- The video series, *Charlotte Mason's Living Math: A Guided Journey,* demonstrates the methods used in these lessons.
- It is good to have on hand a collection of cards with clearly printed number sentences for convenience. The cards should include both a combination of numbers already studied as well as the various compositions of the number currently being taken. Before the

lesson begins, pull out an applicable card or two. This way, if you unexpectedly need to attend to something else for a few minutes, your child may continue working on his own without interruption. He may complete the number sentences, with manipulatives if needed, writing the answers on his slate. Preprinted Number Sentence Cards are provided in The Charlotte Mason Elementary Arithmetic Series, Kit 2.

- A kit is available from Simply Charlotte Mason for Book 2, containing many of the items needed for these lessons.

Review from Book 1

Review at the beginning of a new school year is normal and, oftentimes, necessary. So remain at ease if it takes a bit of time for your child to do exercises he accomplished with little effort at the end of the previous school year. In fact, J. S. Mills tells us in a *Parents' Review* article regarding school vacation that he is "not at all afraid of retrogression," asserting that the qualities of a child's mind are such that a break of eight weeks is "sufficient for him to forget only very superficially the lessons of a term" and much prefers children to use the break to develop their senses, observation, and experience of life (*Parents' Review,* Vol. IV, 1893/94, p. 510).

You will find in this section a review of concepts covered in Book 1 taught in a Charlotte Mason way. Use it to refresh your student's memory of the ideas he discovered last year.

Tip: If you are continuing straight from Book 1 without a long break, this review section may be skipped.

You may also use this section as a placement guide to help you determine where your student should start in The Charlotte Mason Elementary Arithmetic Series. If your child has never worked with these concepts—or you believe he needs additional review—please see Book 1 for completely guided lessons. Book 2 gives a formal introduction to some but not all of the ideas explored in Book 1, along with a number of new concepts. See the section *Arithmetic Concepts in Book 2* on page 9 for details.

Tip: When determining placement, try to ascertain if your child has an understanding of the ideas contained in each section or merely possesses a mechanical ability to work the problems. One way to tell is whether his mathematical thinking is isolated to the arithmetic lesson only or is evident in his daily life.

The Symbol for the Idea *(instructions to the parent)*

1. Have your child point out *three* of something in the room, e.g., three apples, three books, three cups, three pencils, etc.

2. Have your child write the number *3* on his slate, getting it as neat as possible.

3. Repeat the two steps above with a few more numbers under ten (such as 6, 2, 5, 1, and 7), having your child first find the appropriate number of objects and then write the number as neatly as possible on his slate.

Simple Sums *(to be given orally with or without manipulatives)*

Objects suggested: pennies

1. Abby bought a gum ball for 2¢ and a candy for 3¢. How much did she give for both?

Tip: Be sure to require fully worded answers; i.e., "2 and 3 are 5" or "2 plus 3 equals 5" for the answer above.

2. Hudson has 4¢ in his hand and 4¢ in his pocket. How much has he in all?

3. If you had 9¢ and lost 5¢, how much have you left?

4. Lyla has 5¢ and Macy has 5¢. How much have they altogether?

5. Gabe had 6 pennies and Luke gave him 3 more pennies. How many pennies does Gabe have now?

6. Silas dug 4 potatoes and his father dug 6 more. How many potatoes do they have altogether?

7. 3 geese were on a pond, then 2 more geese joined them. How many geese in all?

8. Jonah had 3 red balloons and 3 blue balloons. How many balloons had he in all?

9. There were 9 bunnies in a field when 2 hopped away. How many bunnies remained?

10. Annalise wants 8 flowers for her bouquet. She has picked 5. How many more does she need?
    - Do you remember how to write this equation using the signs you have learned? *(Child writes on slate either 5 + 3 = 8 or 8 – 5 = 3. Either is correct.)*
    - And how is it read?

Answers

1. 5¢, because 2 + 3 = 5

Tip: Be sure to require fully worded answers.

2. 8¢
3. 4¢
4. 10¢
5. 9 pennies
6. 10 potatoes
7. 5 geese
8. 6 balloons
9. 7 bunnies
10. 3 flowers; 5 + 3 = 8 or 8 – 5 = 3

Counting

1. Count out 10 pennies. Now count them forward and back.

2. Can you arrange them in groups of two? Now count them by 2s.

3. Now arrange them in groups of five. Can you count them by 5s?

Exchanging Coins *(to be given orally with coins)*

Objects used: coin bag with quarters, dimes, nickels, and pennies

Tip: Have your student always keep dimes on his left and pennies on his right.

1. Count out 12 pennies. If you don't want to carry so many coins, what can you do? How many pennies have you left?

2. If you have 5 pennies and 1 nickel, what coin can you exchange them for?

3. You are a shopkeeper and must give me 23¢ in change. If I want as few coins as possible, what might you give me?

4. How many nickels can you change for ten pennies?

5. How many nickels can you change for a dime?

6. If we went to the store and you wanted to buy a candy that cost 25¢, which one coin could you give the cashier?

7. What other ways can you make 25¢?

8. Count out $1.00 from your coin bag using dimes. Count by 10s to 100.

9. You are a shopkeeper. I purchase a piece of gum from you for 25¢ and give you 3 dimes, or 30¢, in payment. How much change should you give me in return?

10. Elinor purchased a bookmark for 35¢. If she gave the shopkeeper 40¢, how much should she receive in change? And how would you write this equation? *(Child writes on slate.)*

11. If you have 2 quarters, how much have you?

12. If you changed your 50¢ into dimes, how many dimes would you have?

13. Aviya purchased a lemon for 39¢. He gave the shopkeeper 50¢. How much change should he receive in return?

14. You need 60¢ to purchase a colored pencil. You have 55¢. How much more do you need?

15. Can you show me two different ways to make 75¢?

16. Wyatt purchased an ice cream for 68¢. If he gave the shopkeeper 75¢, how much should he receive in change?

17. If you have 75¢, how many 10¢ stickers can you buy?

18. Aurav bought a pencil for 75¢ and an eraser for 25¢. How much did he give for both?

19. Show me 93¢ in dimes and pennies.

20. If you want to exchange pennies for a $1 bill, how many pennies do you need? And if you want to exchange your $1 bill for dimes, how many dimes will you receive?

Answers

1. Exchange 10 pennies for 1 dime; 2 pennies left

Tip: Be sure to require fully worded answers.

2. 1 dime
3. 2 dimes and 3 pennies
4. 2 nickels
5. 2 nickels
6. A quarter, or 25¢ piece
7. 25 pennies, 5 nickels, or 2 dimes and a nickel (or any other number of combinations the child is able to give)
8. 10 dimes counted 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
9. 5¢ (in either a nickel or 5 pennies), because 30 – 25 = 5
10. 5¢; 35 + 5 = 40 or 40 – 35 = 5

11. 50¢
12. 5 dimes
13. 11¢, because 50 – 39 = 11 or 39 + 11 = 50
14. 5¢, because 55 + 5 = 60 or 60 – 55 = 5
15. 3 quarters, 7 dimes and a nickel (or any other various combinations the child is able to make correctly)
16. 7¢, because 75 – 68 = 7 or 68 + 7 = 75
17. 7 stickers
18. $1.00, because 75 + 25 = 100
19. 9 dimes and 3 pennies
20. 100 pennies; 10 dimes

Numeration and Notation *(instructions to the parent)*

Objects used: coins

1. Place 46¢ on the table using dimes and pennies. Be sure to keep proper place value by putting 4 dimes on the student's left and 6 pennies on the student's right. Ask: How much money do we have here?

2. Ask: How many units have we?

3. Next ask: How many tens have we?

4. Write *46* on the slate and ask something like: In numbers such as *46*, which figure represents units and which represents tens?

5. Take away the pennies and place another dime in line with the other 4 dimes to make 5 dimes on the student's left. Ask: Now how many tens have we? And how many units?

6. Write the following numbers in a column on either the slate or on grid paper and ask your child to read them: *4, 12, 25, 63, 82, 100.*

7. Now point to each number and ask how many units, tens, or hundreds in each.

8. Ask: In the number *63,* how do we know it is read "sixty-three" and not "thirty-six"?

9. Ask your child to write the following numbers in a column either on the slate or in his math notebook, being sure to keep proper place value, while you dictate: *2, 38, 17, 64, 29, 91, 100.*

Answers

1. 46¢
2. 6 units
3. 4 tens
4. The number to the far right, *6,* represents units and the number to the left of it, *4,* shows tens
5. 5 tens and 0 units
6. Four, twelve, twenty-five, sixty-three, eighty-two, one hundred
7. 4 units; 1 ten and 2 units; 2 tens and 5 units; 6 tens and 3 units; 8 tens and 2 units; 1 hundred, no tens, and no units
8. The *3* is in the units place and the *6* is in the tens place
9. Written in a column: *2, 38, 17, 64, 29, 91, 100*

Addition and Subtraction Tables

Addition and subtraction tables will simultaneously be worked out using concrete objects, with the idea being given that subtraction is the counterpart of addition. Since subtraction is usually the more difficult operation for a child, please be sure to advance as slowly as necessary for him to feel he is on solid ground. The learning of each table follows the same rhythm, laid out here as seven separate steps, with a review of previous tables learned.

It is important to note that children advance at different rates. If your child needs more sums in any given step, the samples provided can easily be changed to offer more practice. If you find your child is already thinking in numbers and has become bored or worried by the manipulatives, do not feel tied to them. Simply have him draw the table on his slate or write it in his math notebook for use during exercises, always knowing that concrete objects can be brought back out if needed.

Tip: The term sum *in Charlotte Mason's day referred to any mathematical problem. It will be used in that context in these printed lessons to the teacher. The modern term* equation *should be used when speaking to the student.*

To view demonstrations, watch the session, "Addition and Subtraction Tables," of the video series *Charlotte Mason's Living Math: A Guided Journey.*

Addition and Subtraction Table for 1

Step 1: Assemble a table and speak it through.

(instructions to the parent)

Objects used: pennies

1. Starting with the number 1, have your child assemble an addition table using his pennies. See sample diagram below. Place 1 penny with 0 pennies next to it. Under that, place 1 penny with 1 penny next to it. Then 1 penny with 2 pennies next to it, 1 penny with 3 pennies next to it, and so on up to 1 penny with 10 pennies next to it. Have your child say the table aloud as he arranges the pennies: 1 penny + 0 pennies = 1 penny; 1 penny + 1 penny = 2 pennies; 1 penny + 2 pennies = 3 pennies, etc.

```
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Tip: Tables can be made on a piece of felt or on a tray in order to preserve work for the next day or, once the child has made the table on his own and worked with it for a lesson, it can be put away and, prior to the next day's work, you can quickly recreate the table in advance of the lesson to save time.

Tip: You could also allow the student to create the tables using dots or strokes on graph paper or on a gridded dry erase board, such as the one available through Simply Charlotte Mason. This option works well if your child balks at the idea of using concrete objects, if you are working with an older child to solidify his knowledge of the tables, or if concrete objects are no longer necessary.

Step 2: Pose simple addition sums using the objects in the table.

Tip: Skip around on the table; don't just go in order from top to bottom.

1. 1 penny + 3 pennies =
2. 1 penny + 7 pennies =
3. 1 penny + 1 penny =
4. 1 penny + 2 pennies =
5. 1 penny + 8 pennies =
6. 1 penny + 0 pennies =
7. 1 penny + 4 pennies =
8. 1 penny + 9 pennies =
9. 1 penny + 6 pennies =
10. 1 penny + 5 pennies =

Answers

1. 4 pennies

Tip: Always encourage a full answer; e.g., 1 penny and 3 pennies make 4 pennies or 1 penny plus 3 pennies equal 4 pennies.

2. 8 pennies
3. 2 pennies
4. 3 pennies
5. 9 pennies
6. 1 penny
7. 5 pennies

8. 10 pennies
9. 7 pennies
10. 6 pennies

Tip: Remember to keep lessons only 15 minutes long, then spend 5 minutes in review. Next time, pick up where you left off.

Step 3: Progress to addition sums with imaginary objects.

Tip: Incorporating a variety of imaginary objects will help your child see that the addition facts are general and not tied to the specific manipulative we are using at the moment.

Tip: Remember to work at your child's pace. If he needs to, let him use the pennies to obtain the answer.

1. 1 kitten + 2 kittens = how many kittens?
2. 1 puppy + 6 puppies = how many puppies?
3. 1 pencil + 9 pencils = how many pencils?
4. 1 boat + 4 boats = how many boats?
5. 1 rabbit + 1 rabbit = how many rabbits?
6. 1 apple + 10 apples = how many apples?
7. 1 gum ball + 5 gum balls = how many gum balls?
8. 1 snowball + 7 snowballs = how many snowballs?
9. 1 snowman + 8 snowmen = how many snowmen?
10. 1 lamb + 3 lambs = how many lambs?

Answers

1. 3 kittens

Tip: Always encourage a full answer; e.g., 1 kitten and 2 kittens make 3 kittens or 1 kitten plus 2 kittens equal 3 kittens or 1 and 2 make 3.

2. 7 puppies
3. 10 pencils
4. 5 boats
5. 2 rabbits
6. 11 apples
7. 6 gum balls
8. 8 snowballs
9. 9 snowmen
10. 4 lambs

Tip: When the answers are coming readily to the sums with imaginary objects, your child may begin simple sums with pure numbers.

Step 4: Work with addition sums using pure number.

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

9. 1 + 8 =

10. 1 + 1 =

Answers

1. 5

Tip: Be sure to require fully worded answers: 1 + 4 = 5.

2. 8
3. 4
4. 1
5. 6
6. 3
7. 10
8. 11
9. 9
10. 2

Step 5: Incorporate the subtraction table as addition continues.

Go over each line in the addition table you have built and have your child work out both the addition and the complementary subtraction facts. To begin with, word the subtraction questions in this way: You have 1 penny but want two pennies. How many more must you get? This kind of wording reinforces the idea of subtraction as the complement of addition and may be easier for the student to grasp. You may eventually proceed to word the subtraction questions as, 3 pennies take away 1 penny leaves how many pennies?

Tip: Feel free to mix up the order of the problems as your child becomes more comfortable in the work.

1. 1 penny added to 1 penny make how many pennies?

2. You have 1 penny but you want 2 pennies. How many more must you get?

Addition of Double Digits with Carrying

Sample *(instructions to the parent)*

Objects used: coins

Read aloud the equation below.

```
   4 dimes and 3 pennies
+  2 dimes and 8 pennies
```

Write the equation on the slate or grid paper.

```
  43
+ 28
```

Have your student work the equation with coins, using dimes and pennies. It will be helpful to have him speak the process aloud as he works and exchanges pennies for dimes. (For example, 3 pennies plus 8 pennies are 11 pennies, which make 1 dime and 1 penny. 1 dime plus 4 dimes plus 2 dimes make 7 dimes.)

```
   1 dime
   4 dimes and 3 pennies
+  2 dimes and 8 pennies
   7 dimes       1 penny
```

Tip: Encourage the student to get in the habit of starting with the pennies, or units.

Now show the student how to notate that process in writing. If desired, see if your child can tell you how it is done. If not, simply show and tell him, and he can talk through the next problem. (For example, 3 pennies plus 8 pennies are 11 pennies, which make 1 dime and 1 penny. The 1 penny is written in the units place and the 1 dime is written in the tens

place. 1 dime plus 4 dimes plus 2 dimes are 7 dimes. The 7 is written in the tens place.)

$$\begin{array}{r} {\scriptstyle 1} \\ 43 \\ +\,28 \\ \hline 71 \end{array}$$

Sums

1. 5 dimes and 4 pennies
   + 2 dimes and 6 pennies

2. 1 dime and 8 pennies
   + 3 dimes and 2 pennies

3. 4 dimes and 5 pennies
   + 3 dimes and 7 pennies

4. 6 dimes and 4 pennies
   + 2 dimes and 9 pennies

5. 7 dimes and 9 pennies
   + 2 pennies

6. 2 dimes and 8 pennies
   + 1 dime and 3 pennies

7. 3 dimes and 6 pennies
   + 3 dimes and 7 pennies

8. 2 dimes and 8 pennies
   + 6 dimes and 4 pennies

Tip: Have your student write out one or two of the following equations in his math notebook, either as it is solved or after it is solved.

9. 2 dimes and 5 pennies
   + 3 dimes and 6 pennies

10. 2 dimes and 7 pennies
    + 5 dimes and 4 pennies

9. Written:

$$\begin{array}{r} {\scriptstyle 1} \\ 25 \\ +\;36 \\ \hline 61 \end{array}$$

10. Written:

$$\begin{array}{r} {\scriptstyle 1} \\ 27 \\ +\;54 \\ \hline 81 \end{array}$$

Answers

1. 8 dimes and 0 pennies, or 80¢

Tip: Be sure to require the student to speak aloud as he solves the equations.

2. 5 dimes and 0 pennies, or 50¢
3. 8 dimes and 2 pennies, or 82¢
4. 9 dimes and 3 pennies, or 93¢
5. 8 dimes and 1 penny, or 81¢
6. 4 dimes and 1 penny, or 41¢
7. 7 dimes and 3 pennies, or 73¢
8. 9 dimes and 2 pennies, or 92¢
9. 6 dimes and 1 penny, or 61¢
10. 8 dimes and 1 penny, or 81¢

Mixed Practice with and without Carrying

Tip: Keep lessons to 15 minutes of work on the newest concept and 5 minutes of review at the end, making each day's math time 20 minutes total.

Sums

Objects used: coins

Tip: Use as many of these problems as needed to solidify understanding.

1. 1 dime and 5 pennies
   + 4 dimes and 3 pennies

2. 3 dimes and 2 pennies
   + 4 dimes and 7 pennies

Tip: Help your student get in the habit of starting with the pennies, or units.

3. 4 dimes and 6 pennies
   + 3 dimes and 6 pennies

4. 2 dimes and 8 pennies
   + 2 dimes and 2 pennies

5. 3 dimes and 7 pennies
   + 2 dimes and 1 penny

6. 1 dime and 5 pennies
   + 3 dimes and 5 pennies

7. 4 dimes and 6 pennies
   + 1 dime and 3 pennies

8. 5 dimes and 9 pennies
   + 2 pennies

Tip: You may have your student write one or two of the following sums in his math notebook if work is going exceptionally well.

9. 2 dimes and 8 pennies
+ 1 dime and 4 pennies

10. 5 dimes and 7 pennies
+ 2 dimes and 1 penny

9. Written:

$$\begin{array}{r} {\scriptstyle 1} \\ 28 \\ +\ 14 \\ \hline 42 \end{array}$$

10. Written:

$$\begin{array}{r} 57 \\ +\ 21 \\ \hline 78 \end{array}$$

Answers

1. 5 dimes and 8 pennies, or 58¢

Tip: Encourage your child to speak the process aloud as he solves the equations.

2. 7 dimes and 9 pennies, or 79¢
3. 8 dimes and 2 pennies, or 82¢
4. 5 dimes and 0 pennies, or 50¢
5. 5 dimes and 8 pennies, or 58¢
6. 5 dimes and 0 pennies, or 50¢
7. 5 dimes and 9 pennies, or 59¢
8. 6 dimes and 1 penny, or 61¢
9. 4 dimes and 2 pennies, or 42¢
10. 7 dimes and 8 pennies, or 78¢

Review

1. Dakota is 11 and her brother is 6. How many years older is Dakota than her brother?

2. Levi must pick 12 lemons. He has picked 8. How many more must he pick?

3. There are 5 eggs in a nesting box but 2 broke. How many eggs remain whole?

multiplication sign, then have him read the entire multiplication sentence.

1. If 4 children had 5¢ each, how much had they altogether?

2. Gum balls cost 2¢. How much must you pay for 6 gum balls?

3. 3 girls have 3 ribbons each. How many ribbons have they altogether?

4. 4 children collected 4 feathers each. How many feathers do they have altogether?

5. A florist puts 6 flowers in every bouquet. How many total flowers are in 3 bouquets?

6. 4 nests each held 3 eggs. How many total eggs are there?

Answers

Tip: Your child may word these in different ways. As long as the wording and answer are correct, it does not have to specifically match the wording below.

1. 5 × 4 = 20; i.e., 5¢ taken 4 times equals 20¢
2. 2 × 6 = 12; i.e., 2¢ times 6 equals 12¢
3. 3 × 3 = 9; i.e., 3 multiplied by 3 equals 9 ribbons
4. 4 × 4 = 16; i.e., 4 times 4 equals 16 feathers
5. 6 × 3 = 18; i.e., 6 multiplied by 3 equals 18 flowers
6. 4 × 3 = 12; i.e., 4 times 3 equals 12 eggs

Multiplication Table for 2

Since we are working with the idea of what times indicates, any number taken just one time, or once, remains the same. This idea is found in each table, both constructed and written, as well as in the subsequent table work.

Tip: Keep lessons to 15 minutes of work on the newest concept and 5 minutes of review at the end, making each day's math time 20 minutes total.

Step 1: Construct the table. *(instructions to the parent)*

Objects used: coins

To solidify understanding, you and your child will make a simple multiplication table using concrete objects in order to see its rationale before creating written tables.

Tip: It is up to you whether to include this concrete activity as future tables are learned. Some students may need to see the concept only once; others may benefit from repeating the activity for each table studied.

Say: Let's take our coins and make a multiplication table for 2. We'll make 10 rows of coins with 2 coins in each row. Let your student read down the column of coins and answer as you guide him:

••
•• *2 and 2 are (4),*
•• *and 2 are (6),*
•• *and 2 are (8),*
•• *and 2 are (10),*
•• *and 2 are (12),*
•• *and 2 are (14),*
•• *and 2 are (16),*
•• *and 2 are (18),*
•• *and 2 are (20).*

Ask questions that cover the lines of the table out of order.

1. How many 2s are in 10? (5) Remark: So it is right to say 2 x 5 = 10.

2. If a toy costs 2¢ each, how much would 6 toys cost? (12¢)

3. 2 x 4 = (8)

4. 2 x 3 = (6)

5. 2 x 7 = (14)

6. How many 2s in 14? (7)

7. How many 2s in 6? (3)

8. How many 2s in 18? (9)

9. 2 taken 8 times? (16)

10. 2 taken 2 times? (4)

Now you are going to help your child construct a written multiplication table. The way we do this will act as a tool to understanding the rationale behind the table. Again, you will want your slate and gridded math notebook. These will be used in the horizontal position. We will be taking each number here up to x 10.

Tip: In this book, Book 2, the child will be learning tables up through the 6 table; the tables for 7 through 10 will be presented in Book 3.

Here is a finished multiplication table for 2. A multiplication table in a Charlotte Mason math lesson is formatted like several vertical equations in a row, rather than a grid such as you may have learned in elementary school. **Notice that the multiplier is written smaller than the multiplicand, in order to focus attention on the main number of the particular table.** Follow the detailed instructions below to walk your child through creating this table little by little.

1	2	3	4	5	6	7	8	9	10
2	2	2	2	2	2	2	2	2	2
2	4	6	8	10	12	14	16	18	20

Write down the numeral 2 on the (horizontal) slate or graph paper leaving room both above and below:

2

Ask: How many 2s have we? Child answers: 1

Write a small 1 above the 2:

^{1}
2

Ask: One 2 is how many? Child answers: 2
Write a 2 below:

^{1}
2
2

Next write another 2 beside the first one. Point to the middle line and ask, How many 2s have we? Child answers: Two 2s. Write a small 2 above the second 2:

^{1} ^{2}
2 2
2

Ask: How much is two 2s? Child answers: 4
Write 4 underneath the second 2:

^{1} ^{2}
2 2
2 4

Now add a third 2 to the middle line:

^{1} ^{2}
2 2 2
2 4

Say something like, Having three 2s, or 2 "three times," we now have how many altogether?
Child answers: 6

Tip: If, at any time, this is not clear, get out objects such as pennies or beans to show it in the concrete.

1	2	3
2	2	2
2	4	6

Continue in the same way until the whole table is written.

Tip: The multiplication tables in this book will go through 10 x the number. If you prefer, feel free to extend it through 12 x the number.

1	2	3	4	5	6	7	8	9	10
2	2	2	2	2	2	2	2	2	2
2	4	6	8	10	12	14	16	18	20

Step 2: Say it through and write it. *(instructions to the parent)*

Once the entire multiplication table for 2 is constructed, give your child a few minutes to look at it and try to visualize it in his head; then have him say it through several times: One 2 is 2, two 2s are 4, three 2s are 6, four 2s are 8, etc.

Erase a few numbers and ask your child to fill them in. For example:

1	2	3	4		6	7		9	10
2	2	2	2	2	2	2	2	2	2
2	4		8	10		14	16		20

Have your child say the table through again. Now erase different numbers and allow him to fill the table in again, then have him repeat the table aloud once more. For example:

1		3	4	5			8		10
	2	2	2	2	2	2	2	2	2
2		6		10	12	14		18	

Tip: The partial tables given here are only samples. Feel free to erase whichever numbers, and how many numbers, you prefer each time you repeat the process.

Have the child write the table in his gridded math notebook, turned in a horizontal position, for ease in referral and as an aid in committing it to memory. As he writes his table, be sure he pays attention to neatness and

keeping the proper place value with one number per grid square.

1	2	3	4	5	6	7	8	9	10
2	2	2	2	2	2	2	2	2	2
2	4	6	8	10	12	14	16	18	20

Step 3: Practice with Table Work until learned.

The next step is to give your child a variety of questions. Give only as many as you are able in the time allotted. Questions may be spread out over a few days. He may refer to his written table until it is learned by heart.

1. Six 2s are?
2. How much is 2 taken 7 times?
3. 2 taken 5 times is?
4. How many 2s in 12?
5. How many 2s in 16?
6. How much do 7 marbles cost at 2¢ each?
7. Each hen had 2 chicks. If I have 3 hens, how many chicks are there?
8. Find the cost of 2 pencils at 9¢ each.
9. How many $2 pies am I able to buy with $12?
10. How many 2s make 8?
11. 2 x 4 is?
12. 2 x 9 is?
13. How many 2s in 14?