Step 2
Please review the FAQs and contact us if you find a problem with a link.

Course Description: Students will explore math in the following areas: numbers, geometry, measurement, algebra, and probability. Students will grow in their understanding of the relationship between numbers and the world. Topics include: irrational numbers, scientific notation, volume and surface area. Students will be learning to construct angles and segments using a straight edge and compass. They will study different transformations and practice finding similar figures. Students will learn the concept of variables and algebraic expressions. They will solve one- and two-step equations. Finally, they will explore probability and variation creating, analyzing and visualizing data sets.

Materials:
- compass and straight edge

How to Use:
- PLEASE carefully read and follow your directions each day. We’re getting a lot of comments about things not working on sites, but they are things I don’t ask you to use.
- Sometimes you may be smarter than the computer. If you get an answer marked wrong, but you are sure you are right, you can write to us to check. Then, we can make a note of it for other students taking the course after you.
- This is a combination of Master Math and GA Virtual Learning (with some extras thrown in). On the GA site you will click on the tab for the page numbers I list. On Master Math you will watch the video and take the quiz.
- If it says “Quiz Group” or “Test Group” but you don’t see the quiz or test, click on those words and it should appear.
- I have counted that there are 161 assignments. You have 180 days. These extra days may be taken up with worksheets from the Master Math pages. You will see my direction to complete a worksheet if you get more than one wrong on your quiz. Basically you are doing one lesson a day. If you don’t have that extra work to do, I have included fun activities and games for you to do on the extra days.

Day 1
1. Are you familiar with the terms on page 2?
2. Read the math vocabulary on page 1 and look for new terms. (Push pause on the talking.) Scroll down to the key terms. Look them over and use it to complete the crossword puzzle.
3. Click on play in the Factors and Multiples box on page 2. (Note: 57 is not a prime number. It has factors of 3 and 19.)

Day 2
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1. Watch the videos for the lesson on prime factorization and for the exercise.
2. Play Fruit Shoot with numbers up to 99.
3. Practice with prime factorization.

Day 3
1. Scroll down on page 2 to between the videos and read about the GCF and LCM.
2. Tell someone what those acronyms stand for and what those terms mean.
3. Scroll down and click on play to watch the Walk Through Examples. (If you already know this, you can skip to the exercises. If you are getting them wrong, come back to the video.)
4. Here’s another lesson on GCF if you need it.
5. Practice GCF.
6. If you need more help, you can use the Khan Academy videos on the left side of those pages.

Day 4
1. Do you need another lesson on LCM before you practice it?
2. Practice LCM.
3. If you need more help, you can use the Khan Academy videos on the left side of those pages.

Day 5
1. Read the top of page 4 on adding and subtracting fractions. Watch the presentation on factors and multiples for help in finding common denominators.
2. If you need more help, here are lesson on it. Click on “Fractions – Add and Subtract (Home)” to get started. It’s first on the list.
3. Practice subtracting fractions.
4. Practice adding mixed fractions.
5. If you want more help, here are two videos.
   ○ video 1
   ○ video 2

Day 6
1. Go down to multiplying fractions on page 4.
2. Read about multiplying and dividing fractions and watch the video. Look through the examples.
3. If you want more teaching, choose Fractions – Multiply and Divide (Home) from the menu. (In the first column on the left)
4. Practice multiplying fractions.
5. Practice dividing fractions.
6. This website has more teaching if you need it, and here is an extra video.

Day 7

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1. Do some word problems. Choose two of the following.
2. Adding and subtracting fractions. (Alternate)
3. Multiplying fractions by fractions. (Alternate)
4. Multiplying fractions by whole numbers. (Alternate)
5. Dividing fractions. (Alternate)

Day 8
1. Read the chart on page 14 about converting between fractions, decimals and percents and then do the match up activity.
2. Practice converting fractions to decimals. (You can use a calculator.)
3. Practice converting decimals to fractions.

Day 9
1. You can refer to the chart on page 14 for help with your conversions.
2. If you want more help, you can use this site.
3. Practice converting decimals to percents.
4. Practice converting percents to decimals.

Day 10(*)
1. Today you will investigate factors geometrically! For this project, you'll be asked to complete the worksheet. The first two have been completed for you. You can use blocks or post-it notes as manipulatives for creating the factor visuals. Draw the number of squares listed. Draw them in each rectangular or square shape possible. The length of sides of those shapes are your factors. (For instance, for four squares you can line them up in a row and the sides would be 1 and 4, or you could stack them in a square and the side lengths would be 2 and 2. The factors would be 1, 2, and 4.)
2. Answer Key Check your answers when you are done.

Days 11-15
Master Math
Your goal is to complete this in one week. If you get more than one wrong on the quiz, do the worksheet.

- Estimating with Fractions
- Multiplying Fractions and Mixed Numbers
- Dividing Fractions and Mixed Numbers
- Fraction-Decimal Equivalency
- Have an extra day? Pick a game.

Days 16-25
Master Math
Your goal is to complete this in two weeks. There are seven lesson. If you get more than one wrong on the quiz, do the worksheet.

- Multiplying Decimals

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Day 26
1. Read this list of terms about rational and irrational numbers.
2. Now complete the crossword puzzle. There are no spaces between words.
3. Learn about plotting numbers on a number line.
4. Practice with a number line.

Day 27
1. Learn about absolute value.
2. Play numberball OR practice at Khan Academy.
3. Look at the picture of number sets. What does this show? Examples: All whole numbers are integers, but not all integers are whole numbers. All integers are real numbers, but not all real numbers are integers. What else does it show?

Day 28
1. Learn about adding integers with different signs.
2. How do you subtract a negative number?
3. Practice.

Day 29
1. Learn about multiplying negative and positive numbers.
2. Learn about dividing negative and positive numbers. Dividing follows the same rules as multiplying in terms of negatives and positives.
3. Practice.

Day 30
1. Catch up/review day.
2. If you don’t need to catch up, try these two activities.
3. Rick’s Toy Store — Click on integers – add and subtract (puzzles) in the left-hand column. Click on topics in the top left corner and choose Rick’s Toy Store at the bottom of the list.
4. Wendy’s Toy Store Follow the directions in number 3, but choose multiply and divide.

Day 31

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1. Read carefully through the long list of key words about shapes, area and volume. Take your time. Complete the crossword puzzle. If you need to, look up the word to understand it better.

Day 32
1. Do page 5 on unit conversions and measurement.
   ○ Look at this metric guide.
   ○ Then play the game in the side bar. (Only level 1 works.)
1. Go through page 7 as well on measuring fractions on a ruler.
   ○ Then play the ruler game.
   ○ If you need help reading the ruler, you can learn here.

Day 33
1. Read about converting measurements.
2. Answer four of the questions correctly before moving on. You may use a calculator.
3. Now read through this page on conversions.
4. Answer four questions correctly. You may use a calculator.

Day 34
1. Go through page 2 on finding area and perimeter.
2. Do the quiz. Pay attention to whether it is area or perimeter. Check your answers when you are finished.

Day 35
1. Go through page 3 on area of triangles and other polygons.
2. Take the quiz. I have checked these answers.

Day 36
1. Go through page 4 on volume.
2. Take the quiz. I have checked these answers. There is a tricky thing in the answers. Can you spot it?

Day 37
1. Go through page 5 on surface area. Here’s a surface area guide.
2. Take the quiz. Skip the matching. You can use a calculator. (The second one should have the answer measured in meters squared. For the question about Mark’s bedroom, add in if he painted the floor as well. The fourth one, with the diameter of 4, should have the answer 100.48 Don’t fall for the trick in that question!)

Day 38
1. Try the first 9 questions on this quiz on volume, surface area and perimeter. It will take some thinking. You can skip number 3.

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Day 39
1. Catch up/review day.
2. If you don’t need to catch up, then go to this site and find the Builder’s Inc. building.
   Solve problems.
3. You can do other buildings too if you want.

Day 40
1. Measurement: Do page 17. (Volume and Surface Area Assignment)
   ○ Answer Key Check your answers when you are done.
   ○ Keep this for your portfolio.

Day 41
1. Perimeter and Area of Similar Figures If you get more than one wrong on the quiz, do the worksheet.

Day 42
1. Finding Unknown Measures in Similar Figures If you get more than one wrong on the quiz, do the worksheet.

Day 43
1. Scale Drawings If you get more than one wrong on the quiz, do the worksheet.

Day 44
1. Transformations If you get more than one wrong on the quiz, do the worksheet.

Day 45
1. Transformations Part 2 If you get more than one wrong on the quiz, do the worksheet.

Days 46-50
Master Math
Your goal is to complete this in one week. There are four lessons. If you get more than one wrong on the quiz, do the worksheet.
- Surface Area of Prisms
- Surface Area of Cylinders, Pyramids and Cones
- Surface Area of Composite Solids
- Volume of Prisms, Cylinders, Pyramids and Cones
- Extra day? Play Reflect and Rotate and 3D Shapes Concentration.

Day 51
1. Read through this page of geometry terms.
2. Copy down each word (not the definition) and draw a picture for each one.

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Day 52
1. Learn about quadrilaterals.
2. Learn about symmetry. You don’t have to do the questions.
3. Play this lines of symmetry game.

Day 53
1. Read about rotational symmetry on page 6.
2. Take this quiz on symmetry. It asks what kind of line of symmetry does a shape have. A horizontal line of symmetry runs horizontally across the shape.
3. How many points of rotational symmetry do these shapes have? That means they look the same when rotated to a certain degree.

Day 54
1. Learn about triangles.
2. Play around with these triangles until you can identify each of the terms by the picture. Have someone quiz you on those triangle terms.
3. Take this symmetry quiz.

Day 55
1. Read about similar shapes and answer the questions.

Day 56
1. Learn about similar triangles and answer the questions.

Day 57
1. Go through this page on circles.
2. Go through this on three-dimensional shapes.

Day 58
1. Read about cross sections.
2. Play with cross sections. Click and drag to change the placement of the cross section.
3. Explore cross sections with this interactive.

Day 59
1. Catch up and review day.
2. You can use these activities for review if you don’t need today to catch up.
   ○ Take this symmetry quiz.
   ○ Then take this quiz. Similar triangles have the same angles, otherwise they wouldn’t look the same.
   ○ Use this geometry terms practice.

Day 60
1. Create symmetry with the Symmetry Artist.

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Day 61
1. **Concept of Pi and Circumference of Circle** If you get more than one wrong on the quiz, do the worksheet.

Day 62
1. **Pi and Area of Circles** If you get more than one wrong on the quiz, do the worksheet.

Day 63
1. **Perimeter and Area of Composite Figures** If you get more than one wrong on the quiz, do the worksheet.

Day 64
1. **Volume of Composite Solids** If you get more than one wrong on the quiz, do the worksheet.

Day 65
1. Read the **key terms**. Write each one down and draw a picture for its definition. You don’t have to write the definition.

Day 66
1. Follow the **directions** to draw.
2. Check your drawing against this one. Did you get it?

Day 67
1. Learn about **measuring angles** with a protractor. Here’s a video if that helps you.
2. **Practice** measuring angles.
3. Now find the **angles**.
   - Choose up to 180 degrees in fives.
   - You can click and drag the protractor to get them lined up for measuring.

Day 68
1. If you need a **protractor** or **ruler**, you can print one.
2. Do the **drawings** described.

Day 69
1. Go through pages 4, 5 and 6 on drawing and **bисecting segments**.
2. Do pages 7 and 8 on copying and **bisecting angles**.
   - Make sure you are following the directions and making the drawings. You don’t have to do the quizzes.
   - You can use the links to the animations in the side bar. **copying**, **bisecting**

Day 70

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1. **Geometry** Do page 9. (Constructing a Perpendicular Line, Perpendicular Bisector and Parallel Lines)

**Day 71**
1. Time to Practice Constructions! Name the two tools used in a basic construction.
   ○ (Answer: Straight Edge and Compass)
1. Use graph paper to draw perpendicular lines, bisectors, and parallel lines.

**Day 72***
1. **Geometry** Do pages *11 and 12. (Transformations and Exploring with Transformations)
   ○ *Print some graph paper. (It might be easier to do the transformations activity on 11 on the regular site.)*

**Day 73**
1. **Geometry** Do pages 13 and 14. (Three-Dimensional Figures and Cross Sections and More Practice With Cross Sections)
   ○ On 14 it might be easier to complete the cross sections activity on the regular site.

**Day 74**
1. Here’s a lesson to try on transformations. Do all the parts.

**Day 75**
1. Learn about scale drawings.
2. Here’s a video about how to do it.
3. Make a scale drawing of a house that has 1600 square feet of living space, and contains the following: kitchen, bathroom, living room, and 2 bedrooms. (from GVL)
4. If you are interested in doing things like this on the computer, try Sketchup.

**Day 76**
1. **Geometry** Do page 17. (Finding a Missing Side Length in Similar Figures)
   ○ If it’s easier, after you complete the example, you can do the rest of the page on finding the missing side of a similar figure on this page.

**Day 77**
1. **Geometry** Do pages 18 and 19. On 19 just do the first 5 problems. (Finding a Missing Perimeters and Areas in Similar Figures and Time to Practice Similar Figures)

**Day 78**
1. Today is catch up/review day.
2. If you don’t need to catch up, here are some activities for review.
   ○ measuring angles
   ○ similar figures

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shapes organizer

Day 79
1. Geometry Do page 20. (Geometry Discussion)

Day 80
1. Geometry Do page 21. (Geometry Assignment – Club Logo)
2. Keep this for your portfolio.

Days 81-85
Master Math
Your goal is to complete this in one week. There are four lessons. If you get more than one wrong on the quiz, do the worksheet.
- Writing and Evaluating Expressions
- Properties of Addition and Multiplication
- Distributive Property
- Use Formulas to Solve Problems
- Extra day? Play some integers games.

Day 86
1. Read through the key terms and do the crossword puzzle on page 1.
2. Go to page 2 and read the top of the page about rate and proportion. Do the little activity. Stop there.

Day 87
1. Complete this page. Watch the video and answer the questions. You can use a calculator.

Day 88
1. Complete page 3 on rates and proportions using equivalent fractions. Skip the matching in the quiz group.

Day 89
1. Review fractions, decimals and percents on page 4. (Don't do the questions at the bottom!)
2. Complete these questions.

Day 90
1. Read the key terms on algebra on page 1 and complete the crossword puzzle.
2. Go to page 3. Watch the video if necessary on the order of operations. They are listed below the video if you just need a reminder. Do the two order of operations activities and then stop. (If you need a reminder about solving exponents, stop by page 2.)

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Day 91
1. Learn about the properties using this reference guide. (If you want videos, check out page 3.)
2. Here are two more properties: additive inverse, multiplicative inverse.
3. On page 3 watch the video on the distributive property or read through this explanation.
4. Name that property.

Day 92
1. Complete page 4 on expressions.
2. Also watch the video on combining like terms.

Day 93
1. Evaluate the expressions.

Day 94
1. Read this page on algebra and answer the questions.

Day 95
1. Complete page 3 on solving equations with addition and subtraction and one variable.

Day 96
1. Complete page 4 on solving equations with multiplication and division.

Day 97
1. Algebra Do page 18. (Balancing Scales by Using Equations Assignment)
2. Check your answers when you are done. Answer Key

Day 98
1. Try your hand at writing expressions.

Day 99
1. If you don’t need to catch up, here’s some word rate and proportion word problems for review.

Day 100
1. Do the lesson on balancing equations with spy guys.
2. Then play hoops to practice more with solving equations.

Day 101
1. Read page 5, use the videos to learn about inequalities.
   ○ Do the activity and quiz, except skip the matching.
   ○ On the activity the one should read 4x is less than 20.
○ On the quiz. The second one about calories with the answer being less than or equal to 320 has the answer wrong. You are correct for that one if it marks you wrong. (answer: The answer is less than or equal to 328.)

Day 102
1. Do pages 6 and 7 on direct variation. Do not do the quiz.

Day 103
1. Read through the page on solving equations.
   ○ There is a typo in Investigate problem. The 4 should be 5.
   ○ Bennett has 15 coins in his coin collection. That is 5 more than his friend Matthew has in his coin collection. Write an equation that represents s, the number of coins Matthew has.
1. Solve one-step equations.

Day 104
1. Go through the page to learn about solving two-step equations.
2. Practice solving two step equations.

Day 105
1. Algebra Do page 17. Please read the directions below BEFORE you start. (Algebra Assignment – Skating)
   ○ For #4, the numbers to look at are the first and last columns, number of people and Total Cost.
   ○ For #10, the expression created is in #8, not in #7.
1. Check your answers when you are done. Answer Key

Days 106-110
Master Math
Your goal is to complete this in one week. There are four lessons. If you get more than one wrong on the quiz, do the worksheet.
- Writing Equations in One Variable
- Solving Equations with Addition and Subtraction
- Solving Equations with Multiplication and Division
- Solving Two-Step Equations
- Extra day? Play an equations game.

Days 111-115
Master Math
Your goal is to complete this in one week. There are four lessons. If you get more than one wrong on the quiz, do the worksheet.
- Functions
- Solving Inequalities with Addition and Subtraction

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- Solving Inequalities with Multiplication and Division
- The Number Line and the Coordinate Plane
- Extra day? Play the coordinate plane game.

**Days 116-120**
Master Math
Your goal is to finish this in one week. There are four lessons. If you get more than one wrong on the quiz, do the worksheet.
- The Coordinate Plane
- Integers and Absolute Value
- Adding and Subtracting Integers
- Multiplying and Dividing Integers
- Extra day? Play some integers games.
- Use a worksheet or use prtscr and add a page to your portfolio.

**Days 121-125**
- Operations with Rational Numbers
- Solving Algebraic Expressions with Addition and Subtraction
- Solving Algebraic Expressions with Multiplication and Division Take a screen shot of your quiz for your portfolio.
- Try your hand at some more equations: addition/subtraction and multiplication/division.
- Extra day? Make up a word problem that you can use an algebraic equation to solve. Write the problem, equation and solution.

**Days 126-130**
Master Math
Your goal is to finish this in one week. If you get more than one wrong on the quiz, do the worksheet.
- Solving Two-Step Algebraic Expressions
- Solving Inequalities
- Read this page on solving inequalities and answer the questions.
- Direct Variation
- Extra day? Play an equation game.

**Days 131-135**
Master Math
Your goal is to finish this in one week. There are four lessons. If you get more than one wrong on the quiz, do the worksheet.
- Ratios and Rates
- Proportions
- Writing and Solving Proportions
- Slope
- Extra day? Choose a math game.

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Days 136-140
Master Math
Your goal is to complete this in one week. There are four lessons. If you get more than one wrong on the quiz, do the worksheet.

- **Inverse Variation**
- **Percent Equation**
- **Percentage Increase and Decrease**
- **Discounts, Markups, Simple Interest**
- Extra day? Write an algebra word problem. Write the problem, equation and solution. Need ideas?

Day 141
1. Learn about and practice mean, median and mode on page 2.
   - Need more? Practice mean here. And find the median here.

Day 142
1. Learn about and practice box and whisker plots on page 3. (Skip the matching.)
2. If you need more instruction, try this page.

Day 143
1. Read the page and practice different ways of representing data.
2. If you want, here’s more practice with stem and leaf plots.

Day 144(*)
1. Go through pages 1 through 4 on data.
2. (*)Practice reading tables.
3. Also go through pages 1-3 on surveys.
4. Make one graph.

Day 145
1. Go through pages 1-5 on samples and population.
2. Go through pages 1-6 on variation.
3. Practice finding measures of center. You can use a calculator.

Day 146
1. Go through these pages on making inferences from data. Answer the questions.
2. Go through these pages on making inferences from data. Answer the questions.

Day 147
1. Catch up/review day.
2. If you don’t need to catch up, try these graph activities.
   - choose the best type of graph

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Day 148
1. Go through these pages introducing probability.
2. Play to practice.

Days 149
1. Go through these pages on experimental and theoretical probability.
2. Go through the page as well. Make sure you work through the examples.

Days 150
1. Practice what you know about probability. (If the first question is about a dart board, feel free to use the hints on that one.)

Days 151-155
Master Math
Your goal is to complete this in one week. There are four lessons. If you get more than one wrong on the quiz, do the worksheet.
- Mean, Median, Mode, and Range
- Describe, Analyze, and/or Summarize a Data Set
- Input-Output Tables
- Analyzing Graphs
- Extra day? Create a graph.

Days 156-160
Master Math
Your goal is to complete this in one week. There are four lessons. If you get more than one wrong on the quiz, do the worksheet.
- Test Taking Tips
- Stem-and-Leaf Plots
- Histograms
- Circle graphs
- Extra day? Create a graph.

Day 161
1. Read this page on scatter graphs and answer the questions.

Day 162
1. Data Analysis. Do page 6. (Data Analysis Assignment)
2. Check your answers when you are done. Answer Key

Day 163
1. Review probability.

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Day 164
1. Catch up day — If you are on top of things try this trickier type of probability problem.
2. Read through these pages on compound probability. Then practice.

Day 165
1. Data Analysis. Do page 15. (Question for Thought: Data Analysis)

Day 166*
1. *Here is an Experimental Probability Assignment. You will use the links on the page for the assignment. (online coin toss and virtual spinner)
2. Check your answers when you are done. Answer Key (The second page would just be 25%. We changed the spinner used in the assignment.)

Days 167-180
Master Math
There are nine lessons. Your goal is to complete this by Day 180. If you get more than one wrong on the quiz, do the worksheet.
- Introduction to Probability
- Theoretical and Experimental Probability
- Dependent and Independent Events
- Equations and Functions
- Solving Multi-Step Equations
- Solving Equations with Variables on Both Sides
- Finding Slope
- Finding Missing Dimensions in Plane Figures and Prisms
- Converting Measures between Systems

Congratulations! You’re finished!