

The GED Math Foundations Roadmap

Orientation — Your Map, Your Tracker, and How the Whole Thing Works

A Summer Study Guide You Can Do On Your Own

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A Letter Before You Begin

Hello Everyone,

Classes are paused for the summer, but learning doesn't have to be. I put this guide together for those of you who told me you wanted to keep your math moving while we're on break. There's no grade here and no pressure. This exists because you asked for it.

I built it so you can use it *on your own*. Every lesson explains the idea first — the **why** before the **how** — and every set of practice questions comes with an answer key that doesn't just give you the answer, it walks you through the thinking. That part is on purpose. When I'm not sitting next to you, **the answer key is me, explaining**. Read it even when you got the question right.

Go at your own pace. The Roadmap on the next pages is your map — it shows where you are and what comes next. If you miss a few days, that's fine; summer is summer. Just come back, find your spot on the map, and pick up again. What matters is understanding, not speed.

I meant it when I said you can reach me, and I do mean it. I'll also be with my family this summer, and that time matters too — so I've built this guide to answer most of your questions itself, before you ever need me. The next page shows you what to try when you get stuck. Work through those steps first; they'll get you unstuck more often than you'd expect. And when something truly needs me, I'm here — just know my replies may be slower than during the school year.

You are capable of this. You've already shown that. Have a good summer — and I'll see you on the other side of it.

— Myles

How to Use This Guide

The **Roadmap** is your map for the whole summer. The **lessons** are the road. Every lesson has the same shape, and it speaks in the same five colors — after your first lesson, you'll be able to find your place on any page by color alone:

Every lesson speaks in the same five colors — after one lesson, you can find your place by color alone:

blue = the idea	green = worked examples	amber = your turn	violet = answers, explained	teal = more practice
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Here's the rhythm that works best:

- 0. Do the Warm-Up first.** Two questions you already know how to answer, right at the top of every lesson. Thirty seconds. They're there so you start with a win — momentum is real.
- 1. Read “The Concept” slowly** (the blue box). This is the idea behind the math. Read it more than once if you need to — out loud even. The idea comes first.
- 2. Study the Worked Examples** (the green box). Follow each step. Cover the answer with your hand and try to predict the next move.
- 3. Try all five “Check for Understanding” questions on your own** (the amber box) — before you look at anything. Getting them wrong here costs nothing. That's what they're for. You'll hit a dark red PAUSE bar before every answer key; it means exactly what it says.
- 4. Then read the Answer Key** (the violet box) — **including the reasoning in parentheses.** Even the questions you got right. The reasoning is where the learning lives.
- 5. Want more reps? “More Practice”** (the teal box) is there when you do — eight more questions, with every answer explained.
- 6. Update your Progress Tracker** honestly. It's for you, not for a grade.

One more signpost: at the top of every lesson there's a small strip telling you **which lesson you're on, which phase of the Roadmap it**

belongs to, and about how long it takes. You always know where you are and what you're in for before you start.

Three honest labels on every tracker: **New to this, Practicing, Got this!** Nobody is checking these but you. Marking something “Practicing” is not a failure — it's an accurate, useful thing to know about yourself.

Repeating a lesson is allowed and encouraged. Going back over something is not falling behind. It's how mastery actually happens.

When You Get Stuck

Getting stuck is not a sign you can't do this. It is a normal, expected part of learning — it happens to *everyone*, including me. Here is what to do, in order, before you reach for your phone:

- 1. Slow down and re-read.** Go back to “The Concept” and the Examples and read them again, slowly. Then try the question one more time. A surprising number of walls come down right here.
- 2. Work backward from the answer.** Look at the Answer Key, but don't just read the answer — follow the reasoning in the parentheses and find the exact spot where your thinking and the key's thinking split apart. That spot is the lesson.
- 3. Park it and keep moving.** If it still won't click, write the question down, mark that topic “Practicing,” and go on to the next thing. Come back in a day or two — your brain keeps working on it quietly in the background, and problems that felt impossible on Monday often look easy by Wednesday.

If you still need me

For the few knots you truly can't loosen on your own, reach me: **xamyxamu@hotmail.com**, or text/call **845-464-7343**. I'll answer as soon as I can; in summer that may take longer than usual, so send it and keep going rather than waiting on me. Save these messages for the questions that genuinely need a person — and when you hit one, don't be shy. That's exactly what the channel is for.

The Roadmap

Before we calculate, we have to understand the *architecture* of numbers — then build outward from there. Here is the whole summer at a glance — every topic now points to the exact lesson that teaches it.

Phase 1 — Number Sense & the Base-10 System

Before we calculate, we understand how numbers are built.

- **Place Value** — the “home” of every digit: ones, tens, hundreds vs. tenths, hundredths. (*Lesson 1*)
- **Rounding & Estimation** — when “close enough” is useful, and how to get there. (*Lesson 2*)
- **Properties of Zero and One** — why these two numbers are the VIPs of math. (*the Interlude, right after Lesson 4*)

Phase 2 — The Core Four (Whole Numbers)

The engine of all math.

- **Addition & Subtraction** — combining, and finding the difference.
- **Multiplication & Division** — scaling up, and sharing out.
- **Order of Operations (PEMDAS)** — the traffic laws of math: which operation goes first. (*Lesson 14*)

A note on the first two: you won't find a lesson titled “Addition.” The core four operations are the ground under every lesson in this course — you'll sharpen them everywhere, on every page, rather than in one place. What does get its own lesson is their traffic laws: PEMDAS.

Phase 3 — Parts of the Whole (Fractions & Decimals)

Where we bridge the gap between counting and measuring.

- **What Is a Fraction?** — parts of a whole: pizza slices, tool measurements, hours of the day. (*Lesson 3*)
- **Equivalent Fractions** — why $\frac{1}{2}$ is the same as $\frac{2}{4}$ or $\frac{50}{100}$. (*Lesson 4*)
- **Comparing, Simplifying & Operating with Fractions** — the working skills. (*Lessons 5–7*)

- **Decimal Basics & Operating with Decimals** — connecting decimals to money and place value. (*Lessons 8-9*)
- **The Conversion Triangle** — fractions $\leftrightarrow$ decimals $\leftrightarrow$ percents. (*Lesson 10*)

Phase 4 — Relationships & Comparisons

How numbers talk to one another.

- **Percentages** — “per 100,” and how it shows up in taxes, tips, and discounts. (*Lesson 11*)
- **Ratios** — comparing two quantities (2 cups of water for every 1 cup of rice). (*Lesson 12*)
- **Proportions** — solving for the unknown when two ratios are equal. (*Lesson 13*)

Phase 5 — Powers & Roots

- **Positive & Negative Numbers** — which way on the number line. (*Lesson 15*)
- **Exponents** — repeated multiplication, and its nine rules. (*Lesson 16*)
- **Square Roots** — the way back from an exponent. (*Lesson 17*)
- **Factors & Multiples** — breaking numbers down to their building blocks. (*Lesson 18*)
- **Putting It Together** — a mixed review of the whole roadmap. (*Lesson 19*)

Your Progress Tracker

This is your whole summer on one page — one row for every lesson, in the order they live in the installments. Each time you finish working on a lesson, put a check in the column that's honest for *today* — it can move as you go. Pencil is your friend.

Topic	New to this	Practicing	Got this!
Installment 1 — First Lessons			
Lesson 1 · Place Value & the Power of 10	☐	☐	☐
Lesson 2 · Rounding & Estimation	☐	☐	☐
Lesson 3 · The Big Picture of Fractions	☐	☐	☐
Lesson 4 · Equivalent Fractions	☐	☐	☐
Interlude · The VIPs of Math: Zero & One	☐	☐	☐
Installment 2 — Working With Fractions			
Lesson 5 · Comparing & Simplifying Fractions	☐	☐	☐
Lesson 6 · Adding & Subtracting Fractions	☐	☐	☐
Lesson 7 · Multiplying & Dividing Fractions	☐	☐	☐
Installment 3 — Decimals & the Conversion Triangle			
Lesson 8 · Decimal Basics	☐	☐	☐
Lesson 9 · Operating with Decimals	☐	☐	☐
Lesson 10 · Fractions ↔ Decimals ↔ Percents	☐	☐	☐
Installment 4 — Percentages, Ratios & Proportions			
Lesson 11 · Percentages	☐	☐	☐
Lesson 12 · Ratios	☐	☐	☐
Lesson 13 · Proportions	☐	☐	☐
Installment 5 — Order, Signs, Powers & Roots			
Lesson 14 · Order of Operations (PEMDAS)	☐	☐	☐
Lesson 15 · Positive & Negative Numbers	☐	☐	☐

Topic	New to this	Practicing	Got this!
Lesson 16 · The Rules of Exponents	☐	☐	☐
Lesson 17 · Square Roots	☐	☐	☐
Installment 6 — Building Blocks & Putting It Together			
Lesson 18 · Factors, Multiples, GCF & LCM	☐	☐	☐
Lesson 19 · Putting It Together (mixed review)	☐	☐	☐

All six installments — all nineteen lessons and the Interlude — are ready now. Take them in any order that serves you.