

beauty & truth
MATH

Mathematics in a
Charlotte Mason Education

ARITHMETIC

SAMPLE

YEAR 3 BUNDLE

SAMPLE

Beauty & Truth Math

- Mathematics in a Charlotte Mason Education -

ARITHMETIC YEAR 3 • BUNDLE

Used in conjunction with

STRAYER-UPTON PRACTICAL ARITHMETICS, FIRST BOOK

by George Drayton Strayer and Clifford Brewster Upton

ARITHMETIC • YEAR 3 • BUNDLE

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“Never are the operations of Reason more perfect and more delightful than in mathematics. Here, men do not begin to reason with a notion that causes them to lean to this side or to that. By degrees, absolute truth unfolds itself. We are so made that truth, absolute and certain truth, is a perfect joy to us; and that is the joy that mathematics affords.”

(Charlotte Mason, Vol. 4, pp. 62-63)

“How sad that this subject, ethereal as faery and powerful beyond telling, should find no other adjective than ‘useful’ to justify us in imparting it to our children. Number to the philosophers of old was a touchstone of learning; it was worthy of their greatest respect and deepest thought. Let us take this gift with the others they have given us; this thought of Number as worthy of our best, aesthetically satisfying as an art, beckoning onward as a science, and luring us ever forward towards increasingly enchanting prospects ahead.”

(Stephens, Number. A Figure and a Step Onward, p. 4)

“And if our boys and girls can be brought to feel that arithmetic is a game—a noble game—one of the noblest though not one of the most spectacular that the human race has played—and that it is an honour and a privilege to play at it; and if we can keep that feeling alive by the right exercise and the apt stimulus, cunningly applied with a smile and a jest, as becomes so noble a game, the arithmetic lesson will cease to be a dismal grind and become a grand pursuit full of glamour and excitement.”

(Ballard, Teaching the Essentials of Arithmetic, p. 34)

SAMPLE

WELCOME

Thank you for purchasing this full-year guide! We are humbled and honored by your support. Please read through this introduction carefully. Understanding our approach is vital to maximizing the benefits of each guide.

THE VISION

Beauty & Truth Math exists to assist students AND teachers in the realm of mathematics in a Charlotte Mason education. Reading the scripted lessons and checking your students' answers is possible. However, this keeps the teacher from being an engaged and involved partner in the learning process.

These lessons are designed with the assumption that the teacher will work *with* the students, ask questions, facilitate discussions, and monitor their progress. Each lesson is an opportunity for building relationships between you, your students, and the Lord. Please make the most of this time together, walking alongside your students as they explore and understand mathematical ideas.

We thoroughly believe that math done completely in isolation misses opportunities to make deep connections. Just like a foreign language needs to be communicated and spoken to make connections, math is its own language with its own big ideas. Discussing these ideas is the best way for students to learn these living ideas.

We aim to provide a *living* education as we work with living, born persons. *Living* involves changes and adaptations. These lessons are guides and servants, not masters you must follow. Please use the Spirit's wisdom when discerning what you should modify, skip altogether, push forward on, or slow down on as you and your students are on this journey.

MAKING FORWARD PROGRESS

The Beauty and Truth Math curriculum is a blend of spiral and mastery learning. The weekly review enables students to continue working on challenging ideas without hitting a plateau. We also teach the reasonableness of each math concept and then recap it each year to help build conceptual understanding.

We never want students to get bogged down in an idea they have not fully mastered. **Please continue moving forward**, even if memorization has not yet occurred. Your student's relationships with the Lord, you, and math are more important than memorizing a formula!

CONTACTING US

We welcome feedback and questions! For general inquiries, please email us at contact@beautyandtruthmath.com.

For questions about this guide's content, please email Emily Al-Khatib at emily@beautyandtruthmath.com.

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These guides have been a labor of love. Please respect our hard work and do not share any content and links that are not publicly available on our site.

CORRECTIONS

We have done our best to remove all typos from these guides. If you find any mistakes, please forgive us and let us know *after* checking the [Corrections](#) document in the Important Teacher Helps folder.



WEBSITE LINKS DISCLAIMER

PLEASE PREVIEW LINKS BEFORE USING! While we have done our best to ensure that all sites we link to are appropriate, we do not have control over their content or changes.

We are grateful for the free resources offered by other sites and want to support them whenever possible. We link directly to their pages as they generate revenue through traffic on their sites.

In many cases, the linked pages will provide multiple worksheet options. Most of the time, we will specify which worksheet you will need in the guide. Sometimes, you must choose the worksheet that the guide will also say.

Ensuring the content is age-appropriate for lessons is the teacher's final responsibility. Please email us at contact@beautyandtruthmath.com to report broken links.

READY, SET, GO!

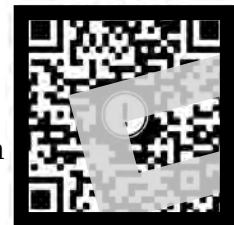
"Putting in the work up front to make the school days run easy."

We have created three folders in this guide to make it easy to access the teacher help documents and printables. Their unique QR codes and links are included in multiple places in this introduction and are shown here for easy identification.

We will walk you through using these linked folders in the following few pages, so please don't worry about viewing them now. This page is simply an introduction to them.

Important Teacher Helps – This folder contains helpful resources to assist and support you as you implement math in a Charlotte Mason education. It includes the following documents:

- A CHARLOTTE MASON MATH EDUCATION outlines a vision for a Charlotte Mason math education.
- THE ARITHMETIC PROGRESSION provides an overview of arithmetic in the Beauty & Truth Math Guides using Charlotte Mason's philosophy. Sources include PR articles & books recommended in the PUS Programmes.
- ALL ABOUT THE GUIDES is everything you need to know about the guide's setup.
- FORMS 1&2 REVIEW ACTIVITIES is a treasure trove of various review activities organized by topic. Use these to keep review time lively and engaging.
- SUPPORT VIDEOS LIST is a compiled, linked list of support videos in this guide.
- ARITHMETIC, YEAR 3 CORRECTIONS is an ongoing list of guide corrections, beginning with the 2023 edition.
- ADDITIONAL SUPPLEMENTAL RESOURCES provide extra teacher support.



Cardstock Printables – This folder contains all resources that require printing on cardstock, as the student will use these documents frequently.



Printables – This folder contains all of the consumable printables for your student.



GET READY!

- **SEE** the **Materials Needed** section in this guide to determine what materials you have and still need to purchase.
- **BUY** Strayer-Upton, Book 1 in physical and/or digital form. **Our Favorites** page links to the Strayer-Upton Book Series and other recommendations we have compiled to help you prepare and organize your materials. 
- **PRINT** the FORMS 1&2 REVIEW ACTIVITIES document in the **Important Teacher Helps** folder.
 - We recommend printing it on colored paper to make it easy to find. *You only need to print this document once for all your Form 1&2 students.*
- **PRINT ALL OF THE DOCUMENTS** in the **Cardstock Printables** folder. We recommend using cardstock, as your student will be using these documents frequently. Sometimes, these will include cut-apart cards. 
- **PRINT ALL OF THE DOCUMENTS** in the **Printables** folder. 
- **DECIDE** if you will print the guide or use it on a screen.

GET SET!

READ THROUGH THE FOLLOWING IMPORTANT TEACHER HELPS:

1. A CHARLOTTE MASON MATH EDUCATION
2. THE ARITHMETIC PROGRESSION
3. ALL ABOUT THE GUIDES



Learn how to implement the guides in daily life. Read through the Putting It Altogether section of this guide.

Prepare your materials. There is no one right way to do this! The following list is simply a compilation of ideas Beauty & Truth Math users have found helpful.

- **Create a student math notebook for each student.**
 - Fill it with both graph and unlined, blank paper. We generally recommend $\frac{1}{2}$ " squares, though some students may need larger squares depending on ability.
 - Create sections in the notebook for daily assignments and reference pages. Decide with your student how to organize the notebook. If applicable, create different sections for each stream of math.
 - Determine whether you will have your student write headings for each assignment; including information, such as the date and page number, is a great idea. Writing the problem number and showing the final answer, either with a box or a circle around it, is also strongly encouraged.
- **Put together a teacher math notebook for yourself.**
 - Create sections for your calendar, lessons from the guides, printable and supplementary resources, exams, notes, and other relevant materials.
- **Find a place for the Cardstock Printables.**
 - Store these in a folder or pocket of your teacher's notebook or inside an accordion file folder. The goal is to keep them accessible and in good condition, as you will use them frequently.
- **Use tabs to label and easily find what you need!**
 - Tab each topic in the FORMS 1&2 REVIEW ACTIVITIES document (from the Important Teacher Helps folder).
 - In the Strayer-Upton books, tab the following:
 - Your place for the current lesson, and the corresponding answer key section in the back
 - Review & mental math pages
- **Have individual containers for each of your student's supplies.** We recommend storing card sets in plastic bags inside an index card holder or binder pouch.

GO!

Any author of math textbooks or guides will tell you that we write to accommodate as many students as possible and provide more than is needed. You have complete freedom to modify the lessons and adjust the number of problems assigned to meet your students' needs.

First, take the Beauty & Truth Math Guide Vow – I do solemnly promise that I will remember and implement the following statements:

- I have permission from Charlotte Mason and the authors of these lessons to adjust or modify any lesson, at any time, to provide a living education to my unique, born persons.
- I have permission from Charlotte Mason and the authors of these lessons to assign fewer problems than what is written in the lessons to provide a living education to my unique, born persons.
- I have permission from Charlotte Mason and the authors of these lessons to assign additional problems beyond those written in the lessons, providing a living education tailored to my unique, born students.

“...the educator has to deal with a self-acting, self-developing being, and his business is to guide, and assist in, the production of the latent good in that being, the dissipation of the latent evil, the preparation of the child to take his place in the world at his best, with every capacity for good that is in him developed into a power.” (Mason, Vol. 1, p. 9)

Then, review the Week Resource page each week and complete the following.

1. Read the Overview so you know what you will be doing next.
2. Complete any Teacher Prep listed.
3. Ensure you have all the Special Materials Needed.
4. Choose an assignment from the Suggested Review to use with your students. These assignments build depth in highlighting and understanding different number relationships. When choosing what to review, consider three things:
 - What areas do my students require more practice to solidify concepts?
 - What topics have we not reviewed in a while?
 - What assignments would give my students a reprieve and an easier lesson to build their confidence and enjoyment of math?
5. Finally, choose mental math problems to use throughout the week.

Now, pray for joy and wisdom as you explore mathematical truths with your students daily. Then dive right into using the lessons, confident that the Lord is with you and for you!

ALL ABOUT THE YEAR

SEEING THE BIG PICTURE

There is no one-size-fits-all way to teach math using the Charlotte Mason method. Our guides are one option for teachers to use. We have created them to be adaptable to each unique student, both in the big picture and in the guides' details.

We have designed our curriculum to imitate the math streams used in Charlotte Mason's schools. Students have several options for the tracks and combinations of these streams. For more information, see our [Scope & Sequence](#) page on our website.



Our [Guides' Big Ideas](#) page shows the main ideas throughout the years.



YEAR OVERVIEW

Arithmetic, Year 3 is a deep dive into multiplication and division. Students finish the 6-12 multiplication tables. As in Year 2, students work with the unit fractions of each table, complete multiplication with larger numbers and short division concepts, and examine measurements associated with each table. Students learn to multiply two 2-digit numbers after completing the multiplication tables in Year 3, and we introduce the concept of long division.

We want students to get in the habit of clearly labeling their work. We recommend having students write down each problem number and mark each answer with a circle or box around it. Students learn to write the date in Term 2, so they are encouraged to include the date in assignments' headings from that point on.

The **maximum** lesson time for students in Arithmetic, Year 3, is 20 minutes.

EVERYDAY & SPECIAL MATERIALS

We assume students will always have their pencil, math notebook with grid paper, grid dry-erase board, and dry-erase marker handy for lesson time. The "Special Materials Needed" sections list any additional materials beyond these items.

CARDSTOCK PRINTABLES VS. PRINTABLES

The teacher must prepare all cardstock printables before the term begins. The special materials sections will list the cardstock printables without links. Meanwhile, printable links are included in the “Special Materials Needed” section of the Weekly Resources page.

INDEPENDENT STUDENT WORK

The Printables folder includes Independent Student Work. This document contains all the Student Response sections that can be completed without the teacher’s help, excluding the answers. We recommend printing it for the student to use at the beginning of the year.



MONEY

In Year 3, money is often used to represent place value. As such, play money is provided for all the dollar bills in the Cut-Apart Cards document. We highly recommend using real coins whenever possible.



THINGS TO LOOK FORWARD TO THIS YEAR

This list highlights the special features and noteworthy things throughout the year. Each term introduction will expound on these ideas.

- All About Pages
- Connections among Multiple Multiplication Tables
- Manipulatives
- Math Jeopardy
- Measuring
- Multiplication Guidelines
- Multiplication Table Charts
- Number Line Activities
- Refresh Activities
- Review Activities
- The Details Matter

MATERIALS NEEDED FOR THE ENTIRE YEAR

Our Favorites links to the Strayer-Upton Book Series and other recommendations to help you prepare and organize your materials.



Textbook

Strayer-Upton, Book 1

Everyday Materials

- Dry-Erase Marker
- Grid Dry-Erase Board
- Notebook (with $\frac{1}{2}$ " grid paper)
- Pencil

Cardstock Printables

- AR.Y3.Bundle Cut-Apart Cards
- AR.Y3.Bundle Reference Pages



Printables

- AR.Y3.Bundle Independent Student Work (optional)
- AR.Y3.Bundle Printables
- AR.Y3.Bundle Printables Answer Keys



SPECIAL MATERIALS

- 1-Inch Grid Paper (4)
- Analog Clock
- Bible
- Black Marker
- Black Pen
- Blocks (2)
- Books (12)
- Buttons (21)
- Calculator
- Calendar
- Chocolate Bar (divided into seven pieces or anything in a bar shape that cuts easily)
- Chocolate Chips (20, or some other small candy)
- Circles (print and cut out)
- Clock (with a second hand) or Stopwatch
- Premade Number Line
 - Black Marker
 - Cardstock Paper (8, 8½"x11")
 - Masking or Painter's Tape
 - Straight Edge (ruler, yardstick, etc.)
- Ruler
- Scale
- Scissors
- Sticky Notes (61, 3"x3")
- Colored Paper (7, different colors, same size)
- Colored Pencils
- Cranberries (168, or another small food item easy to count, such as chocolate chips, raisins, etc.)
- Dice (2)
- Drinking Cup
- Dry Measuring Containers (pint, quart, peck, bushel)
- Highlighters (2 different colors)
- Masking or Painters' Tape
- Money (100 pennies, 25 nickels, 50 dimes)
- Mugs (3)
- Notebook Paper
- Objects to Weigh (different weights)
- Plain Paper
- String
- Tape Measure
- Thermometer (alcohol or digital)
- Two Types of Dry Ingredients (a small one, i.e., flour, berries, rice, beans, etc., and a large one, i.e., apples, oranges, tomatoes, etc.)
- Two-Color Counters (100)
- Water
- Yardstick (handmade option)



beauty & truth
MATH

Mathematics in a
Charlotte Mason Education

ARITHMETIC

SAMPLE

YEAR 3 • TERM 1

• WEEK 4 RESOURCES •

ARITHMETIC. YEAR 3. TERM 1. WEEK 4

OVERVIEW

This week, the students will build the first multiplication table of the year, the 6s, and create a number line to practice the 6s.

Lesson 3 of this week, “1-6 Table Practice,” is an excellent activity for practicing multiplication tables. Students can enjoy it multiple times throughout the year. If you need additional catch-up or review time, you may skip it for now, but don’t forget to incorporate it into future review lessons.

TEACHER PREP

Please read the [Number Line Instructions](#) before beginning this week. The parent should make the number line beforehand due to the student’s age and for the sake of time.

Look over the [game](#) you will play with the student in 1-6 Table Practice. This is an excellent activity for combining multiple students who may need to practice multiplication.



IDEAS NEEDED BEFORE BEGINNING

- Multiplication

SUGGESTED PACE

Day 1: Building the 6s Table
Day 2: Number Line, Pt. 1
Day 3: 1-6 Table Practice
Day 4: Review/Catch-Up
Day 5: Review/Catch-Up

ONGOING REFERENCE PAGES

- Roman Numerals Chart

MENTAL MATH IDEAS

- 174

SPECIAL MATERIALS NEEDED

- 6s Multiplication Puzzle ([printable](#))
- Dice (2)
- [Handout](#) or Grid Paper (with a 10 x 10 square outline drawn)
- Premade Number Line
 - Black Marker
 - Cardstock Paper (8, 8½"x11")
 - Masking or Painter's Tape
 - Straight Edge (ruler, yardstick, etc.)
- Sticky Notes (11, 3"x3")
- Two-Color Counters



SUGGESTED REVIEW

- Comparing Numbers (AR.Y3.T1.W3):
Comparing 3-Digit Numbers Using
Number Lines:
[Worksheet 1](#)
- 4s Table (AR.Y2.T3.W4):
128, 129
- Problem-Solving: 166



SAMPLE

• Building the 6s Table •

AR. Y3. T1. W4. L1

STREAM

Arithmetic



RESOURCES USED

The Teaching of Mathematics to Young Children (Stephens), Teaching the Essentials of Arithmetic (Ballard)

OBJECTIVES

Students will be able to describe and model multiplication as equal groups and build the 6s multiplication table.

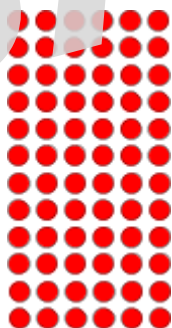
SPECIAL MATERIALS NEEDED

Two-Color Counters

THE PLAN

1. Today, you get to create a table showing groups of 6s. You completed some of these tables last year.
 - a. What do you remember about multiplication? Draw out the idea of repeated addition and groups of.
 - b. What do you remember about division? Draw out the idea of repeated subtraction and equal sharing or piles.
2. This is our first table of the year, so we will build it slightly differently. As I write the numbers on the board, build the groups with counters. I will walk you through how to make the groups as we go. Let's get started! You are writing the final table shown on the next page.
 - a. Have the pile of counters off to the side but within easy reach.
 - i. How many 6s do you see on the table right now? (0) Lay the grid dry-erase board in the landscape position. Two spaces from the left side of the board along the top, write a 0 in smaller print, then a larger print 6 directly underneath.
 - ii. And how many are zero 6s? (0) Draw an equal line below the 6 and write 0 below.
 - b. Place 6 counters in a neat row, leaving plenty of space between the counters and the edge of the table. Be sure that the counters are as neat and evenly spaced as possible.
 - i. How many groups of 6 do you see? (1) Count over three spaces to the right from the 0 and write a 1 in a smaller print, then a larger print 6 directly underneath.

- ii. What is one group of 6? (6) Draw an equal line below the 6 and write 6 below.
- c. Place 6 more counters in a neat row directly underneath the original row. Ensure the counters are neat and evenly spaced, both horizontally and vertically.
 
 - i. What shape do the counters make? (A rectangle)
 - ii. How many groups of 6 do you see now? (2) Write a 2 in smaller print, then a larger print 6 directly underneath.
 - iii. And how many are two 6s? (12) Draw an equal line below the 6 and write 12 below.
3. As you go, I will continue to ask you questions about each of the groups of sixes. We will stop at a special group but continue building one row at a time for now. Continue asking, "How many groups of 6 do we have now?"
4. Stop your student after he builds six groups of 6. Let's look at this particular group. What do you notice about it? Draw out the idea that it is a square.
5. Until now, all the numbers we have looked at, 6, 12, 18, etc., have been rectangle numbers because we can build a rectangle with that many counters. This one is a square. Do you remember what we call a number like 36? (A square number) Each table has a square number that we will pay special attention to. What do you notice about the two factors of 36? (They are the same.)
6. Continue until the table is complete. Ensure you correctly line up the place values as the numbers get bigger. The complete table may need two rows to fit on the dry-erase board. See the diagram below for the final array and table.



0	1	2	3	4	5	6	7	8	9	10	11	12
6	6	6	6	6	6	6	6	6	6	6	6	6
0	6	12	18	24	30	36	42	48	54	60	66	72

7. Look at the table for a few moments, trying to see all the numbers and where they go in your mind's eye. 🚚
8. Let's read it together. We can read the table in three different ways. You can read $0 \times 6 = 6$ as zero 6s are 0, 0 groups of 6 are 0, or 0 times 6. The goal at this point is conceptual understanding, so use whatever wording your student prefers.

9. Can you keep up with my pencil? I will point at different ones, and we will read each one together. *Point to each one in random order. You can be silly with this. Go back and forth between two for a while, then suddenly jump to another. Mix it up and make it fun.*
10. Study the table again. Read it backward to me.

STUDENT RESPONSE

1. Find a clean piece of paper in your math notebook's reference section. When you are ready, write your table on paper, doing your best not to look back at the dry-erase board. As you write each problem, say what you are writing out loud.
2. Count by 6s to 72. Excellent work today!

SAMPLE

• Number Line, Pt. 1 •

AR. Y3. T1. W4. L2

STREAM

Arithmetic



RESOURCES USED

None

OBJECTIVES

Students will be able to create a number line from 0-60 and solve math problems using it.

SPECIAL MATERIALS NEEDED

6s Multiplication Puzzle, Sticky Notes (11, 3x3"), Premade Number Line: Black Marker, Cardstock Paper (8, 8½"x11"), Masking or Painter's Tape, Straight Edge (ruler, yardstick, etc.)

SPECIAL NOTE:

Due to the student's age and time constraints, the teacher should make the number line beforehand. See the [Number Line Instructions](#).



The biggest thing that confuses students is that we count the spaces between each number/tick mark when counting on a number line. Sometimes, referring to the number of "jumps" between each number is helpful.

THE PLAN

1. In the last lesson, you created your 6s Multiplication Table. Let's review a little bit.
 - a. Can you count by 6s as quickly as you can up to 72? (6, 12, 18, etc.)
 - b. How fast can you do it backward? (72, 66, 60, etc.)
 - c. Complete a 6s Multiplication Puzzle.
 - d. Highlight the square number on your 6s table. ($6 \times 6 = 36$)
 - e. Why is 36 a square number? (Because it makes a square.)
2. Today, let's look at those numbers with a special line called a number line. We use a number line to organize numbers and tell us information. The number line we will create today will go from 0 to 60.
3. Grab the sticky notes; write zero on the first one. Now, I want you to count by 6s aloud, writing each number on a different sticky note until you get to sixty. (6, 12, 18...)

4. Show the student the premade number line. This is the start of a number line that I created. Why are there arrows on each end of it? (To show that numbers continue getting bigger and smaller forever)
5. Take the sticky note numbers and lay them down in order above the line. Make sure the numbers go all the way across the number line so you use the entire number line. *Let the student try it without help.*
6. Now, let's ensure you've set it up neatly and accurately.
 - a. Are all your numbers in between the arrows? If they're not, have your student correct them.
 - b. How far apart are 0 and 6? Or how much bigger is 6 than 0? (6) What about 6 and 12? (6) 12 & 18? (6) So every number is the same distance apart. We call that equidistant. Does how you arranged them show that they are all equal distances apart or evenly spaced? *Have the student correct the spacing if needed.*
 - c. Before we play with the number line, we want all the numbers to be in a line. Are your numbers different heights or in a straight line at the same height? If they're not all even, go ahead and correct that now.
7. Now, let's play with the number line. Find the number eighteen. Find the number forty-two. Which number is larger? (42)
 - a. Starting at eighteen, count up to forty-two by sixes to find out how much bigger it is so you can tell me how far apart eighteen and forty-two are. (24) *Make sure the student counts the spaces so they get twenty-four as the answer. So, starting on 18, the student points to 24 and counts/says, "Six." Then 24-30 is "Twelve," 30-36 is "Eighteen," and 36-42 is "Twenty-four."* 🚗
8. Let's investigate the number line a little more.
 - a. Point to 12 and 54. Which number is smaller? (12) How far apart are they? (42)
 - b. Where would 20 be on this number line? (Between 18 and 24, closer to 18)
 - c. Where would 40 be? (Between 36 and 42, closer to 42)
9. It's your turn. Ask me about a relationship between two numbers. Answer the student incorrectly, explaining how far apart the numbers are by saying six higher than the answer, allowing him to correct you and demonstrate how to find the answer.
10. Now, choose a number not written on the number line for me to find. Reply with a partially correct answer by correctly pointing between the two appropriate numbers, but skew your answer incorrectly. So if the number is ten, point closer to six than twelve so the student can correct you.

STUDENT RESPONSE

1. You've done a lot of work today with the number line! How would you explain what a number line is to a friend? *Draw out the idea that it represents numbers that are equal distances apart. If you're hanging up the number line, just leave the sticky notes on it. Otherwise, collect them in a neat pile for review down the road.*

SAMPLE

• 1-6 Tables Practice •

AR. Y3. T1. W4. L3

STREAM

Arithmetic



RESOURCES USED

How Close to 100? (Boaler)

OBJECTIVES

Students will be able to practice tables 1-6 by showing areas within rectangles.

SPECIAL MATERIALS NEEDED

Handout or Grid Paper (with a 10 x 10 square outline drawn), Dice (2), Marker or Colored Pencil

SPECIAL NOTE

This lesson does not have a student response section.

THE PLAN

1. You have done so much work with groups of 6 this week! Give yourself a woo-woo! Today, we will play a game with the 6s and use all of our tables from last year except for one. We won't use the 0s today; you will see why as we play.
2. Do you remember placing the counters in rectangles of different sizes earlier this week? Instead of using counters, we will draw the rectangles on grid paper. The goal is to fill in as much space on the gameboard as possible with rectangles. The game ends when you can't fit a rectangle on your board. The number of squares that are not in a rectangle is your score. The goal is to get the lowest score possible. Are you ready?
 - a. For your first turn, roll the two dice.
 - i. What numbers did you roll? *The student will tell you two numbers.*
 - ii. Those numbers tell you the size of your first rectangle. *If the student rolled a 2 and 3, the rectangle could be a 2 x 3 or a 3 x 2. You can draw the rectangle vertically or horizontally anywhere on the gameboard.*
 - iii. Inside the rectangle, write the equation that tells you its size and the number of boxes it contains. *For example, the student would write 2 x 3 = 6 in a 2x3 rectangle.*
 - b. Roll again to find the dimensions of the next rectangle.
 - i. What numbers did you roll?
 - ii. Draw your rectangle on the board.
 - iii. Write the equation inside the rectangle.

- c. Continue to roll the dice and draw rectangles. *Let the student play once without thinking about strategy. For the second game, ask questions before starting, such as: “Does it matter where you draw rectangles on the board? Could you find a better way to fill in the board to lower your score? 🚚*
- 3. Variation: The student can play against the teacher or another student. Each person uses a different color marker to mark rectangles. This time, the winner has the most boxes outlined when the game ends.

SAMPLE