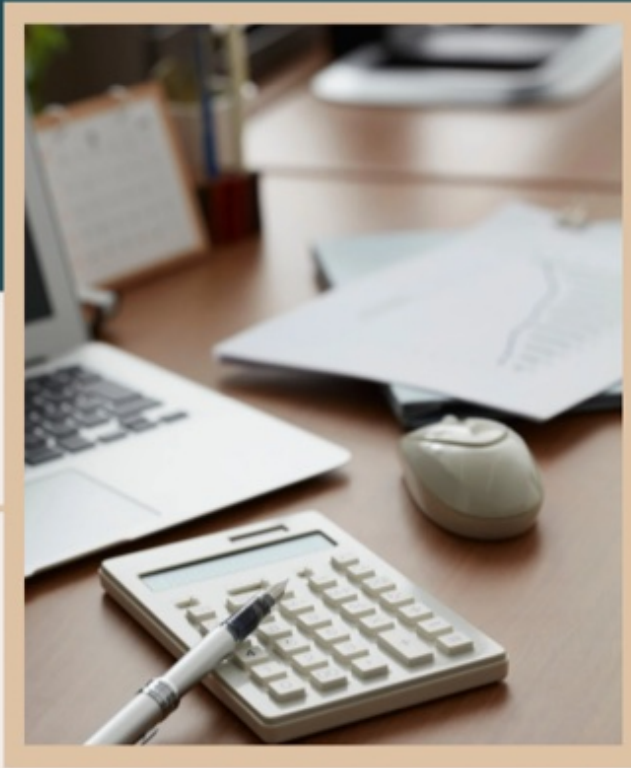


www.noahsandersadvocacy.com

GED PREPARATORY

A COMPREHENSIVE WORKBOOK



Noah Sanders Advocacy

GED PREPARATORY: A Comprehensive Workbook

Noah Sanders Advocacy

Welcome

You picked up this book for a reason. Maybe you want a better job. Maybe you want to go to college or start a training program. Maybe you want to prove something to yourself — or to someone who doubted you.

Whatever your reason, hear this clearly: **you can do this**. The GED is not a test of how smart you are. It is a test of skills — reading, writing, math, reasoning — and skills can be learned at any age, by anyone willing to put in the work. Thousands of people pass the GED every year after years away from school. There is no reason you cannot be one of them.

This workbook walks you through all four GED subjects step by step, in plain language, with practice at every turn. No lectures. No judgment. Just a clear path from where you are to test day.

Let's get to work.

How This Course Works

16 weeks. 8 modules. 25 lessons.

Each lesson teaches one set of skills, walks through examples, and gives you practice questions with answers so you always know where you stand. Each module ends with an assignment, a quiz, and a short essay to lock in what you learned.

You do not have to finish in 16 weeks — go at your pace. But a steady rhythm (about 90 minutes, four or five days a week) is how most successful test-takers do it.

The Four GED Tests

Subject	Time	What to expect
Reasoning Through Language Arts (RLA)	150 minutes	Reading, editing, and a 45-minute essay
Mathematical Reasoning	115 minutes	Two parts; calculator allowed on Part 2
Science	90 minutes	Reasoning with passages, charts, experiments
Social Studies	70 minutes	About 50 questions on history, civics, economics

Each test is scored from **100 to 200**. You need **145** to pass each one. Score **165-174** and you are **College Ready**. Score **175 or higher** and you are **College Ready + Credit** — which can earn you up to 10 college credits.

You take one subject at a time, in any order. Your passing scores are banked — you never lose a subject you already passed.

Grading Scale

Grading Scale: A: 90-100 | B: 80-89 | C: 70-79 | D: 60-69 | F: Below 60

You are graded on effort, understanding, and progress — not on where you started.

Course Schedule

Weeks	Module	Lessons	Assessment
1-2	Module 1: Your GED Game Plan	1.1, 1.2, 1.3	Assignment, Quiz, Essay
3-4	Module 2: Reading to Win	2.1, 2.2, 2.3	Assignment, Quiz, Essay
5-6	Module 3: Writing With Confidence	3.1, 3.2, 3.3	Assignment, Quiz, Essay

Weeks	Module	Lessons	Assessment
7-8	Module 4: Math Foundations	4.1, 4.2, 4.3	Assignment, Quiz, Essay
9-10	Module 5: Math Problem-Solving	5.1, 5.2, 5.3	Assignment, Quiz, Essay
11-12	Module 6: Science Thinking	6.1, 6.2, 6.3	Assignment, Quiz, Essay
13-14	Module 7: Social Studies	7.1, 7.2, 7.3	Assignment, Quiz, Essay
15-16	Module 8: Test Week	8.1, 8.2, 8.3, 8.4	Assignment, Quiz, Essay

What You Need

- This workbook
- A notebook for practice work
- A TI-30XS scientific calculator (the same one allowed on the math test) — practice with the real thing
- About 90 minutes a day, four to five days a week
- Honest effort. That is the whole list.

General Submission Instructions

- Submit your assignment, quiz answers, and essay as separate files (or one combined file clearly labeled) to **noahsandersadvocacy@gmail.com**
- Subject Line Format: [Your Name] - Module [#] - [Assignment Type]
- Example: Jordan Ellis - Module 3 - Quiz
- Name your files: LastName_FirstName_Module#_Type (example: Ellis_Jordan_Module3_Quiz.pdf)
- Accepted formats: PDF, Word (.doc/.docx), or clear photos of handwritten work

A Note on Practice Questions

Every practice question in this book was written for this workbook in the *style* of the GED — not copied from real GED tests. They train the same skills the real test measures. When you are consistently scoring 80% or better on a module's practice, you are ready for that subject's official GED Ready practice test at ged.com.

MODULE 1: Your GED Game Plan (Weeks 1-2)

Lesson 1.1 - What the GED Is and Why It Matters

What Exactly Is the GED?

GED stands for General Educational Development. It is a set of four tests that, when you pass all of them, earns you a high school equivalency credential. That means the state certifies that you have the academic skills of a high school graduate - even if you never finished high school.

Colleges, employers, and the military accept the GED as the equivalent of a high school diploma. It is not a lesser certificate or a participation trophy. The tests are real, the passing score is real, and the credential opens real doors. Millions of adults in the United States hold a GED, and they use it for everything from nursing school to truck driving licenses to promotions at work.

Here is the most important thing to know before anything else: **the GED tests skills you already use in daily life.** Reading a bus schedule, figuring out a tip, understanding a news article, filling out a job application - these are the building blocks the test is built on. You are not starting from zero. You are starting from a life full of experience, and this course will help you turn that experience into test-ready skills.

The Four Subjects at a Glance

The GED has four separate subject tests. You take them one at a time, in any order, on different days if you want. Here is what each one looks like:

- **Reasoning Through Language Arts (RLA): 150 minutes total.** Part I (72 minutes) covers reading, editing, and a 45-minute extended-response essay. Then you get a 10-minute break. Then Part II (65 minutes) continues with more reading and language questions. The essay asks you to read two passages that take opposite sides of an issue and explain which passage makes the stronger argument and why.
- **Mathematical Reasoning: 115 minutes, in two parts.** The test includes a scientific calculator (the TI-30XS) that you can use on Part 2 only, plus a formula sheet with the equations you need. No memorizing dozens of formulas.
- **Science: 90 minutes.** This includes 2 short-answer questions (about 10 minutes each) where you write a short explanation. The science test is mostly about **scientific reasoning** - reading

passages, charts, and experiment results and thinking your way through them. You do not need a science degree.

- **Social Studies: 70 minutes, about 50 questions.** Covers U.S. history, civics and government, economics, and geography. Like science, it is mostly reading and reasoning - interpreting maps, quotes, and documents rather than reciting memorized dates.

The fact that you can take one subject at a time is a huge advantage. Nobody is asking you to sit through a four-hour marathon covering everything at once. You can study for math first, pass it, celebrate, and then move on to science. One win builds the confidence for the next.

How Scoring Works

Every subject is scored from **100 to 200 points**. The score you need to pass each subject is **145**. Here is what the score levels mean:

- **Below 145:** Not passing - yet. You can retake the subject (more on that below).
- **145-164: GED Passing Score.** You passed. You earn your credential with this level.
- **165-174: GED College Ready.** This score says you are ready for college-level coursework without remedial (catch-up) classes.
- **175-200: GED College Ready + Credit.** At this level, some colleges award you **up to 10 college credits** - a real head start on a degree.

The retake policy is straightforward: you get **3 attempts** per subject. If you need a fourth try, you wait **60 days** and then continue. The cost varies by state, roughly **\$30-\$40 per subject**. In many states, you can take the test at an official testing center or **online with a live proctor** watching through your webcam. We will cover test-day strategy in detail in Lesson 1.3.

Worked Example: Reading a Score Report

Meet Denise. She is 34, works as a home health aide, and just took the RLA and Science tests. Her score report looks like this:

- **RLA: 158** - Passed. She cleared 145 with room to spare. Solid pass.
- **Science: 168** - Passed, and hit the College Ready level (165-174). She will not need remedial reading or writing classes if she enrolls in college.

What does this tell Denise? First, she has **two subjects banked** - she never has to take RLA or Science again, no matter how long the rest takes. Second, her Science score shows real

college-level reasoning skills. Third, she still needs Math and Social Studies - and now she knows exactly where to focus.

Now imagine her friend Marcus, who took the Math test and scored **142**. He missed passing by 3 points. Here is the key fact: **this is not a failure - it is information**. His score report will show which topics he missed most, so he knows exactly what to study. He still has 2 more attempts before any waiting period, and a retake costs about the same as the first test. Three points is one or two more questions right. That is a very fixable gap.

What Passing Unlocks

Why do the work? Because the doors a GED opens are not abstract. They are concrete and practical:

- **Jobs.** Many good-paying jobs require a high school diploma or equivalency - warehouse supervisor roles, police and fire departments, the postal service, union apprenticeships, commercial driving, and countless office and healthcare positions. A GED turns “high school diploma required” from a wall into a doorway.
- **Higher pay.** Statistics consistently show that workers with a high school credential earn more than those without one. It is not magic - it is access. The credential gets you into the jobs and promotions that pay better.
- **College and trade school.** Community colleges, technical colleges, and universities accept the GED. So do nursing programs, HVAC and welding certifications, cosmetology schools, and IT training programs. A score in the College Ready range can even let you skip remedial classes, saving you time and tuition money.
- **The military.** The armed forces accept GED holders, and a GED plus qualifying test scores can unlock enlistment bonuses and career paths that require the credential.
- **Respect - including self-respect.** Many GED graduates say the biggest change was how they saw themselves. You will be able to say, truthfully, “I finished.” Your kids, your family, and your employer will see it too.

Myth-Busting: The Stories That Keep People Stuck

Three myths stop more adults from earning their GED than any difficult test question ever could. Let's break each one.

Myth 1: “I am too old.” The GED was designed for adults. The average GED test taker is in their late twenties, and people earn their GED in their 40s, 50s, 60s, and beyond - every single year. There is no age limit and no age penalty. Schools group you by age; the GED does not care. What matters is preparation, not birthdays.

Myth 2: “I was bad at school, so I will be bad at this.” Maybe school was a bad fit for reasons that had nothing to do with your ability: a chaotic home, working to help the family, undiagnosed learning challenges, teachers who gave up on you. The GED is not school. There are no report cards, no attendance records, no teachers judging you. You study on your schedule, at your pace, in your way - and you take each subject when *you* decide you are ready.

Myth 3: “It is too hard for me.” Here is what “too hard” usually means: “I tried before and struggled,” or “I am scared of failing again.” Fear is not evidence. The test is designed so that an adult who studies consistently can pass. The scoring is transparent, the retake policy is generous, and every attempt teaches you something. Millions of adults who once said “it is too hard” now have the credential - because they prepared instead of quitting.

***Think About It:** You have handled rent, raised kids, held jobs, survived hard years. Those things took discipline, problem-solving, and grit - the exact same qualities that pass the GED. School may have measured you by one narrow yardstick. This test measures something broader, and you have been building the raw material for years without knowing it.*

Try It

1. How many subjects are on the GED, and what is the passing score for each one?
2. Put these in order from shortest to longest testing time: Social Studies, Science, Math, RLA.
3. Marcus scored 142 on Math and Denise scored 168 on Science. Who passed, and what does Denise's score level mean?
4. True or false: If you fail a subject on your first try, you have to wait a full year before retaking it.
5. Write two or three sentences: Which myth from the lesson (too old, bad at school, too hard) have you heard most often - from yourself or others - and what would you say to bust it?

Try It Answers: 1. Four subjects, and the passing score is 145 on each one (each subject is scored 100-200). 2. Social Studies (70 min), Science (90 min), Math (115 min), RLA (150 min). 3. Denise passed (168 is above 145) and reached the College Ready level (165-174). Marcus did not pass (142 is below 145), but he missed by only 3 points and still has 2 more attempts before any waiting

period. 4. False. You get 3 attempts per subject before a 60-day waiting period applies. 5. Answers will vary. A strong answer names the myth and counters it with a fact from the lesson (no age limit, the GED is not school, the test is designed for prepared adults and retakes are allowed).

Key Terms

- **GED (General Educational Development):** A set of four tests that earns a high school equivalency credential.
- **High school equivalency credential:** A state-recognized certificate that means you have the academic skills of a high school graduate.
- **RLA (Reasoning Through Language Arts):** The GED's reading, writing, and language test (150 minutes, includes an essay).
- **Extended-response essay:** The 45-minute RLA essay where you compare two passages on an issue and explain which makes the stronger argument.
- **College Ready (165-174):** A GED score level showing readiness for college-level coursework without remedial classes.
- **College Ready + Credit (175+):** A GED score level that can earn up to 10 college credits at some colleges.
- **Proctored:** Supervised. An online proctored test means a live proctor watches through your webcam while you test.
- **Scientific reasoning:** The ability to interpret passages, charts, and experiments - the core skill tested on the Science test.

Reflection Questions

1. Which of the four subjects feels most intimidating to you right now, and which feels most comfortable? Why?
2. Write down three doors you want your GED to open (a job, a school, a promotion). Be specific.
3. Which myth - too old, bad at school, or too hard - has held you back the most? What evidence from this lesson challenges it?
4. If Denise were your friend, what would you tell her after seeing her score report?

Lesson 1.2 - Building Your Study Plan

Know Where You Stand: The Honest Self-Check

Before you study a single page, do a diagnostic self-check. This is not a test you can fail. It is a map-making exercise: you are figuring out where you are right now so your study plan goes to the right places.

Take a notebook (or your phone) and rate yourself in each subject from 1 to 5:

- **1 = “I am starting from scratch here.”**
- **3 = “I am okay but rusty.”**
- **5 = “This is my strength.”**

Now write one honest sentence for each subject about *why* you gave that rating. Not “I am dumb at math” - that is a label, not information. Instead: “I can add and subtract fine, but fractions and word problems confuse me.” The second version tells you exactly what to study. Be specific, and be kind to yourself.

Here is what the ratings tell you about where to spend your time:

- **Subjects rated 1 or 2:** These get the most study hours. This is where you start - not because you are behind, but because this is where the biggest gains live. Going from a 1 to a 3 in math is worth more points than going from a 4 to a 5 in reading.
- **Subjects rated 3:** Steady maintenance study. Review, practice, and build confidence. Many people pass these subjects with a few weeks of consistent practice.
- **Subjects rated 4 or 5:** Less study time needed, but do not skip them. Take the practice test early for these subjects - you might be ready to take the real test sooner than you think, and banking an early pass builds momentum.

Worked Example: James’s Self-Check

James, 41, works the night shift at a distribution center. Here is his self-check:

- **RLA: 3.** “I read every day - news, my kid’s school papers - but I have not written an essay since high school.”
- **Math: 2.** “I can do money math and measurements at work, but algebra and fractions trip me up.”
- **Science: 2.** “Science class was a long time ago. I am nervous about the charts and graphs.”
- **Social Studies: 4.** “I watch the news and follow politics. I know a lot of history from documentaries.”

James's plan is now obvious: Math and Science get the most hours, RLA gets steady essay practice, and Social Studies gets a quick review and an early practice test. He does not need to study everything equally. Notice something else: James's "weaknesses" are not blank slates. He does money math, measurements, and reading every day - he has foundations and just needs to connect them to the test format.

The 90/4 Rhythm: Ninety Minutes, Four Days a Week

Here is the study schedule that works for busy adults: **90 minutes a day, 4 days a week**. That is 6 hours a week - less time than most people spend scrolling their phones, but it is structured, focused time.

Why 90 minutes? Focused sessions of about an hour and a half hit the sweet spot for adult learners. Shorter sessions feel like you barely started, and longer sessions lead to burnout and skipped days - and skipped days are the real enemy. **Consistency beats intensity**. Ninety minutes four times a week, every week, will carry you further than a heroic five-hour Saturday followed by two weeks of nothing.

Why 4 days instead of every day? Because rest matters. Your brain consolidates learning during rest - sleep literally strengthens new skills. Four study days and three rest days also make the plan sustainable around work, kids, and life. A plan you can keep for three months beats a perfect plan you abandon in week two.

How to split your 90 minutes: - **Minutes 1-10: Warm up.** Review yesterday's notes or redo one problem you missed. This wakes up your brain and connects today's session to yesterday's. - **Minutes 10-70: New learning.** Work through one lesson or one skill at a time - read the explanation and practice that single skill. One skill per session, not five. - **Minutes 70-90: Practice and log.** Do practice questions on what you just learned, check your answers, and write your progress in your log (see below).

Pick your four days and your time slot, and **protect them like a work shift**. Tell your family. Put it on your calendar. Ninety minutes of a quiet house at 5 a.m. counts. A lunch break plus an evening hour counts. There is no magic time - only the time you will actually keep.

A Study Space on Any Budget

You do not need a fancy home office. You need a place where your brain knows it is time to work. Here is how to build one at any budget:

- **Free:** A kitchen table after dinner, a corner of your bedroom, or a quiet table at the public library. Libraries are underrated study headquarters: free, quiet, with Wi-Fi - and many GED test takers do their best work there.
- **A few dollars:** A notebook dedicated to this course (one per subject, or one divided with tabs), a set of pencils, and a folder for printouts. Dollar stores carry all of this.
- **Nice to have:** Headphones for video lessons, a simple timer (your phone works), and a basic scientific calculator so you can practice with the real thing before test day.

Set up your space the same way each time: materials out, phone on silent and face-down (or in another room if you can), water nearby. This routine signals your brain that it is study time. It sounds small, but rituals work - athletes, musicians, and surgeons all use them to get focused fast.

Tell the people in your house what you are doing and why it matters. Most people will respect the boundary once they understand the goal. "I am studying for my GED from 7 to 8:30 on Monday through Thursday" is a clear, respectable request. You are investing in your family's future, and they deserve to know that.

The Progress Log: Your Proof of Growth

Memory lies. It will tell you "I am not getting anywhere" on week three even when you are. A progress log is your defense against that lie - written proof that you are improving.

Keep it simple. Each study day, write four lines:

1. **Date and subject.**
2. **What I studied** (one sentence: "Fractions - adding and subtracting with different denominators").
3. **Practice score** (for example: "8 out of 10 on the practice set").
4. **One thing I learned or got better at.**

Once a week, read back through the week's entries. You will see the line moving upward: practice scores climbing, new topics appearing, old confusions disappearing. On the hard days - and there will be hard days - open your log and look at how far you have come. Progress you can see is motivation you can use.

Knowing When You Are Ready: The GED Ready Practice Test

Here is the question every student asks: "How do I know when I am actually ready to take the real test?" The answer is the **GED Ready practice test** - the official practice test made by the same

people who make the real GED, and the most accurate predictor available. Take it when your progress log shows a few weeks of steady improvement in a subject, and aim for this:

- **If your GED Ready score is comfortably above 145** (say, 150 or higher), you are very likely ready to schedule the real test for that subject. Do not wait for perfection - passing is passing, and every banked subject is one fewer to study.
- **If your GED Ready score is just below 145** (140-144), you are close. Focus your next two weeks of study on the specific topics the practice test flagged, then take another practice test or schedule the real one. You are one or two questions away.
- **If your GED Ready score is well below 145**, keep studying. That is not bad news - it is useful information. Your score report shows exactly which topics to target, and your progress log shows you are moving. Keep going.

The smartest strategy: **take the GED Ready test for your strongest subject first.** Banking an early pass gives you confidence and proof that the system works - for you, specifically. Then roll that momentum into the next subject.

Think About It: *A study plan is a promise to your future self. Every 90-minute session is a small deposit in an account that pays out in a credential, a promotion, a college acceptance. You do not need to feel motivated every day. You just need to keep the appointment. Motivation is a mood; a schedule is a commitment. Commitments change lives.*

Try It

1. Rate yourself 1 to 5 in each of the four GED subjects, and write one honest sentence for each explaining your rating.
2. A friend says, "I am going to study 6 hours every Saturday until I pass." Based on this lesson, what is the risk of that plan, and what would you suggest instead?
3. Your progress log shows three weeks of math practice scores: 5/10, 6/10, 7/10, then 8/10. What does this tell you?
4. You take the GED Ready practice test for Social Studies and score 152. What should you do next?
5. List three things you will put in your study space (free or cheap) and the four days and time you will protect for studying.

Try It Answers: 1. Answers will vary. A strong answer gives a number and a specific reason for each subject - for example, "Math: 2. I can do money math, but fractions and word problems confuse me" - not a vague label like "I am bad at math." 2. The risk is burnout and skipped weeks; a marathon session is hard to sustain, and missed Saturdays mean zero study time. Suggest the 90/4 rhythm instead: 90 minutes, 4 days a week, every week - consistency beats intensity. 3. It shows steady, real progress - exactly what the log is for. You are improving about one point per week, which is strong evidence the studying is working. 4. Schedule the real test. A 152 is comfortably above 145, so she is likely ready. Passing is passing - bank the subject and move on. 5. Answers will vary. A strong answer names concrete items (notebook, pencils, library table, phone timer, water) and a specific schedule (for example, "Mon, Tue, Thu, Fri, 7:00-8:30 p.m.").

Key Terms

- **Diagnostic self-check:** An honest assessment of your current skill level in each subject, used to guide your study plan.
- **The 90/4 rhythm:** The recommended study schedule: 90 minutes a day, 4 days a week.
- **Consistency beats intensity:** The principle that regular, sustainable study sessions outperform occasional marathon sessions.
- **Warm up:** The first 10 minutes of a study session, spent reviewing yesterday's material.
- **Progress log:** A simple written record of each study session: date, topic, practice score, and one thing learned.
- **GED Ready:** The official practice test, made by the GED test makers, used to judge when you are ready for the real test.
- **Banked subject:** A subject you have passed. You never have to take it again, no matter how long the rest takes.

Reflection Questions

1. Look at your self-check ratings. Which subject deserves the most study hours, and what specific skills will you start with?
2. What is your biggest obstacle to keeping a 4-day study schedule (work, kids, energy)? How can you work around it?
3. Where will your study space be, and what will your start-of-session routine look like?

4. How will you celebrate when you bank your first subject? (Seriously - plan the reward now. You will earn it.)

Lesson 1.3 - Test-Day Strategy

Where and How You Take the Test

The GED is a **computer-based test**. There is no paper version to bubble in by hand. You read passages on a screen, click your answers, type your essay, and use an on-screen calculator when the test allows it. If you can use a smartphone or browse the internet, you already have the computer skills you need. The testing software is deliberately simple: big buttons, clear instructions, and a tutorial at the start.

You have two options for where you test:

- **An official GED testing center.** A supervised computer lab, usually at a community college or adult education center. You check in, store your belongings in a locker, and take the test at an assigned computer in a quiet room. Many first-time test takers prefer this because there are no distractions and no tech worries - you just show up.
- **Online with a live proctor.** In many states, you can test from home while a real person supervises through your webcam and microphone. You will need a quiet, private room, a computer with a webcam, and stable internet, plus a quick room scan with your camera before you begin.

Whichever you choose, **practice the format before test day**. The GED website offers a free tutorial showing the testing software - how to flag questions for review, how the calculator works, how to type the essay. Spend 30 minutes with it so the format feels familiar on test day.

Time Management: Your Minutes Are Money

Every subject gives you a fixed amount of time. Here is how to spend it wisely:

- **RLA (150 min):** About 20-25 minutes on the reading and editing questions, a full 40-45 minutes on the essay. Take the 10-minute break fully: stand up, drink water, breathe. Part II (65 min): roughly 2-3 minutes per question; if one eats more than 4 minutes, flag it and move on.
- **Math (115 min, two parts):** About 1.5 to 2 minutes per question. Do the questions you know first. On Part 2, lean on the calculator and formula sheet instead of doing messy arithmetic in your head.

- **Science (90 min):** Roughly 2-3 minutes per question, plus about 10 minutes for each of the 2 short answers. Do not let the short answers steal time from questions you can answer quickly.
- **Social Studies (70 min, about 50 questions):** The fastest-paced test - about 1 to 1.5 minutes per question. Read the question *first*, then the passage; most answers are right there in the text.

Three rules for all four tests:

1. **First pass: answer what you know.** Move steadily through the test, answering everything you can do confidently. Flag the hard ones.
2. **Second pass: work the flagged questions** with your remaining time, with fresh eyes and no panic.
3. **Never leave a question blank.** There is **no penalty for wrong answers** on the GED. A blank is a guaranteed zero; a guess is a free lottery ticket.

Worked Example: Eliminating Wrong Answers

Let us walk through a realistic GED-style question together. This one is written for this course (not a real GED question):

Question: A store sells notebooks for \$3.50 each. Maria buys 6 notebooks and pays with a \$25 bill. How much change does she receive?

- A) \$4.00
- B) \$21.00
- C) \$4.50
- D) \$25.00

6 notebooks at \$3.50 each = \$21.00. She paid \$25, so her change is $\$25 - \$21 = \$4.00$. The answer is A.

Choice D (\$25.00) is the amount she *paid* - a trap for people who rush. Choice B (\$21.00) is the *cost*, not the change. Eliminate both, and you are choosing between A and C: a 50-50 shot instead of a 25 percent guess, with no penalty if you are wrong.

Now watch the trap answers in a reading-style question:

Question: According to the passage, the author believes exercise helps mental health mainly because...

- A) gyms are profitable businesses

- B) physical activity reduces stress hormones
- C) the author enjoys running marathons
- D) doctors recommend 8 hours of sleep

Even without the passage, you can eliminate: A is about business, not health. C is about the author's hobby, not a mechanism. D is about sleep, not exercise. That leaves B - the only answer explaining *how* exercise helps mental health. The elimination mindset: **you do not always need to know the right answer; you often just need to recognize the wrong ones.**

Educated Guessing: Your Free Points

Guessing is not cheating - it is strategy. But do not guess blindly when you can guess smart:

- **Eliminate first, then guess.** Every wrong answer you cross out raises your odds. Going from 4 choices to 2 doubles your chances.
- **Watch for absolutes.** Answers with words like "always," "never," "all," or "none" are often wrong - real life (and test writers) rarely deal in absolutes.
- **Match the question's language.** If it asks for a cause, the answer explains *why*, not *what*. If it asks for the BEST summary, the answer covers the whole passage, not one detail.
- **Trust your first instinct on review.** Change a flagged answer only if you find a real reason - not just a nervous feeling. First instincts beat anxiety more often than you would think.
- **On math, estimate.** If the answers are 4, 40, 400, and 4000, you often do not need exact math - just figure out the rough size of the answer.

Managing Nerves: Your Body Is on Your Team

Test anxiety is normal, especially when the test matters. The goal is not to eliminate nerves - it is to keep them from running the show. Here is your toolkit:

- **The 4-4-4 breath.** Before the test and during the break: breathe in for 4 counts, hold for 4, breathe out for 4, three times. It physically slows your heart rate - that is how your nervous system works, not wishful thinking.
- **Reframe the feeling.** A racing heart and buzzy hands are your body gearing up to perform, the same feeling athletes get before a game. Tell yourself: "This is my body getting ready." That single reframe has been shown to improve test performance.

- **Use your break.** Take the RLA 10-minute break fully: stand, stretch, drink water. For the other subjects, if you finish a section early, close your eyes for 30 seconds and breathe before continuing.
- **Talk to yourself like a coach, not a critic.** When a hard question appears, replace “I am going to fail this” with “This one is hard - flag it and keep moving.”
- **Prepare the night before.** Lay out your clothes, pack your bag, set two alarms, and get real sleep. Cramming until 2 a.m. is the fastest way to turn manageable nerves into a meltdown. Trust the weeks of preparation you already did.

What to Bring (and What NOT to Bring)

Bring: - **A valid, government-issued photo ID.** Driver’s license, state ID, passport, or military ID - and check that it is not expired. No ID, no test. - **Your appointment confirmation** (printed or on your phone, per your testing center’s instructions). - **Layers.** Testing rooms are often cold, and comfort keeps you focused. - **A snack and water for before/after.** You cannot eat during the test, but fueling up beforehand keeps your brain sharp.

Do NOT bring (into the testing room): - **Your phone.** It stays in a locker or outside the room. If it rings or buzzes during the test, you can be dismissed - so power it fully off, not just silent. - **Notes, books, or study guides.** The test is closed-book. Do not risk an accusation of cheating over a forgotten flashcard in your pocket. - **Your own calculator.** The testing center provides the on-screen calculator (or an approved handheld for the math section, depending on the center). Bringing your own can get it confiscated. - **Watches with internet, earbuds, or headphones** (unless the center provides them for audio questions).

For **online proctored testing**, you need your ID, a clean desk, and a closed door. The proctor will have you show the room with your webcam, and no one else can be in the room during the test. Treat it exactly like a testing center visit - the rules are just as strict.

***Think About It:** Test day is not the day you prove you are smart. It is the day you collect what your preparation already earned. The studying did the hard work; test day is just the harvest. Walk in knowing that every 90-minute session, every practice question, every log entry was a payment - and today you get to cash the check.*

Try It

1. Name the two places you can take the GED, and describe one requirement for the online option.
2. On the Social Studies test (70 minutes, about 50 questions), about how much time should you spend per question? What should you do if a question is taking much longer?
3. True or false: You should skip questions you are unsure about and leave them blank, because wrong answers lower your score.
4. Write a test-day morning plan in 3-4 sentences: when you will wake up, what you will bring, and one nerves-management technique you will use.
5. You are stuck on a multiple-choice question with four options. You can eliminate two wrong answers but are unsure between the last two. Explain, using this lesson, what you should do and why.

Try It Answers: 1. An official GED testing center (a supervised computer lab) or online with a live proctor. The online option needs a quiet private room, a computer with webcam, stable internet, and a room scan before starting. 2. About 1 to 1.5 minutes per question. If one is taking much longer, flag it and move on, then come back on a second pass. 3. False. There is no penalty for wrong answers, so you should never leave a question blank - always answer, even if you are guessing. 4. Answers will vary. A strong plan names a wake-up time that allows an unrushed morning, lists ID plus confirmation and layers, and names a specific technique (4-4-4 breathing, the 10-minute break, or the reframe). 5. Guess between the two remaining options. With two choices eliminated, the odds are 50-50, and since there is no penalty for wrong answers, guessing costs nothing and can only help. Never leave it blank.

Key Terms

- **Computer-based test:** A test taken on a computer rather than on paper, with answers clicked or typed.
- **Testing center:** An official supervised location (often a college or adult education center) where the GED is administered.
- **Live proctor:** A real person who supervises an online test through your webcam and microphone.
- **Flag (a question):** To mark a question in the testing software so you can easily return to it later.
- **Second pass:** Returning to flagged or skipped questions with your remaining time after answering everything you know.
- **No-penalty guessing:** The GED scoring rule that wrong answers do not subtract points - so guessing is always better than leaving a blank.

- **Elimination:** Crossing out clearly wrong answer choices to improve your odds before guessing.
- **4-4-4 breath:** A calming technique: breathe in 4 counts, hold 4, breathe out 4.

Reflection Questions

1. Which testing option - testing center or online proctored - fits your life better? What would you need to arrange for it?
2. Which subject's time limit worries you most? What is your personal plan for pacing on that test?
3. What is your inner critic's favorite test-day line ("You are going to fail," "Everyone else is smarter")? Write the coach's reply you will use instead.
4. What is one thing you can do the night before test day to make the morning calm and smooth?

Module 1 Assignment

Title: My GED Game Plan

This assignment turns what you learned in Module 1 into a real, working plan - the one you will actually follow for the rest of this course. It has three parts, and you should write it up as one document (one to two pages is plenty).

Part 1 - Diagnostic self-rating. Rate yourself from 1 to 5 in each of the four GED subjects (RLA, Math, Science, Social Studies) and write one honest, specific sentence for each explaining your rating. Then list the subjects in the order you plan to study and test them, starting with your strongest subject so you can bank an early win. Explain your order in two or three sentences.

Part 2 - Your 4-day study schedule. Choose your four study days and your 90-minute time slot, and write them down as a weekly calendar (for example: Monday, Tuesday, Thursday, Friday, 7:00-8:30 p.m.). Then describe your study space: where it is, what materials you will keep there, and what your start-of-session routine will be (phone on silent, materials out, water nearby). Be realistic - this schedule has to survive your actual life, not an ideal one.

Part 3 - Your progress log setup. Create your log (a notebook page, a phone note, or a simple document) with the four columns from Lesson 1.2: date and subject, what you studied, practice score, and one thing you learned. Fill in the first row with your self-check results as your starting point. At the bottom, write one sentence about what score you will aim for on your first GED Ready practice test and when you plan to take it.

Module 1 Quiz

1. How many subjects are on the GED? A) 3 B) 4 C) 5 D) 6
2. What is the passing score for each GED subject? A) 100 B) 125 C) 145 D) 165
3. Which score range means “College Ready”? A) 145-164 B) 165-174 C) 175-200 D) 100-144
4. How long is the RLA test in total? A) 90 minutes B) 115 minutes C) 70 minutes D) 150 minutes
5. On the Math test, when is the calculator allowed? A) On both parts B) On Part 2 only C) Never - no calculator is allowed D) Only during the last 10 minutes
6. Under the retake policy, how many attempts do you get per subject before a 60-day waiting period applies? A) 1 B) 2 C) 3 D) Unlimited
7. What is the recommended study rhythm from Lesson 1.2? A) 6 hours every Saturday B) 30 minutes every day with no rest days C) 90 minutes a day, 4 days a week D) 3 hours twice a week
8. What is the GED Ready test used for? A) To replace one of the four GED subjects B) To judge when you are ready to take the real test for a subject C) To apply for financial aid D) To practice using the testing center lockers
9. True or false: On the GED, wrong answers subtract points from your score, so you should leave hard questions blank. A) True B) False
10. Which of the following is allowed in the testing room? A) Your phone, on silent B) Your own calculator C) A valid government-issued photo ID D) Study notes in your pocket

Module 1 Quiz Answer Key: 1. B - The GED has four subjects: RLA, Math, Science, and Social Studies. 2. C - 145 is the passing score on each subject (each scored 100-200). 3. B - 165-174 is the College Ready level; 175+ adds possible college credit. 4. D - RLA is 150 minutes total, including the 45-minute essay and a 10-minute break. 5. B - The TI-30XS scientific calculator is allowed on Part 2 of the Math test only. 6. C - You get 3 attempts per subject, then a 60-day wait before trying again. 7. C - 90 minutes a day, 4 days a week: consistency beats intensity. 8. B - The GED Ready is the official practice test used to decide when you are ready for the real thing. 9. B (False) - There is no penalty for wrong answers, so never leave a question blank. 10. C - A valid government-issued photo ID is required; phones, personal calculators, and notes are not allowed in the testing room.

Module 1 Essay

Prompt: “Why I Am Earning My GED and What Comes Next” (300-500 words)

Tell your story. Why are you earning your GED now, at this point in your life? What doors do you want it to open - a specific job, a college or training program, a promotion, something for your family? Describe one obstacle you have faced (or expect to face) on the way there and how you plan to get past it. End with a picture of your life one year after you earn the credential: what does a normal Tuesday look like for you then? Write honestly and in your own voice - this essay is for you as much as it is for this course.

Module 1 Submission Instructions

Submit your assignment, quiz answers, and essay as separate files (or one combined file clearly labeled) to **noahsandersadvocacy@gmail.com** with the subject line: [Your Name] - Module 1 - [Assignment Type]. See General Submission Instructions for file naming and format.

MODULE 2: Reading to Win - RLA Reading

(Weeks 3-4)

Welcome to the reading half of the RLA test. In Module 1 you learned how the test is built. Now you learn how to beat it at its own game: reading passages on screen, pulling out what matters, and answering questions with confidence. The three lessons in this module build on each other. Lesson 2.1 gives you active-reading strategies. Lesson 2.2 teaches you to back every answer with evidence and draw careful inferences. Lesson 2.3 shows you how to analyze arguments - the skill the RLA essay is built on.

Lesson 2.1 - Active Reading Strategies

Your Brain Is the Best Test Tool You Have

On the GED Reasoning Through Language Arts test, every reading question puts the passage right there on the screen. You do not need outside knowledge. That means reading questions test one thing: can you pull the right information out of a passage under time pressure? Most people miss reading questions not because they cannot read, but because they read the way they read a social media feed - start at the top, drift through, and hope something sticks. The test rewards a different approach: active reading. Active reading means reading with a mission: you know what you are looking for, you mark the important parts, and you check your understanding in small pieces.

Before we start, here is exactly what you are training for. The RLA test is 150 minutes total. Part I is 72 minutes: reading and editing questions plus the 45-minute extended-response essay, where you compare two passages on an issue and argue which one makes the stronger argument and why. Then you get a 10-minute break. Part II is 65 minutes. Each GED subject is scored from 100 to 200. A score of 145 passes. A score of 165-174 earns the College Ready label. A score of 175 or higher earns College Ready plus Credit. Reading well is how you move from passing to College Ready, because the strategies in this module feed the essay and the editing questions too.

Preview Before You Read

Strong readers scout a passage before reading it, the way you would scout a building before walking in. Take 30 to 60 seconds to preview:

1. Read the title or headline, if there is one. It tells you the topic and sometimes the author's angle.
2. Read the first paragraph (or the first two sentences). It usually holds the main idea or the setup.
3. Read the last paragraph (or the final two sentences). It usually holds the conclusion, the author's judgment, or a call to action.
4. Glance at anything in between: subheadings, bolded words, lists, numbers. These are signposts.

Why does this work? A preview gives you a mental map: you know the topic, the author's position, and where the passage is headed. When you then read from the top, every paragraph has a place to land. You will also answer main-idea questions faster, because the main idea often lives in the first or last paragraph - which you have already read twice.

Annotate Like a Detective

The GED is taken on a computer, and you can highlight text on screen. But highlight with a plan, not a panic. Good annotating has three rules:

1. Highlight main ideas, not every fact. If you highlight half the passage, you highlighted nothing. Aim for one or two highlights per paragraph.
2. Highlight names, dates, and numbers. Test questions love to ask about specific details, and a highlight lets you jump back in seconds instead of re-reading.
3. Highlight words that show attitude or direction: "however," "surprisingly," "unfortunately." Many questions hide in these transition and tone words.

Think of yourself as a detective marking a map. After each paragraph, ask: "If I had to explain this paragraph in one sentence, what would I say?" Then highlight the sentence that matches your answer.

Main Idea vs. Supporting Details

Almost every GED passage has one main idea and several supporting details. The main idea is the point the author wants you to take away. The supporting details are the evidence, examples, and statistics that back it up. A common mistake is confusing a vivid detail for the main idea. If a passage about community gardens mentions that someone's tomatoes won a prize at the county fair, the prize is a detail, not the point. The point is probably that community gardens bring neighbors together or help families save money.

Here is a quick test for any answer choice that claims to be the main idea. Ask: “Does the rest of the passage support this?” If the choice is a detail, it will only match one paragraph. If it is the main idea, nearly every paragraph connects to it. Also watch for choices that are true but too narrow (a detail dressed up as the point) or too broad (a point the passage never proves). The correct main idea fits the passage like a lid fits a pot: not too small, not too big.

Chunking Long Passages

Long passages scare people. The trick is to stop treating them as long. Break the passage into chunks of two to three paragraphs. After each chunk, pause and summarize it in your own words - just a short sentence in your head, like “This part explains why the program started” or “This part gives two problems with the program.” You do not need to write anything down. Just make the summary before moving on.

Chunking does three things. First, it keeps your focus from fading in paragraph five. Second, it builds the passage’s structure in your memory, so when a question asks about “the author’s second reason,” you know which chunk holds it. Third, it turns one scary 600-word passage into three manageable 200-word passages.

Read the Questions First

This is the strategy that surprises people most. Before reading the passage, skim the questions - not to answer them, but to learn what the test cares about. If a question asks about the author’s tone, you will read with your ear tuned to word choice. If a question asks for a specific detail about costs, you will notice the paragraph with dollar figures. Reading the questions first turns your brain into a filter: important information pops out instead of blending in.

One caution: do not pick answers before reading. Some students glance at a question, settle on an answer, and then read only for proof of their guess. That is working backward. Use the questions to guide your attention, then read the passage fairly, then answer. Some questions - like “What is the main idea?” - still need the whole passage. Previewing the questions just means you will not be reading blind.

Worked Example: Putting It All Together

Let us watch these strategies work on a short passage.

Passage: “Rosa Alvarez never planned to run a food pantry. Three years ago, she noticed that several children in her apartment complex were going to school hungry. She started by leaving bags of rice and beans by her neighbors’ doors. Within months, word spread, and donations began arriving from local stores. Today, her pantry serves over 200 families a month. Alvarez says the hardest part is not collecting food - it is convincing people that asking for help is not a weakness. ‘Pride keeps more shelves empty than poverty does,’ she says. Local officials have praised her work, but Alvarez insists the real heroes are the volunteers who show up every Saturday morning.”

Step 1 - Preview. The first sentence sets up a surprise (she never planned this). The last sentence points to the volunteers. The passage is about Alvarez’s unexpected pantry work and the people behind it.

Step 2 - Questions first. Suppose the question asks: “What does Alvarez identify as the biggest challenge of running the pantry?” Now you know to watch for a challenge as you read.

Step 3 - Read and annotate. You highlight “The hardest part is not collecting food” and her quote about pride.

Step 4 - Answer. The answer is that convincing people to ask for help - pride - is the biggest challenge. You found it without re-reading the whole passage.

Try It

Read the passage, then answer the questions.

Passage: “When Marcus Webb lost his job at the warehouse, he decided to learn a trade instead of waiting for another opening. He enrolled in an evening welding program at the community college while working part-time at a hardware store. The schedule was brutal: classes ran from 6 to 10 at night, and he studied on his lunch breaks. Eighteen months later, Webb earned his certification and was hired by a manufacturing company at nearly double his old pay. He now mentors other students in the program. ‘Nobody handed me a shortcut,’ Webb says. ‘I just decided that two years of hard evenings was better than two years of hoping.’”

1. Which sentence best states the main idea of the passage? A. Marcus Webb worked part-time at a hardware store. B. Webb’s evening classes ran from 6 to 10 at night. C. By choosing training over waiting, Webb changed his career and his income. D. Manufacturing companies pay more than warehouses.
2. According to the passage, what did Webb do while attending the welding program? A. He worked part-time at a hardware store. B. He mentored other students. C. He collected unemployment

benefits. D. He moved to another city.

3. (Ordering) Put these events from Webb's story in the order they happened. Write the letters in order: A. Webb earned his welding certification. B. Webb lost his warehouse job. C. Webb began mentoring students. D. Webb enrolled in the evening welding program.
4. What can you infer about Webb's attitude from his quote at the end? A. He believes luck matters more than effort. B. He believes steady effort beats waiting and hoping. C. He regrets not finishing college earlier. D. He thinks the program was too easy.
5. Short written: In one or two sentences, explain why the detail about studying on lunch breaks supports the main idea.

Try It Answers: 1. C - Choices A and B are supporting details, and D is a claim the passage never makes. C captures the whole story: the choice, the training, and the result. 2. A - The passage states he worked part-time at a hardware store during the program. He mentored students only after finishing. 3. B, D, A, C - He lost the job, enrolled in the program, earned certification, then mentored others. 4. B - "Two years of hard evenings was better than two years of hoping" directly contrasts effort with waiting. 5. Sample answer: The lunch-break studying shows Webb's commitment to finishing, which supports the main idea that choosing training and working hard changed his life.

Think About It: *You have already read thousands of pages in your life - job applications, rental agreements, school notices, news stories. The GED is not asking you to become a different kind of reader. It is asking you to use skills you already have, on purpose, under a timer. Trust the reader you already are.*

Key Terms

- **Active reading:** Reading with a purpose: previewing, questioning, and marking a text to find and remember key information.
- **Previewing:** Scanning a title, first paragraph, and last paragraph before reading to build a mental map of the passage.
- **Annotating:** Marking a text (such as highlighting on screen) to flag main ideas, key details, and attitude words.
- **Main idea:** The central point of a passage; what the author most wants the reader to understand.
- **Supporting details:** Facts, examples, and explanations that back up the main idea.

- **Chunking:** Breaking a long passage into small sections and summarizing each one before moving on.
- **Transition words:** Words like “however,” “therefore,” and “for example” that signal how ideas connect.
- **Tone words:** Words that reveal the author’s attitude, such as “unfortunately” or “remarkably.”

Reflection Questions

1. Which of the five strategies in this lesson feels most natural to you already, and which feels hardest?
2. Think of a long document you have had to read in real life (a lease, a manual, a benefits form). How would previewing and chunking have helped?
3. Why do you think reading the questions first helps, even though you cannot answer them until you read the passage?
4. What is one reading habit you want to change before test day?

Lesson 2.2 - Evidence and Inference

What the Text Says vs. What It Implies

Every passage on the GED says some things directly and suggests other things without stating them. The direct statements are explicit: “The program served 500 families.” The suggestions are implicit: if a passage says a waiting list grew from 50 to 300 families in one year, it implies demand is rising fast, even though those exact words never appear. GED questions test both. Some ask what the text states. The harder ones ask what the text implies - and those are inference questions.

An inference is a logical conclusion drawn from evidence in the text. Think of it as the text plus your thinking, where your thinking is only allowed to go one small step. The passage gives you the facts; you connect them. What you may not do is add your own opinions, outside knowledge, or guesses about what is “probably” true in real life. On the GED, the only world that matters is the world of the passage. If the passage does not say it or clearly imply it, it does not count - no matter how true it feels to you.

“Which Detail Supports This?”

The GED constantly asks questions like: “Which detail from the passage best supports the claim that the program is growing?” or “Which sentence provides evidence for the author’s argument?” These are evidence questions, and they reward the annotating habit from Lesson 2.1. When you highlighted main ideas and key details as you read, you were building an evidence map without realizing it.

To answer an evidence question, first get clear about the claim. Then test each answer choice against it: does this detail actually prove the claim, or does it just sound related? A detail about the program’s history does not prove it is growing. A detail showing this year’s numbers are double last year’s does. Watch out for choices that are true statements from the passage but do not support the claim in the question. The test loves that trap: the detail is real, but it is the wrong evidence.

A useful habit: cover the answer choices, find the evidence in the passage yourself, and then look for the choice that matches what you found. That way the choices cannot steer you toward a tempting but wrong detail. Let the passage pick the answer, not the other way around.

Drawing Inferences Without Adding Your Own Opinions

Here is the golden rule of inference questions: the correct answer must be supported by the passage, and it must not go further than the evidence allows. Imagine the passage as a fenced yard. The correct inference stays inside the fence. A wrong answer jumps over it.

Consider this mini-passage: “After the factory closed, downtown storefronts began to empty. The diner that had served breakfast for forty years shut its doors last spring.” What can you infer? That the factory closing hurt local businesses - that stays inside the fence, because the passage links the closing to emptying storefronts and the diner shutting down. What can you not infer? That the factory workers were lazy, that the town will never recover, or that the diner had bad food. None of that is in the passage. Those are opinions and guesses, not inferences.

The line between a good inference and a guess is evidence. Ask yourself: “Can I point to the exact sentences that lead me to this conclusion?” If yes, it is an inference. If you are relying on what you personally believe about factories, diners, or small towns, it is an opinion - and on the GED, opinions do not score points.

Common Traps in Inference Questions

Inference questions have favorite wrong answers. Learn to spot them:

1. **Too extreme.** The passage says a policy “helped some families,” and a choice says it “solved poverty forever.” Words like “always,” “never,” “completely,” and “everyone” are red flags. The

correct inference is usually more careful than the tempting one.

2. **True but not stated or implied.** A choice might be true in real life - “exercise is healthy” - but if the passage never says or implies it, it is wrong for this question.
3. **The opposite.** Sometimes a choice reverses the passage’s meaning. Slow down and check: does this choice agree with the author’s direction or fight it?
4. **Half right.** A choice gets the first part correct but adds an unsupported second part. Both halves must be supported by the text.

When two choices both look good, pick the one that sticks closest to the text. The GED rewards the careful reader, not the creative one.

Worked Example: A Walk-Through

Read this original passage:

“Lakeside Community Center started a free evening tutoring program last fall. In the first month, twelve students signed up. By spring, enrollment had grown to eighty students, and the center had to start a waiting list. Director Patrice Coleman credits the growth to word of mouth: parents told neighbors, and students brought friends. The center now hopes to hire two more tutors, but funding is uncertain. ‘The demand is clearly there,’ Coleman said. ‘The question is whether we can keep up with it.’”

Question: Based on the passage, what can the reader most reasonably infer about the tutoring program’s future?

A. The program will definitely close next year. B. The program’s growth may continue, but limited funding could hold it back. C. Parents are unhappy with the quality of tutoring. D. The center plans to charge students a fee.

Walk-through: First, eliminate what jumps the fence. Choice A says “definitely close” - the passage never says that, and “definitely” is extreme. Choice C claims parents are unhappy - but parents spreading the word by mouth suggests the opposite. Choice D invents a fee the passage never mentions. Choice B stays inside the fence: enrollment grew fast (so growth may continue), and “funding is uncertain” plus “whether we can keep up” (so limited funding could hold it back). Every part of B traces to the text. The answer is B.

Notice the method: eliminate the choices the text does not support, then pick the one that best matches what it does support. You are not guessing what will happen in real life. You are reporting what the passage gives you permission to conclude.

Try It

Read the passage, then answer the questions.

Passage: “When the city announced plans to turn the vacant lot on 5th Street into a parking garage, neighbors pushed back. Retired teacher Gloria Mendez started a petition, and within two weeks she had 900 signatures. At the town hall meeting, more than 200 residents showed up - many carrying signs that read ‘Gardens, Not Garages.’ Facing the crowd, the city council voted to delay the project for six months and study alternatives. Mendez says the neighborhood wants a community garden and playground on the lot instead.”

1. Which detail from the passage best supports the claim that the neighborhood opposed the parking garage? A. The lot on 5th Street was vacant. B. Mendez gathered 900 signatures on a petition against the project. C. The city council voted to delay the project. D. Mendez is a retired teacher.
2. What can the reader infer about the town hall meeting? A. The residents’ show of force influenced the council’s decision. B. The council had already decided to build the garage. C. Mendez spoke for exactly 200 residents. D. Parking garages are unpopular in every city.
3. Based on the passage, which statement is most reasonable? A. The neighborhood will definitely get its garden and playground. B. The delay gives the neighborhood a chance to argue for alternatives. C. The city has cancelled the garage project permanently. D. Mendez will run for city council.
4. The signs reading “Gardens, Not Garages” suggest that residents: A. dislike all city construction projects. B. prefer green space over more parking. C. want the lot to stay vacant. D. are opposed to playgrounds.
5. Short written: What is one inference you can draw about Gloria Mendez’s role in the neighborhood, and which details support it?

Try It Answers: 1. B - The 900 signatures are direct evidence of opposition. The lot being vacant (A) and Mendez’s job (D) do not show opposition, and the council’s delay (C) shows the result of the opposition, not the opposition itself. 2. A - Over 200 residents showed up with signs, and the council then voted to delay; the reasonable inference is that the turnout influenced the decision. B contradicts the delay, C adds “exactly” (too precise), D jumps the fence to “every city.” 3. B - The council delayed the project “to study alternatives,” which gives the neighborhood an opening. A and C use “definitely” and “permanently” - too extreme. D is never mentioned. 4. B - The sign directly contrasts gardens with garages, implying a preference. A is too broad, C contradicts “gardens,” D contradicts the

passage's mention of a playground. 5. Sample answer: Mendez is a respected community leader. Details: she gathered 900 signatures in two weeks and drew more than 200 residents to the meeting, which shows neighbors trust and follow her.

Think About It: *You already make inferences all day: a friend's short reply tells you they are upset; dark clouds tell you to grab an umbrella. The GED just asks you to do that same skill with a passage and prove it with evidence. You are not learning something new - you are aiming something you already do.*

Key Terms

- **Explicit:** Stated directly in the text.
- **Implicit:** Suggested by the text without being stated directly.
- **Inference:** A logical conclusion drawn from evidence in the text.
- **Evidence:** Details from the passage that support a claim or conclusion.
- **Claim:** A statement the author argues is true.
- **Assumption:** A belief taken for granted without proof; unlike an inference, it is not grounded in the text.
- **Supporting detail:** A fact or example used as evidence for a larger point.

Reflection Questions

1. What is the difference between an inference and a guess? How can you tell which one you are making?
2. Why do you think the GED asks "which detail supports this?" questions so often?
3. Have you ever jumped to a conclusion in real life that turned out wrong? What evidence did you skip?
4. Which of the four inference traps (too extreme, true but unstated, the opposite, half right) do you think would catch you most often?

Lesson 2.3 - Analyzing Arguments

Author's Purpose: Inform, Persuade, Entertain

Every author writes for a reason. On the GED, the three big reasons are to inform, to persuade, and to entertain - students remember this as PIE. An author who informs explains or describes: a passage about how community college enrollment works is informing. An author who persuades tries to change your mind or move you to action: an editorial arguing the city should fund more bus routes is persuading. An author who entertains tells a story or amuses: a funny essay about a disastrous family road trip is entertaining.

Most GED passages inform or persuade. To find the purpose, ask: "What does the author want me to do or think after reading this?" If the answer is "understand something better," the purpose is to inform. If the answer is "agree with them or take action," the purpose is to persuade. Purpose matters because it changes how you read. In a persuasive passage, you should constantly ask whether the evidence actually proves the claim, instead of just absorbing information the way you would in an informative passage.

Tone: Hearing the Author's Attitude

Tone is the author's attitude toward the subject - serious, hopeful, angry, sarcastic, neutral, proud. You cannot hear the author's voice, so you detect tone through word choice. Compare: "The council wasted money on another study" versus "The council invested in another study." Same event, different tone. "Wasted" is critical and frustrated. "Invested" is positive and hopeful.

On the test, tone questions often give you adjectives to choose from, and two choices will feel close - for example, "concerned" versus "alarmed." The difference is intensity, and the passage's word choice settles it. If the author writes about a "serious challenge that needs attention," the tone is concerned. If the author writes about a "crisis that threatens everything," the tone is alarmed. Circle the strongest attitude words as you read (Lesson 2.1's annotating habit pays off again) and match the tone choice to the actual words on the screen, not to your own feelings about the topic.

Fact vs. Opinion

A fact can be checked or proven: "The library opens at 9 a.m." An opinion expresses a belief or judgment: "The library is the best place in town." Opinions often wear signal words: "should," "best," "worst," "beautiful," "unfair," "I believe." Facts wear numbers, dates, and names - though a fact can still turn out to be wrong, it is the kind of statement you could verify.

Why does this matter? Because persuasive writing mixes facts and opinions, and strong arguments build opinions on top of facts. A weak argument stacks opinions on opinions: “This policy is terrible. Everyone hates it. It will ruin everything.” No checkable facts, just judgments. When you can separate the two, you can judge whether an argument is actually supported or just loudly stated. The RLA essay - where you compare two passages and argue which makes the stronger case - depends entirely on this skill.

Comparing Two Arguments: Which Is Stronger?

The RLA extended-response essay asks you to read two passages on one issue and explain which makes the stronger argument and why. That is just comparison, and you can practice it with any two passages. When comparing arguments, judge four things:

1. **Evidence quality.** Does the author use specific facts, numbers, and examples - or mostly opinions and vague claims? Specific beats vague.
2. **Logic.** Do the conclusions actually follow from the evidence? Watch for leaps, like “one program failed, so all programs fail.”
3. **Acknowledging the other side.** Strong arguments admit complications (“critics note the cost, but...”). One-sided arguments that ignore obvious objections are weaker.
4. **Tone and fairness.** A reasonable, respectful tone suggests confidence in the evidence. Name-calling and exaggeration suggest the evidence is thin.

Here are two short original passages on the same topic - whether the city should extend library hours.

Passage A: “Our public library should stay open until 9 p.m. on weeknights. Right now it closes at 6, which means anyone working a day shift can never use it. A 2024 city survey found that 68 percent of residents who do not use the library said evening hours would bring them in. The cost is modest: about \$40,000 a year for staffing, less than one percent of the parks budget. Other cities that extended hours saw evening visits rise within months. Everyone deserves access to books, computers, and job-search help - not just people with flexible schedules.”

Passage B: “Extending library hours is a terrible idea that only sounds good. Libraries are quiet places for reading, not nighttime hangouts. People who really want to read will find a way, and the city has more important things to spend money on. This plan is just another example of wasteful thinking. If we open the doors later, we will probably just attract troublemakers and noise.”

Worked Example - comparing them: Passage A names a specific problem (workers cannot use the library), cites a survey number (68 percent), gives a concrete cost (\$40,000, under one percent of the parks budget), and points to other cities' results. Its claims rest on checkable facts. Passage B offers opinions dressed as arguments: "terrible idea," "wasteful thinking," "probably just attract troublemakers." It gives no numbers, no examples, and no answer to the obvious objection that working people are shut out. Passage A makes the stronger argument because its evidence is specific and its reasoning addresses the real issue, while Passage B relies on exaggeration and unsupported predictions.

Use this same four-part check on the RLA essay. You do not need to agree with the stronger passage in real life - you need to show which author built the better case and prove it with evidence from both texts.

Try It

Read both passages, then answer the questions.

Passage A: "The Riverside neighborhood needs a crosswalk at 8th and Main. In the last two years, four pedestrians have been hit by cars at that intersection, including a child walking to school. The nearest safe crossing is six blocks away - too far for seniors and kids. A crosswalk with flashing lights costs about \$15,000, and the state offers grants that cover half. Other towns that added similar crosswalks saw pedestrian accidents drop sharply. Safety should not depend on which block you live on."

Passage B: "Putting a crosswalk at 8th and Main is pointless. Accidents happen everywhere, and pedestrians should just be more careful. Spending taxpayer money on flashing lights is a waste when the city has potholes to fix. People survived for years without a crosswalk there, so clearly it is not needed. This is just another feel-good project that will not change anything."

1. What is the author's main purpose in Passage A? A. To entertain readers with a story about Riverside. B. To persuade readers that a crosswalk is needed at 8th and Main. C. To inform readers about the history of Riverside. D. To describe how crosswalks are built.
2. Which word best describes the tone of Passage B? A. Neutral and balanced B. Hopeful and encouraging C. Dismissive and mocking D. Grateful and warm
3. Which of the following is a fact from Passage A? A. Safety should not depend on which block you live on. B. Four pedestrians have been hit by cars at that intersection in two years. C. The crosswalk is the most important project in the city. D. Other towns care more about safety than Riverside does.

4. Which statement about the two passages is most accurate? A. Passage A makes the stronger argument because it uses specific facts and addresses costs. B. Passage B makes the stronger argument because it considers taxpayer money. C. Both passages use equally strong evidence. D. Neither passage states an opinion.
5. Short written: In two or three sentences, explain which passage makes the stronger argument and give one reason based on evidence.

Try It Answers: 1. B - Passage A argues for the crosswalk and tries to convince the reader; it is persuasive, not entertainment or neutral history. 2. C - Words like “pointless,” “waste,” and “feel-good project” show a dismissive, mocking attitude toward the idea. 3. B - The accident number is checkable. A is an opinion (“should”), and C and D are claims the passage never makes. 4. A - Passage A cites accident numbers, distance, cost, grants, and other towns’ results; Passage B offers opinions (“pointless,” “waste”) with no supporting facts. 5. Sample answer: Passage A makes the stronger argument because it supports its claim with specific, checkable evidence - four accidents in two years, the \$15,000 cost, and the state grant covering half - while Passage B relies on unsupported opinions like “pointless” and “will not change anything.”

***Think About It:** Arguing well is a life skill, not just a test skill. The same thinking that spots a weak argument on the GED helps you at a tenant meeting, a job interview, or a family debate. When you can say “that is an opinion, not evidence,” you are harder to fool and easier to respect. That is worth more than any test score.*

Key Terms

- **Author’s purpose:** The reason an author writes: to inform, persuade, or entertain.
- **Tone:** The author’s attitude toward the subject, revealed through word choice.
- **Fact:** A statement that can be checked or proven true or false.
- **Opinion:** A statement of belief or judgment that cannot be proven true or false.
- **Argument:** A claim supported by reasons and evidence.
- **Evidence quality:** How specific, relevant, and checkable the support for a claim is.
- **Counterargument:** An objection to an argument; strong arguments acknowledge and answer counterarguments.

Reflection Questions

1. Think of an ad, speech, or post that tried to persuade you recently. Was it informing, persuading, or entertaining - and how could you tell?
 2. Why is tone harder to judge in writing than in speech? What clues do you rely on?
 3. Give an example of a fact and an opinion about your own neighborhood.
 4. When two people argue about an issue you care about, what makes you trust one side more than the other?
-

Module 2 Assignment

Title: Which Argument Wins?

Find two news articles or opinion pieces about the same local or national issue - for example, a new housing development, a school policy change, or a city budget decision. The two pieces should take different positions, or at least present the issue with a different emphasis. Read both carefully, using the active-reading strategies from Lesson 2.1: preview each piece, annotate the main ideas, and chunk longer articles.

Then write a 2-3 page comparison. First, summarize each article's main claim and the two or three strongest pieces of evidence it uses. Second, identify each author's purpose and tone, quoting specific word choices that reveal their attitude. Third, decide which article makes the stronger argument and explain why, using the four comparison tools from Lesson 2.3: evidence quality, logic, acknowledgment of the other side, and tone and fairness. Fourth, finish with one paragraph on what the weaker article could have done to make its case stronger - what evidence or reasoning would have helped it?

This assignment is direct practice for the RLA extended-response essay, where you will read two passages on one issue and argue which makes the stronger case. The only difference on test day is the timer: 45 minutes instead of a week. Build the thinking now, and the speed will follow.

Module 2 Quiz

Answer each question. Choose the best answer.

1. How long is the RLA test in total? A. 90 minutes B. 120 minutes C. 150 minutes D. 180 minutes
2. What score is needed to pass each GED subject? A. 100 B. 145 C. 165 D. 175

3. Which score range earns the “College Ready” label? A. 145-164 B. 165-174 C. 175-200 D. 100-144
4. When previewing a passage, which parts should you read first? A. Every word from top to bottom B. The title, first paragraph, and last paragraph C. Only the middle paragraphs D. The answer choices
5. When annotating on screen, what should you highlight? A. Every sentence that seems interesting B. One or two key sentences per paragraph: main ideas, names, dates, and attitude words C. Only words you do not know D. Nothing; highlighting wastes time
6. What is the best test of whether a sentence states the main idea? A. Whether it appears in the first paragraph B. Whether it is the longest sentence C. Whether most of the passage supports it D. Whether it contains a number
7. What does chunking a long passage mean? A. Skipping the middle paragraphs B. Breaking it into small sections and summarizing each before moving on C. Reading it twice as fast D. Memorizing the first and last sentences
8. Why should you read the questions before reading the passage? A. So you can answer without reading B. So you know what the test cares about and can read with focus C. Because the answers are printed in the questions D. Because the test rules require it
9. What is an inference? A. A guess based on personal opinion B. A logical conclusion drawn from evidence in the text C. The main idea restated in new words D. A fact copied word for word from the passage
10. Which argument is stronger: one built on specific facts and numbers, or one built on opinions and exaggeration? A. The one with opinions, because passion is convincing B. The one with specific facts and numbers C. They are equally strong D. It depends on which passage is longer

Module 2 Quiz Answers: 1. C - The RLA test is 150 minutes total. 2. B - A score of 145 passes each subject. 3. B - Scores of 165-174 earn the College Ready label (175+ earns College Ready plus Credit). 4. B - Preview the title, first paragraph, and last paragraph to build a mental map. 5. B - Highlight main ideas, names, dates, numbers, and attitude words; highlighting everything highlights nothing. 6. C - The main idea is the point most of the passage supports. 7. B - Chunking means breaking a long passage into small sections and summarizing each one. 8. B - Reading questions first guides your attention; you still must read the passage fairly before answering. 9. B - An inference is a logical conclusion drawn from evidence in the text, not a guess. 10. B - Specific, checkable evidence makes the stronger argument.

Module 2 Essay

Prompt: Read the passage below. In 300-500 words, analyze the author's argument: state the author's main claim in your own words, identify two pieces of evidence the author uses to support it, and evaluate the argument's strength. Is the evidence specific and convincing? Does the author acknowledge any counterarguments? End with your judgment: does the author make a strong case, and why or why not?

Passage: "The city should offer free bus passes to all high school students. Right now, many students who live too far to walk but too close for a school bus simply do not show up - truancy in those zones runs 22 percent higher than the city average. A free pass program in a nearby county cut student absences by nearly a third in its first year. The cost would be about \$600,000 annually, but the city already spends over \$2 million a year on truancy enforcement and court referrals. Some will say students should just be more responsible, but a teenager cannot take responsibility for a bus fare the family budget does not have."

Module 2 Submission Instructions

Submit your assignment, quiz answers, and essay as separate files (or one combined file clearly labeled) to noahsandersadvocacy@gmail.com with the subject line: [Your Name] - Module 2 - [Assignment Type]. See General Submission Instructions for file naming and format.

MODULE 3: Writing With Confidence - RLA

Writing (Weeks 5-6)

Lesson 3.1 - Grammar That Matters

Why the GED Cares About Grammar

The GED's Reasoning Through Language Arts test does not ask you to diagram sentences or recite grammar rules from memory. Instead, it gives you passages with errors in them - sometimes underlined, sometimes not - and asks you to fix them. This section is called "language conventions and usage," and it is worth a large share of your RLA score.

Here is the good news: the test only checks a small set of grammar rules, and it checks them over and over. You do not need to learn every rule in the English language. You need to master the handful this lesson covers. These are also the rules that make your writing clear in real life - in job applications, emails to your child's teacher, and anywhere else your words need to carry weight.

One more thing before we start: nobody is born knowing grammar. Every confident writer you have ever met learned it one rule at a time, usually as an adult. If grammar has embarrassed you in the past, that ends here. We are building skill, not judging you.

Subject-Verb Agreement

The rule is simple: a singular subject takes a singular verb; a plural subject takes a plural verb. *The dog runs. The dogs run.* The test makes this hard by separating the subject and verb with extra words.

Trick 1: Ignore the words between the subject and the verb. Example: "The box of tools was heavy." The subject is *box* (singular), not *tools*. The phrase "of tools" is just decoration. Cross it out mentally and the answer is obvious.

Trick 2: Indefinite pronouns are usually singular. Words like *each, every, either, neither, everyone, somebody, nobody, anyone* are all singular, even though they sound like they refer to groups. "Everyone was ready" - not "were." "Neither of the answers *is* correct."

Trick 3: Compound subjects joined by “and” are plural. “The manager and the employee *were* arguing.” But when “or” or “nor” joins them, the verb matches the closer subject: “Neither the manager nor the employees *were* arguing” / “Neither the employees nor the manager *was* arguing.” The GED loves this one.

Trick 4: “There is” vs. “There are.” The real subject comes *after* the verb here. “There *are* three reasons” (reasons is plural). “There *is* a reason” (reason is singular). Read the sentence backwards to check.

Verb Tenses: Keep Them Consistent

A verb tense tells you *when* something happened. The GED’s favorite tense trap is shifting tenses without a reason: “She *walked* to the store and *buys* milk.” Both actions happened in the past, so both verbs should be past tense: “She *walked* to the store and *bought* milk.”

Know the three you will see most:

- **Simple past:** “I *worked* late.” Finished action, finished time.
- **Present perfect:** “I *have worked* here for five years.” Started in the past, still true now. Uses *have/has* + past participle.
- **Past perfect:** “I *had worked* there before I moved.” The earlier of two past events. Uses *had* + past participle.

On the test, when two events both happened in the past, use past perfect for the one that happened first: “She *had finished* dinner before he *arrived*.”

Pronouns: Small Words, Big Trouble

A pronoun (he, she, it, they, them, who, which) stands in for a noun. Two rules cover most GED pronoun questions:

Rule 1: Pronouns must agree with their noun in number. “Each student must bring *his or her* notebook” - not “their,” because *each* is singular. (In everyday speech “their” is common and fine; on the GED, match singular with singular.)

Rule 2: The reference must be clear. “When Maria met Lisa, *she* was upset.” Who was upset - Maria or Lisa? If you cannot tell, the pronoun is wrong. Fix it by repeating the name: “When Maria met Lisa, Lisa was upset.”

Also watch *who* vs. *whom*: *who* does the action, *whom* receives it. "The woman *who* called" (she called - she does the action). "The woman *whom* I called" (I called her - she receives it). Quick test: if you could answer with *he/she*, use *who*; if *him/her*, use *whom*.

Commonly Confused Words

The GED loves these. Drill them until they are automatic:

- **Their / there / they're.** *Their* = belonging to them ("their car"). *There* = a place ("over there") or used with *is/are* ("there is a problem"). *They're* = they are ("they're coming").
- **Your / you're.** *Your* = belonging to you ("your phone"). *You're* = you are ("you're right"). If you can replace it with "you are" and the sentence still works, use *you're*.
- **Its / it's.** *Its* = belonging to it ("the dog wagged its tail"). *It's* = it is or it has ("it's raining"). Same replacement test as above.
- **To / too / two.** *To* = direction or purpose ("go to work"). *Too* = also or excessive ("me too," "too loud"). *Two* = the number 2.
- **Then / than.** *Then* = time sequence ("first this, then that"). *Than* = comparison ("bigger than").
- **Affect / effect.** *Affect* is usually the verb (to influence): "The rain affected traffic." *Effect* is usually the noun (the result): "The effect was huge."

Tricky Verb Pairs: Lay/Lie and Sit/Set

Two verb pairs confuse almost everyone, and the GED knows it:

- **Lay** means to *put* something down - it needs an object. "I *lay* the book on the table." Its past tense is *laid*: "Yesterday I *laid* the book on the table."
- **Lie** means to *rest* - no object. "I *lie* down for a nap." Its past tense is *lay* (yes, the past of *lie* is spelled like the present of *lay* - English is unfair): "Yesterday I *lay* down for a nap."
- **Set** means to *put* something down - needs an object. "She *set* the plate on the counter."
- **Sit** means to *rest* - no object. "She *sat* on the stool."

The object test: can you answer "what?" after the verb? "Lay *what*? The book." If there is a "what," use *lay* or *set*. If there is no "what," use *lie* or *sit*. On the test, "He *laid* down for a nap" is wrong (no object - should be "lay"), and "She *sat* the baby in the chair" is wrong (there IS an object - should be "set").

How the GED Actually Tests This: Editing Passages

On test day, grammar questions look like this. You will see a short passage - often a memo, email, or workplace notice - with numbered sentences. Some sentences contain errors. A question will ask you to choose the best correction, or to decide that no change is needed.

Try this sample passage the way the test wants you to:

(1) Each of the new employees *was* given a handbook. (2) The handbook explains *their* responsibilities. (3) Neither the manager nor the supervisors *was* available for questions.

Question: Which sentence contains an error, and how would you fix it?

Work through it. Sentence 1: "Each" is singular, "was given" is singular - correct. Sentence 2: "their" refers to "Each of the new employees" - singular antecedent, so "their" is wrong; it should be "his or her." Sentence 3: with "neither/nor," the verb matches the closer subject, "supervisors" (plural), so "was" should be "were." Two errors in three sentences - that is the density of the real test.

Notice what you just did: you read like an editor, not like a casual reader. That shift is the whole skill. On the test, slow down and read every sentence twice - once for meaning, once hunting for the specific error types in this lesson. Most test-takers miss grammar questions because they read too fast, not because they do not know the rules.

Try It

1. Choose the correct verb: "The pile of papers (was / were) on the desk."
2. Choose the correct verb: "Neither the teacher nor the students (was / were) late."
3. Fix the tense shift: "He opened the door and walks inside."
4. Which is correct? "You're going to love your new schedule" or "Your going to love you're new schedule"?
5. Fix the unclear pronoun: "After the manager spoke to the clerk, he left the room."

Answers:

1. **was.** The subject is *pile* (singular). "Of papers" is decoration - cross it out.
2. **were.** With "neither/nor," the verb matches the closer subject, *students* (plural).
3. **"He opened the door and walked inside."** Both actions are past; keep both verbs past tense.

4. **“You’re going to love your new schedule.”** *You’re* = you are (“you are going to love” works). *Your* shows belonging (“your schedule” = the schedule belonging to you).

5. **“After the manager spoke to the clerk, the manager left the room.”** (Or “the clerk left,” depending on meaning - the point is you must name who left, because “he” could be either one.)

***Think About It:** Grammar rules are tools, not judgments about your intelligence. You already speak a complex language fluently - that is proof your brain handles grammar just fine. Now you are simply learning the written version's rules. Which of today's rules surprised you, and which one do you already use without thinking about it?*

Key Terms

- **Subject-verb agreement:** The rule that singular subjects take singular verbs and plural subjects take plural verbs.
- **Indefinite pronoun:** A pronoun like *each*, *everyone*, or *neither* that is grammatically singular even though it refers to people generally.
- **Verb tense:** The form of a verb that shows when an action happened (past, present, future).
- **Present perfect:** A tense using *have/has* + past participle for actions that started in the past and continue now.
- **Pronoun agreement:** The rule that a pronoun must match its noun in number (singular/plural).
- **Antecedent:** The noun a pronoun refers back to. If the antecedent is unclear, the pronoun is wrong.
- **Homophones:** Words that sound alike but have different meanings and spellings (their/there/they're).

Reflection Questions

1. Why do you think the GED tests grammar through editing passages instead of asking for rule definitions?
2. Which subject-verb agreement trick (ignoring middle words, indefinite pronouns, neither/nor) do you need to practice most?
3. Write two sentences of your own: one using “their,” one using “they’re.” Check them with the replacement test.

4. When has unclear writing caused a real problem in your life (a text, an application, a work message)? How could today's rules have helped?

Lesson 3.2 - Sentences That Work

What Makes a Sentence “Work”

A sentence works when it expresses one complete thought clearly enough that a stranger can follow it. That is the whole standard. Everything in this lesson - fragments, run-ons, parallel structure - is just a name for a specific way sentences fail that standard, plus the fix. The GED tests these because employers, schools, and government offices run on sentences that work.

Fragments: The Unfinished Thought

A **fragment** is a group of words punctuated like a sentence but missing something essential - usually a subject, a verb, or a complete thought. Read these out loud and feel how each one leaves you hanging:

- “Because the store was closed.” (Because... what happened? This is a dependent clause pretending to be a sentence.)
- “Running late for the interview.” (Who was running? No subject.)
- “The report that I finished yesterday.” (The report... what about it? No complete verb action.)

Fixing fragments: There are two moves. Either attach the fragment to the sentence it belongs with - “Because the store was closed, we went home” - or complete the thought - “I was running late for the interview.” On the GED, look for sentences starting with *because*, *since*, *when*, *although*, *if*, or *while*. If the sentence ends before the main clause arrives, it is a fragment.

Run-Ons and Comma Splices

A **run-on** jams two complete sentences together with no punctuation: “I was tired I went to bed early.” A **comma splice** does it with only a comma: “I was tired, I went to bed early.” A comma alone is never strong enough to join two complete sentences. This is one of the most common errors in adult writing, and the GED tests it constantly.

You have four correct ways to fix a run-on. Learn all four, because the test will ask which fix is best:

1. **Make two sentences.** “I was tired. I went to bed early.” Simple, always correct.

2. **Use a comma plus a joining word (FANBOYS: for, and, nor, but, or, yet, so).** "I was tired, so I went to bed early."
3. **Use a semicolon.** "I was tired; I went to bed early." A semicolon is a "soft period" - it joins two complete, closely related sentences.
4. **Make one sentence dependent.** "Because I was tired, I went to bed early." Now only one complete thought remains, so no join is needed.

The test trick: when a question offers several ways to fix a run-on, more than one may be grammatically correct. Choose the one that is clearest and does not change the meaning. If two fixes are both correct and clear, prefer the simplest - usually two sentences or comma-plus-joining-word.

Parallel Structure: Match Your Parts

Parallel structure means keeping the same grammatical form for items in a list or comparison. When the forms do not match, the sentence feels wobbly even if you cannot name why.

- Not parallel: "She likes *reading*, *to swim*, and *hiking*." (noun, infinitive, noun)
- Parallel: "She likes *reading*, *swimming*, and *hiking*." (all -ing forms)

The GED tests this in lists, in pairs joined by *and/or*, and in comparisons using *not only... but also* or *either... or*:

- "The job requires *punctuality*, *honesty*, and *to work hard*" becomes "The job requires *punctuality*, *honesty*, and *hard work*."
- "He is *not only* smart *but also* works hard" becomes "He is *not only* smart *but also* *hardworking*."

The ear test: read the list items alone, without the rest of the sentence. "Reading... to swim... hiking." If they sound mismatched, they are. Make them match.

Combining Sentences Effectively

The GED also rewards you for *combining* short, choppy sentences into smooth ones - a skill the extended-response essay (Lesson 3.3) needs. Compare: "The meeting was long. It was boring. Nobody paid attention." Three true sentences, zero style. Combined: "The meeting was so long and boring that nobody paid attention."

Three combining tools:

1. **Relative clauses (who, which, that):** "The nurse checked the chart. The chart was on the counter." becomes "The nurse checked the chart that was on the counter."

2. **Appositives (renaming phrases):** “Dr. Lee is my dentist. She is very gentle.” becomes “Dr. Lee, my dentist, is very gentle.”
3. **Subordination (because, although, when, while):** “It rained. We canceled the game.” becomes “Because it rained, we canceled the game.”

Warning: do not combine so aggressively that meaning gets lost or the sentence becomes a run-on. One idea per clause, joined cleanly. If you have to read your combined sentence three times to understand it, split it back up.

Varying Sentence Length: The Rhythm of Good Writing

Once your sentences are correct, make them musical. Good writing mixes short and long sentences the way good music mixes loud and soft. Read this: “The storm hit at midnight. The power failed. The basement flooded. We carried furniture upstairs for three hours.” Every sentence is short. The rhythm is a machine gun - urgent, but exhausting.

Now: “The storm hit at midnight, knocking out the power within minutes. While the basement flooded, we carried furniture upstairs for three hours.” Same facts, better rhythm. The variety tells the reader what matters: short sentences punch (“The power failed.”), long sentences explain and connect.

A practical rule for your essay: if you notice three short sentences in a row, combine two of them. If you notice a sentence running past three lines, split it. You do not need to count words - just read your draft out loud during your 5-minute review. Your ear will catch what your eye misses. Choppy writing sounds choppy; smooth writing sounds confident. Scorers feel the difference even when they cannot name it.

How the GED Actually Tests This

Sentence questions usually give you a sentence with an underlined portion and ask you to select the best version - or “no change.” The wrong answers (distractors) are designed to look right at a glance. Your process:

1. Read the full sentence, not just the underlined part.
2. Name the error type: fragment? run-on? comma splice? parallelism?
3. Eliminate choices that repeat the error or create a new one.
4. Pick the clearest correct fix.

Example: "The committee approved the budget, they scheduled the vote for Friday." That is a comma splice. The choices might include: (A) no change, (B) "budget; they scheduled," (C) "budget, and they scheduled," (D) "budget they scheduled." Both B and C fix the splice - B with a semicolon, C with comma-plus-and. Both are correct; C is slightly clearer for most readers. D just removes the comma and is still a run-on. On the real test, either B or C would be the credited answer depending on which the test writers chose - but recognizing that A and D are wrong is what earns the point.

When "No Change" Is the Right Answer

About a quarter of GED sentence questions are correct as written - the answer is "no change." Test-takers miss these because they assume every underlined sentence must contain an error. Do not fall for it.

Before you change anything, ask: is this sentence actually broken? Read it fresh. If you cannot name the error type (fragment, run-on, splice, parallelism), it might not have one. The test writers include perfectly good sentences to punish over-editing.

That said, never pick "no change" lazily. The discipline is: *identify the error or confirm its absence*. Read the sentence, run your mental checklist - complete thought? one error type present? If yes, fix it. If the sentence survives the checklist, choose "no change" with confidence. Students who learn this discipline stop losing points in both directions: they fix real errors and leave good sentences alone.

Try It

1. Fragment or complete? "After the alarm went off this morning."
2. Fix the run-on: "The printer was jammed we called for help."
3. Fix the parallelism: "The new policy promises fairness, transparency, and to save money."
4. Combine into one smooth sentence: "Maria is a skilled mechanic. She fixed my car in an hour."
5. Which is correct? (A) "He was tired, he skipped dinner." (B) "He was tired; he skipped dinner."

Answers:

1. **Fragment.** It is a dependent clause starting with "After" - we never learn what happened after the alarm. Fix: "After the alarm went off this morning, I got up." (Or complete it another way.)
2. Any of: "The printer was jammed. We called for help." / "The printer was jammed, so we called for help." / "The printer was jammed; we called for help." / "Because the printer was jammed, we called

for help.”

3. “The new policy promises fairness, transparency, and savings.” All three items are now nouns. (Also acceptable: “to be fair, to be transparent, and to save money” - all infinitives.)

4. “Maria, a skilled mechanic, fixed my car in an hour.” (Appositive.) Also fine: “Maria is a skilled mechanic who fixed my car in an hour.” (Relative clause.)

5. (B). Choice A is a comma splice - a comma alone cannot join two complete sentences. The semicolon in B does the job.

***Think About It:** Nobody writes perfect first drafts - professional writers produce fragments and run-ons constantly, then fix them while editing. The GED is testing your editing eye, not your first-draft genius. Read one paragraph you wrote recently (a text, an email, a social media post). Can you spot one sentence you would now improve? That is the skill working.*

Key Terms

- **Fragment:** An incomplete sentence missing a subject, verb, or complete thought.
- **Run-on sentence:** Two complete sentences joined with no punctuation.
- **Comma splice:** Two complete sentences joined with only a comma - always wrong.
- **FANBOYS:** The joining words *for, and, nor, but, or, yet, so* that can follow a comma to join two sentences.
- **Semicolon:** Punctuation that joins two complete, closely related sentences.
- **Parallel structure:** Using the same grammatical form for items in a list or comparison.
- **Appositive:** A phrase that renames a noun, set off by commas (“Dr. Lee, my dentist, ...”).

Reflection Questions

1. Which error - fragments, run-ons, or comma splices - shows up most in your own writing? Why do you think that is?
2. Why is a comma alone not enough to join two complete sentences? Explain it in your own words.
3. Take a paragraph from today’s news or a work document. Find one sentence you could combine or smooth out, and rewrite it.
4. How does sentence variety (some short, some long) change how writing feels to read?

Lesson 3.3 - The Extended Response Essay

What the Task Actually Is

The RLA test includes one essay - the **extended response** - and you get 45 minutes for it. You will read two passages that take opposite positions on the same issue, then write an essay arguing **which passage makes the stronger argument**. You are not asked for your personal opinion on the topic. You are asked to *evaluate arguments* - to judge which author supports their position better with evidence and reasoning.

This distinction matters enormously. Many test-takers write passionate essays about their own views and barely mention the passages. Those essays score poorly no matter how well written, because they answer the wrong question. Your job is to be a judge, not a debater. Compare the two passages, decide which argument is stronger, and prove your verdict with quotes and specifics from the texts.

Plan for 10 Minutes, Write for 30, Check for 5

Forty-five minutes sounds like a lot until the clock starts. Divide it deliberately:

- **Minutes 1-10: Read and plan.** Read both passages carefully. Underline each author's main claim and best evidence. Decide your verdict. Sketch a quick outline - four bullet points, one per paragraph.
- **Minutes 11-40: Write.** Follow your outline. Aim for four to five paragraphs and roughly 300-500 words. Do not stop to perfect sentences; keep moving.
- **Minutes 41-45: Review.** Fix grammar, spelling, and unclear sentences. Make sure every paragraph has a point. A clean, complete essay beats a brilliant unfinished one.

The planning trap: some test-takers write for 40 minutes with no plan and produce a wandering essay. Others plan for 30 minutes and run out of writing time. Ten minutes of planning is the sweet spot - enough to know where you are going, short enough to leave real writing time.

The 4-Paragraph Structure That Works

You do not need a fancy structure. This one is clear, complete, and easy to execute under pressure:

Paragraph 1 - Introduction with verdict. State the issue in one or two sentences, name both passages, and give your verdict clearly: "While both passages address [issue], Passage 2 presents

the stronger argument because its evidence is specific and its reasoning addresses the main objection.” That last clause - *because* - is your thesis. It tells the scorer exactly what you will prove.

Paragraph 2 - Why the stronger passage wins. Explain the winning passage's best points. Quote or paraphrase specific evidence: “Passage 2 cites a 2019 study showing...” Explain *why* that evidence is convincing - it is specific, it comes from a credible source, it directly supports the claim.

Paragraph 3 - Why the weaker passage loses. Fairly describe the other passage's argument, then show its weakness: vague claims (“many people believe”), no evidence, emotional appeals instead of facts, or a key objection it never answers. Be respectful - you are critiquing reasoning, not insulting the author.

Paragraph 4 - Conclusion. Restate your verdict and the one or two biggest reasons. End with a sentence about why strong evidence matters for this issue - a small “so what” that shows you were thinking, not just filling space.

Using Evidence Quotes

Every claim you make about a passage should point at the text. You do not need long quotes - short, well-chosen ones are better:

- Weak: “Passage 1 had good evidence.” (Which evidence? This says nothing.)
- Strong: “Passage 1’s strongest evidence is its citation of Dr. Alvarez’s finding that graduation rates rose 12 percent - a specific, measurable result tied directly to the claim.”

Introduce quotes naturally: *According to Passage 2...*, *As the author notes...*, *For example, the passage states....* Then explain what the quote proves. Quote plus explanation - never a quote standing alone, never a claim without a quote.

What the Scorers Look For

The GED scores your essay on three traits. Know them and write to them:

1. **Creation of arguments and use of evidence.** Did you take a clear position on which argument is stronger and support it with specific evidence from the passages? This is the most important trait. An essay with no quotes from the passages cannot score well.
2. **Development of ideas and organizational structure.** Is your essay logically organized with an introduction, body paragraphs, and conclusion? Do ideas connect, or does it jump around? The 4-paragraph structure handles this.

3. **Clarity and command of standard English.** Are sentences complete and varied? Is grammar mostly correct? They do not expect perfection - they expect readable, controlled writing. This is where Lessons 3.1 and 3.2 pay off.

Essays are scored 0-2 on each trait by human readers (and the score is doubled in your final RLA score). A perfect essay is not required to pass - a clear, organized, evidence-based essay in the middle range is enough.

Sample Prompt and Full Sample Essay

Sample prompt (invented for practice): *Two passages debate whether high schools should start later in the morning. Read both passages, then write an essay explaining which argument is stronger and why. Use evidence from the passages.*

Passage 1 (summary): Argues schools should start later. Cites the American Academy of Pediatrics recommendation, a University of Washington study where later start times raised grades 4.5 percent, and notes that teen car crashes fell in districts that shifted schedules. Acknowledges the objection about after-school sports and answers it with examples of schools that adjusted practice times.

Passage 2 (summary): Argues against later starts. Claims “most parents oppose it” without data, warns vaguely that “it would disrupt everything,” and relies on the author’s personal memory: “When I was in school we started at 7:30 and turned out fine.”

Sample essay:

Both passages address whether high schools should begin the day later, but Passage 1 presents the clearly stronger argument. Its evidence is specific, sourced, and directly tied to its claims, while Passage 2 relies on vague assertions and personal anecdote. On the question of which author builds the better case, Passage 1 wins on every measure that matters.

Passage 1’s greatest strength is its use of concrete, credible evidence. It does not simply claim that teens need more sleep - it cites the American Academy of Pediatrics, an authoritative medical body, and a University of Washington study finding that later start times raised grades by 4.5 percent. That number matters: it is measurable, it comes from real research, and it connects directly to the claim that schedule changes help students learn. The passage goes further, noting that teen car crashes fell in districts that made the switch - evidence that the benefits extend beyond the classroom into public safety. Each piece of evidence is specific enough to check and strong enough to persuade.

Passage 2, by contrast, offers almost no evidence at all. Its central claim that “most parents oppose” later starts comes with no poll, no survey, no number of any kind - the reader is simply expected to

take the author's word for it. The warning that change "would disrupt everything" is equally empty: it names no specific disruption and offers no example. Most telling is the passage's reliance on personal memory - "we started at 7:30 and turned out fine." One person's school experience, decades ago, cannot answer a question about what current research shows is best for millions of students today. Anecdote is not evidence, and Passage 2 never moves past it.

What finally separates the two passages is how they handle objections. Passage 1 anticipates the strongest counterargument - that later starts would wreck after-school sports - and answers it with real schools that adjusted practice schedules successfully. Passage 2 never engages with the sleep science or the grade data at all; it simply ignores the strongest evidence against its position. An argument that will not face its opposition has not earned the reader's trust.

For these reasons, Passage 1 makes the stronger case. It brings sourced facts, measurable results, and honest engagement with objections, while Passage 2 brings assertions and nostalgia. On an issue affecting the health and learning of millions of teenagers, the passage with real evidence deserves to win - and that is Passage 1.

Why this essay works: clear verdict in paragraph 1, specific evidence quotes in paragraph 2, fair but firm critique in paragraph 3, restated verdict in paragraph 4. Every claim about a passage points at something in the passage. That is the formula - learn it, practice it, trust it.

Try It

1. In the extended response, should you write about your personal opinion on the topic? Why or why not?
2. How should you divide your 45 minutes?
3. What are the three traits scorers evaluate?
4. Which is stronger evidence: "The author cites a 2019 study of 500 schools" or "The author makes a good point about schools"? Why?
5. Write a one-sentence thesis (verdict) for this imaginary task: Passage A argues school uniforms improve discipline, citing a district survey; Passage B argues uniforms change nothing, citing two peer-reviewed studies. You believe Passage B is stronger.

Answers:

1. **No.** The task asks which *passage* makes the stronger argument, not what you personally believe. Essays about personal opinions that ignore the passages score poorly.

2. About 10 minutes planning (read, underline, outline), 30 minutes writing, 5 minutes reviewing and fixing errors.

3. (1) Creation of arguments and use of evidence, (2) development of ideas and organizational structure, (3) clarity and command of standard English.

4. **The first.** It is specific - a year, a sample size - and can be evaluated. "Makes a good point" says nothing concrete.

5. **Example: "While Passage A offers survey data, Passage B presents the stronger argument because peer-reviewed studies are more reliable evidence than a single district's survey."** Any clear verdict with a *because* clause tied to evidence quality works.

***Think About It:** The essay is not asking you to be a brilliant writer. It is asking you to be a fair judge who shows their work. You already do this in real life - every time you compare two phone plans, two job offers, or two apartments and explain your choice with reasons, you are doing extended-response thinking. The test just asks you to do it on paper. What decision did you make recently by weighing evidence? You already have the skill.*

Key Terms

- **Extended response:** The GED's 45-minute essay task comparing two passages' arguments.
- **Thesis:** Your verdict sentence stating which argument is stronger and why.
- **Evidence:** Specific facts, quotes, data, or examples from the passages that support your points.
- **Anecdote:** A personal story. Weak evidence on the GED - one experience cannot prove a general claim.
- **Counterargument:** An objection to a position. Strong passages address counterarguments; weak ones ignore them.
- **The three traits:** The official scoring categories - argument/evidence, development/organization, clarity/English command.

Reflection Questions

1. Why does the GED ask you to judge the passages' arguments instead of giving your own opinion? What skill is it really testing?

2. Which part of the 45 minutes - planning, writing, or reviewing - do you think you would struggle with most? What is your plan for it?
 3. Reread the sample essay. Which paragraph do you think is strongest, and what makes it work?
 4. Practice task: find any two short opinion pieces online about the same topic. Spend 10 minutes outlining a verdict essay. What evidence would you quote?
-

Module 3 Assignment

Title: Editing and Essay Practice

Part 1: Write a 1-page “editing log.” Find or write a paragraph (8-10 sentences) with at least 5 grammar or sentence errors of the types in Lessons 3.1 and 3.2. Then provide the corrected version, labeling each fix (e.g., “Sentence 3: fixed comma splice with semicolon”).

Part 2: Write a 300-500 word practice extended-response essay using this prompt: *Two passages debate whether cities should build more bike lanes. Passage A argues bike lanes reduce traffic deaths, citing a city transportation study. Passage B argues bike lanes waste money and hurt businesses, citing interviews with three shop owners.* Argue which passage is stronger, using the 4-paragraph structure from Lesson 3.3.

Module 3 Quiz

1. In “The team of players was celebrating,” what is the subject, and why is “was” correct?
2. Fix the agreement error: “Everyone in the class have finished.”
3. Correct the sentence: “She finished her shift and goes home.”
4. Choose: “There (is / are) several reasons to apply.”
5. Which is correct: “Its a nice day” or “It’s a nice day”? Explain.
6. Identify the error: “Because I missed the bus.” How would you fix it?
7. Fix this comma splice two different ways: “The store closed early, we left.”
8. Fix the parallelism: “He enjoys cooking, jogging, and to read.”
9. In the extended response, what is the actual question you must answer?
10. Name the three traits essay scorers evaluate.

Module 3 Essay

Prompt: In 300-400 words, explain why planning time matters on the extended-response essay. Describe what a strong 10-minute plan includes and what typically goes wrong for test-takers who skip planning. Use at least one specific example.

Module 3 Submission Instructions

Submit your assignment, quiz answers, and essay as separate files (or one combined file clearly labeled) to **noahsandersadvocacy@gmail.com** with the subject line: [Your Name] - Module 3 - [Assignment Type]. See General Submission Instructions for file naming and format.

MODULE 4: Math Foundations (Weeks 7-8)

Lesson 4.1 - Numbers and Operations

You Can Do This

Let us get something out of the way first: if math has ever made you feel stupid, that feeling lied to you. Math anxiety is one of the most common experiences among adult learners, and it has nothing to do with your intelligence. Usually it comes from being rushed, shamed, or taught procedures without explanations sometime in the past. This course does the opposite. We go step by step, we explain *why*, and there is no timer on your learning here.

The GED math test is 115 minutes, split into two parts. You may use the TI-30XS calculator on Part 2 only - Part 1 is no-calculator, which is why mental math and number sense matter. A formula sheet is provided on test day, so you do not need to memorize every formula. What you need is understanding, and that is what these three lessons build.

Place Value: Reading Numbers Correctly

Every digit's value depends on its position. In 5,372, the 5 means five *thousands*, the 3 means three *hundreds*, the 7 means seven *tens*, and the 2 means two *ones*. With decimals, positions continue to the right of the decimal point: in 4.68, the 6 is six *tenths* and the 8 is eight *hundredths*.

Two skills the GED checks constantly:

Comparing decimals. Line up the decimal points and compare digit by digit from the left. Which is bigger: 0.45 or 0.5? Write 0.5 as 0.50. Now compare: $0.50 > 0.45$. The trap is thinking "45 is bigger than 5" - but 0.5 means five tenths, and 0.45 is only four and a half tenths.

Rounding. To round 3,847 to the nearest hundred: find the hundreds digit (8), look one place right (4). Since 4 is less than 5, round down: 3,800. To round 0.467 to the nearest tenth: the tenths digit is 4, the next digit is 6 (5 or more), so round up: 0.5.

Worked Example 1: Order from least to greatest: 0.6, 0.59, 0.605. Step 1: Write with the same number of decimal places: 0.600, 0.590, 0.605. Step 2: Compare thousandths: $590 < 600 < 605$. Answer: 0.59, 0.6, 0.605.

Order of Operations: PEMDAS

When an expression mixes operations, everyone must compute in the same order or get different answers. The order is **PEMDAS**: **P**arentheses, **E**xponents, **M**ultiplication and **D**ivision (left to right), **A**ddition and **S**ubtraction (left to right). Memory trick: "Please Excuse My Dear Aunt Sally."

Worked Example 2: Evaluate $3 + 4 \times (6 - 2)^2$. Step 1: Parentheses: $(6 - 2) = 4$. Now: $3 + 4 \times 4^2$. Step 2: Exponents: $4^2 = 16$. Now: $3 + 4 \times 16$. Step 3: Multiplication: $4 \times 16 = 64$. Now: $3 + 64$. Step 4: Addition: 67. Answer: 67. (Doing it left to right without PEMDAS would give a wrong answer - that is exactly what the test is checking.)

Worked Example 3: Evaluate $(10 - 4)^2 / 12 + 1$. Step 1: Parentheses: $(10 - 4) = 6$. Now: $6^2 / 12 + 1$. Step 2: Exponents: $6^2 = 36$. Now: $36 / 12 + 1$. Step 3: Division: $36 / 12 = 3$. Now: $3 + 1$. Step 4: Addition: 4. Answer: 4.

Common trap: multiplication does NOT always come before division - they are equals, done left to right. In $12 / 3 \times 2$, go left to right: $12 / 3 = 4$, then $4 \times 2 = 8$. (Doing 3×2 first gives $12 / 6 = 2$ - wrong.)

Positive and Negative Numbers

Think of a number line. Adding a positive moves right; adding a negative moves left. The rules:

- **Adding:** same signs, add and keep the sign: $-3 + (-5) = -8$. Different signs, subtract and keep the sign of the bigger number: $-7 + 4 = -3$ (because $7 - 4 = 3$, and 7 was negative).
- **Subtracting:** turn it into addition by flipping the sign: $5 - (-3) = 5 + 3 = 8$. And $-4 - 6 = -4 + (-6) = -10$.
- **Multiplying/dividing:** same signs give positive, different signs give negative. $(-4) \times (-3) = 12$. $(-4) \times 3 = -12$. $(-12) / (-4) = 3$. $(-12) / 4 = -3$.

Worked Example 4: A bank account has \$120. Three checks of \$45 each clear. What is the balance? Step 1: Three checks of \$45 = $3 \times (-45) = -135$ (money leaving). Step 2: $120 + (-135) = -15$. Answer: -\$15 (overdrawn by \$15). Different signs, subtract: $135 - 120 = 15$, keep the negative sign.

Exponents and Roots

An **exponent** tells you how many times to multiply the base by itself: $2^3 = 2 \times 2 \times 2 = 8$. A **square root** asks the reverse: $\sqrt{25} = 5$, because $5 \times 5 = 25$.

Key facts for the GED:

- Any number to the power of 0 is 1: $7^0 = 1$.
- Any number to the power of 1 is itself: $9^1 = 9$.
- Squaring a negative gives a positive: $(-3)^2 = (-3) \times (-3) = 9$. But -3^2 (no parentheses) means $-(3^2) = -9$. Parentheses matter.
- Perfect squares to know: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144. Their roots: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

Worked Example 5: A square garden has area 144 square feet. How long is each side? Step 1: Side length = $\sqrt{144}$. Step 2: $12 \times 12 = 144$, so $\sqrt{144} = 12$. Answer: 12 feet.

Worked Example 6: Evaluate $-2^3 + (-2)^3$. Step 1: $-2^3 = -(2 \times 2 \times 2) = -8$ (no parentheses - the negative is not part of the base). Step 2: $(-2)^3 = (-2) \times (-2) \times (-2) = -8$ (parentheses - the negative IS part of the base; odd exponent keeps it negative). Step 3: $-8 + (-8) = -16$. Answer: -16.

Mental Math Shortcuts for Part 1 (No Calculator)

Part 1 of the GED math test allows no calculator, so mental math is a scoring skill. These shortcuts are not tricks - they are just smarter ways to use the rules you already know:

Breaking numbers apart. For $48 + 37$, do not stack and carry in your head. Break it up: $48 + 30 = 78$, then $78 + 7 = 85$. For 15×6 , think $(10 \times 6) + (5 \times 6) = 60 + 30 = 90$. Splitting numbers into friendly parts is almost always faster than the schoolbook method.

Multiplying by 10, 100, 1000. Just add zeros: $34 \times 100 = 3,400$. Dividing by 10, 100, 1000: move the decimal left: $560 / 100 = 5.6$.

Finding 10% and building from it. 10% of any number is just the decimal moved one place left: 10% of \$240 = \$24. Need 20%? Double it: \$48. Need 15%? Add half of 10%: $\$24 + \$12 = \$36$. Need 5%? Halve the 10%: \$12. Almost every “percent of” problem on the no-calculator section surrenders to this method.

Checking reasonableness. Before you trust an answer, ask: does the size make sense? If you computed 15% of \$200 and got \$300, something is wrong - 15% must be less than the whole \$200. This five-second habit catches more errors than any other single skill.

Try It

1. Round 7,456 to the nearest hundred.
2. Evaluate: $20 - 3 \times (4 + 2)$.

3. Evaluate: $(-6) + 14 - (-3)$.

4. A submarine is at -120 feet. It rises 45 feet. What is its new depth?

5. Evaluate: $(5^2 - 3^2) / 4$.

Answers:

1. **7,500.** Hundreds digit is 4, next digit is 5 (5 or more), round up: 7,500.

2. **2.** Parentheses first: $(4 + 2) = 6$. Then multiplication: $3 \times 6 = 18$. Then subtraction: $20 - 18 = 2$. (Left-to-right would wrongly give 102.)

3. **11.** $(-6) + 14$: different signs, subtract: $14 - 6 = 8$, keep positive. Then $8 - (-3) = 8 + 3 = 11$.

4. **-75 feet.** Rising means adding: $-120 + 45$. Different signs, subtract: $120 - 45 = 75$, keep the negative sign. -75 feet.

5. **4.** Exponents: $5^2 = 25$, $3^2 = 9$. Parentheses: $25 - 9 = 16$. Division: $16 / 4 = 4$.

***Think About It:** Math anxiety is real, and it is not a character flaw - it is usually the scar tissue of bad past experiences. Here is what research actually shows: the brain that freezes on a timed test is the same brain that can solve the problem calmly with practice. Every worked example you follow in this course is rewiring that old story. You are not "bad at math." You are a person learning math, which is a completely different thing. What is one small math win you have had in adult life - calculating a tip, measuring for a project, balancing a budget? Start from that win.*

Key Terms

- **Place value:** The value of a digit based on its position (ones, tens, hundreds, tenths, hundredths...).
- **PEMDAS:** The order of operations - Parentheses, Exponents, Multiplication/Division (left to right), Addition/Subtraction (left to right).
- **Integer:** A whole number, positive, negative, or zero (... , -2, -1, 0, 1, 2, ...).
- **Exponent:** A small raised number telling how many times to multiply the base by itself ($2^3 = 8$).
- **Square root:** The number that, multiplied by itself, gives the original number ($\sqrt{36} = 6$).
- **Perfect square:** A number that is the square of a whole number (1, 4, 9, 16, 25...).
- **Absolute value:** A number's distance from zero, always positive ($|-7| = 7$).

Reflection Questions

1. Why does the order of operations matter? What goes wrong if everyone computes left to right?
2. Explain in your own words why a negative times a negative is a positive. (Hint: think about reversing direction twice.)
3. Which is part of the GED you feel better about after this lesson - and which part still makes you nervous?
4. Where do negative numbers show up in your daily life? List three examples.

Lesson 4.2 - Fractions, Decimals, Percents

Three Faces of the Same Idea

Fractions, decimals, and percents are not three different topics. They are three ways of writing the *same* idea: part of a whole. One-half = $\frac{1}{2}$ = 0.5 = 50%. The GED tests whether you can move fluently between these forms, because real life demands it - a sale sign says 30% off, a recipe says $\frac{1}{2}$ cup, and your pay stub shows 0.062 in tax withholding. It is all the same math in different clothes.

Converting - the only moves you need:

- Fraction to decimal: divide top by bottom. $\frac{3}{4} = 3 \div 4 = 0.75$.
- Decimal to percent: move the decimal point two places right. $0.75 = 75\%$.
- Percent to decimal: move the decimal point two places left. $75\% = 0.75$.
- Percent to fraction: put over 100 and simplify. $75\% = \frac{75}{100} = \frac{3}{4}$.
- Fraction to percent: convert to decimal first, then move the point. $\frac{3}{8} = 0.375 = 37.5\%$.

Memorize these common ones cold - they appear on every test: $\frac{1}{2} = 0.5 = 50\%$, $\frac{1}{4} = 0.25 = 25\%$, $\frac{3}{4} = 0.75 = 75\%$, $\frac{1}{3} = 0.333... = 33.3\%$, $\frac{2}{3} = 0.666... = 66.7\%$, $\frac{1}{5} = 0.2 = 20\%$, $\frac{1}{10} = 0.1 = 10\%$.

Fraction Operations

Adding/subtracting: you need a common denominator - you can only add same-sized pieces.

Worked Example 1: $\frac{2}{3} + \frac{1}{6}$. Step 1: Common denominator of 3 and 6 is 6. Convert: $\frac{2}{3} = \frac{4}{6}$. Step 2: $\frac{4}{6} + \frac{1}{6} = \frac{5}{6}$. Answer: $\frac{5}{6}$.

Worked Example 2: $\frac{5}{8} - \frac{1}{4}$. Step 1: Common denominator of 8 and 4 is 8. Convert: $\frac{1}{4} = \frac{2}{8}$. Step 2: $\frac{5}{8} - \frac{2}{8} = \frac{3}{8}$. Answer: $\frac{3}{8}$.

Multiplying: multiply tops, multiply bottoms, simplify. No common denominator needed. **Worked Example 3:** $\frac{2}{3} \times \frac{9}{10}$. Step 1: Multiply: $(2 \times 9) / (3 \times 10) = \frac{18}{30}$. Step 2: Simplify: divide top and bottom by 6: $\frac{18}{30} = \frac{3}{5}$. Answer: $\frac{3}{5}$. (Shortcut: cancel before multiplying - 2 and 10 share a factor of 2, 9 and 3 share 3: $(1 \times 3)/(1 \times 5) = \frac{3}{5}$.)

Dividing: flip the second fraction and multiply ("keep, change, flip"). **Worked Example 4:** $\frac{3}{4} \div \frac{2}{5}$. Step 1: Keep $\frac{3}{4}$, change $\div$ to $\times$, flip $\frac{2}{5}$ to $\frac{5}{2}$: $\frac{3}{4} \times \frac{5}{2}$. Step 2: Multiply: $\frac{15}{8}$. Answer: $\frac{15}{8}$, or $1\frac{7}{8}$.

Percent Problems: Real Life

Almost every GED percent question is one of three types. Learn the setups:

Type 1: Find the percent of a number. "What is 20% of \$80?" Convert to decimal and multiply: $0.20 \times 80 = \$16$.

Type 2: Find the percent change. "A \$50 shirt is on sale for \$35. What percent off?" Step 1: Amount of change: $50 - 35 = 15$. Step 2: Divide change by original: $15 / 50 = 0.30 = 30\%$ off.

Type 3: Find the original. "After a 25% discount, a jacket costs \$60. What was the original price?" Step 1: $\$60 = 75\%$ of original (because $100\% - 25\% = 75\%$). Step 2: $60 / 0.75 = \$80$. Answer: \$80.

Worked Example 5 - Discount: A \$120 tool set is 30% off. What is the sale price? Step 1: Discount amount: $0.30 \times 120 = \$36$. Step 2: Sale price: $120 - 36 = \$84$. (Or: $120 \times 0.70 = \$84$ directly.) Answer: \$84.

Worked Example 6 - Tax and tip: Dinner costs \$46. Tax is 8% and you leave a 20% tip on the pre-tax amount. What is the total? Step 1: Tax: $0.08 \times 46 = \$3.68$. Step 2: Tip: $0.20 \times 46 = \$9.20$. Step 3: Total: $46 + 3.68 + 9.20 = \$58.88$. Answer: \$58.88.

Worked Example 7 - Percent increase: Rent goes from \$900 to \$990. What is the percent increase? Step 1: Change: $990 - 900 = 90$. Step 2: $90 / 900 = 0.10 = 10\%$. Answer: 10% increase. (Always divide by the *original* number, not the new one - the GED loves testing this.)

Decimal Operations: Line Them Up

Adding/subtracting decimals: line up the decimal points, fill with zeros if needed. $4.5 + 0.27 = 4.50 + 0.27 = 4.77$.

Multiplying decimals: multiply normally, then count total decimal places in the factors and put that many in the answer. 1.2×0.3 : $12 \times 3 = 36$, two decimal places total, so 0.36. Sanity check: 1.2 is about 1, 0.3 is less than half, so the answer should be less than 0.5 - 0.36 makes sense.

Dividing decimals: move the decimal in the divisor until it is whole, move it the same distance in the dividend. $4.5 / 0.5$: move one place in both: $45 / 5 = 9$.

Estimate First, Calculate Second

Before you compute an exact answer, estimate one. Estimation is your error-detection system, and the GED rewards it indirectly - many wrong answers are wildly unreasonable, and estimators eliminate them instantly.

How to estimate: round the numbers to friendly ones, then compute roughly. Exact: 0.30×118 . Estimate: $0.30 \times 120 = 36$. If your exact calculation gives \$354, you know you slipped a decimal. If it gives \$35.40, the estimate says you are in the right neighborhood.

Worked Example 8 - Estimate then solve: A grocery bill has items costing \$12.49, \$8.95, \$23.50, and \$4.75. Estimate the total, then compute it. Step 1: Estimate: $\$12 + \$9 + \$24 + \$5 = \$50$. Step 2: Exact: $12.49 + 8.95 = 21.44$. $21.44 + 23.50 = 44.94$. $44.94 + 4.75 = \$49.69$. Answer: \$49.69 - close to the \$50 estimate, so it checks out.

Mixed Practice: All Three Forms in One Problem

The GED loves problems that force you to convert mid-stream. Here is the method: pick one form (usually decimals) and convert everything to it.

Worked Example 9: A contractor completed $\frac{1}{2}$ of a job on Monday, 0.3 of it on Tuesday, and 15% on Wednesday. What fraction of the job remains? Step 1: Convert everything to decimals: $\frac{1}{2} = 0.5$, 0.3 stays, $15\% = 0.15$. Step 2: Add completed: $0.5 + 0.3 + 0.15 = 0.95$. Step 3: Remaining: $1 - 0.95 = 0.05$. Step 4: Convert back to a fraction: $0.05 = \frac{5}{100} = \frac{1}{20}$. Answer: $\frac{1}{20}$ of the job remains.

Common Percent Traps on the GED

Three traps catch test-takers every year. Learn them now and they will never catch you:

Trap 1: Percent of vs. percent off. "30% off \$80" does not mean you pay \$24 - \$24 is the *discount*. You pay $\$80 - \$24 = \$56$. Always ask: did I find the part taken away, or the part remaining? When in doubt, compute both.

Trap 2: Successive discounts do not add. A 20% discount followed by another 10% discount is NOT 30% off. Take \$100: after 20% off it is \$80; 10% off \$80 is \$8 more, so you pay \$72 - a total discount of 28%, not 30%. Each discount applies to the new, smaller price.

Trap 3: Percent increase vs. percent of the new total. "Rent increased 10% to \$1,100. What was the original rent?" The trap answer: $\$1,100 - \$110 = \$990$. Wrong - the 10% was calculated on the *original*, unknown rent, not on \$1,100. Correct setup: $1.10 \times (\text{original}) = 1,100$, so $\text{original} = 1,100 / 1.10 = \$1,000$. When a problem gives you the *result* of a percent change, divide - do not subtract.

Worked Example 10: A store advertises "Take an extra 25% off sale prices." A jacket is on sale for \$60 (already 20% off the original). What is the final price, and what total percent off the original is that? Step 1: Extra 25% off \$60: $0.25 \times 60 = \$15$ discount. Final price: $60 - 15 = \$45$. Step 2: Find the original: \$60 was 80% of original, so $\text{original} = 60 / 0.80 = \$75$. Step 3: Total discount: $75 - 45 = \$30$. $30 / 75 = 0.40 = 40\%$ off total. Answer: \$45 final price - 40% off the original (not 45% - traps 1 and 2 both lurking here).

Try It

1. Convert $5/8$ to a decimal and a percent.
2. Compute: $3/5 + 1/10$. Simplify.
3. Compute: $4/9 \div 2/3$.
4. A \$75 pair of shoes is on sale for 40% off. What is the sale price?
5. A phone bill rises from \$60 to \$69. What is the percent increase?

Answers:

1. **0.625 = 62.5%.** $5 / 8 = 0.625$. Move the decimal two places right: 62.5%.
2. **7/10.** Common denominator 10: $3/5 = 6/10$. $6/10 + 1/10 = 7/10$.
3. **2/3.** Keep-change-flip: $4/9 \times 3/2 = 12/18 = 2/3$.
4. **\$45.** Discount: $0.40 \times 75 = \$30$. Sale price: $75 - 30 = \$45$. (Or $75 \times 0.60 = \$45$.)
5. **15%.** Change: $69 - 60 = 9$. $9 / 60 = 0.15 = 15\%$. (Divide by the original \$60.)

Think About It: You already do fraction-decimal-percent math every time you shop a sale, split a bill, or check a discount. The GED is not asking you to learn alien math - it is asking you to do your math a little more carefully and show your steps. Next time you see a sale sign,

compute the final price before you reach the register. That is GED practice disguised as shopping.

Key Terms

- **Numerator / denominator:** The top / bottom of a fraction. The denominator tells the size of the pieces; the numerator counts them.
- **Common denominator:** A shared bottom number that lets you add or subtract fractions.
- **Simplify (reduce):** Dividing a fraction's top and bottom by the same number to get the smallest form.
- **Reciprocal:** A fraction flipped upside down. Used to divide fractions (keep-change-flip).
- **Percent:** "Per hundred" - a fraction with denominator 100.
- **Percent change:** (amount of change) / (original amount), expressed as a percent.
- **Repeating decimal:** A decimal with digits that repeat forever, like 0.333... for $\frac{1}{3}$.

Reflection Questions

1. Why do you think the GED tests the same idea (part of a whole) in three forms - fractions, decimals, percents?
2. Explain "keep, change, flip" to someone who has never seen it. Why does flipping the second fraction make division work? (Hint: dividing by 2 is the same as multiplying by $\frac{1}{2}$.)
3. Which percent problem type (find the percent, find the change, find the original) is hardest for you? What is your plan to master it?
4. Find a real receipt or bill. Identify one percent on it (tax, tip, discount) and recompute it by hand to check.

Lesson 4.3 - Ratios, Proportions, and Algebra Basics

Ratios: Comparing Two Things

A **ratio** compares two quantities: "2 cups of flour to 3 cups of sugar" is the ratio 2:3, also written $\frac{2}{3}$ or "2 to 3." Ratios show up everywhere - recipes, map scales, batting averages, mixing cleaning solution.

A **unit rate** is a ratio simplified so the second number is 1. It answers “how much per one?” Which is the better deal: 12 eggs for \$3.60 or 18 eggs for \$4.50?

Worked Example 1: Compare the egg deals. Step 1: Deal A: $3.60 / 12 = \$0.30$ per egg. Step 2: Deal B: $4.50 / 18 = \$0.25$ per egg. Answer: Deal B is cheaper per egg. Unit rates turn confusing comparisons into simple ones - this is one of the most useful math skills in daily life.

Simplifying ratios works like simplifying fractions: divide both parts by their greatest common factor. The ratio 12:18 simplifies to 2:3 (divide by 6).

Proportions: Solving With Cross-Multiplication

A **proportion** is an equation saying two ratios are equal: $2/3 = x/12$. To solve, **cross-multiply**: multiply diagonally.

Worked Example 2: Solve $2/3 = x/12$. Step 1: Cross-multiply: $2 \times 12 = 3 \times x$, so $24 = 3x$. Step 2: Divide both sides by 3: $x = 8$. Answer: $x = 8$. (Check: $2/3 = 8/12$ - both simplify to $2/3$. Correct.)

Worked Example 3 - Real life: A recipe uses 3 cups of flour for 12 muffins. How much flour for 20 muffins? Step 1: Set up the proportion: $3/12 = x/20$ (cups over muffins on both sides - keep units consistent). Step 2: Cross-multiply: $3 \times 20 = 12x$, so $60 = 12x$. Step 3: Divide: $x = 5$. Answer: 5 cups of flour.

The units rule: whatever is on top on the left must be on top on the right. If you write $3/12 = 20/x$ by accident, you will get $x = 80$ - nonsense. Label your units as you set it up: cups/muffins = cups/muffins.

Worked Example 4 - Map scale: A map scale is 1 inch = 25 miles. Two towns are 3.5 inches apart on the map. How far apart really? Step 1: Proportion: $1/25 = 3.5/x$ (inches over miles = inches over miles). Step 2: Cross-multiply: $1 \times x = 25 \times 3.5$, so $x = 87.5$. Answer: 87.5 miles.

Expressions vs. Equations: Know the Difference

An **expression** is a math phrase with no equals sign: $3x + 5$. You can *simplify* or *evaluate* it (plug in a value), but you cannot “solve” it - there is nothing to solve.

An **equation** has an equals sign: $3x + 5 = 20$. It is a question: *what value of x makes this true?* You solve it.

Evaluating: if $x = 4$, then $3x + 5 = 3(4) + 5 = 12 + 5 = 17$.

Combining like terms (simplifying): $4x + 2x = 6x$. But $4x + 2y$ cannot combine - x-terms and y-terms are different species. And $3x + 5$ cannot combine - the 5 has no x. Think of it as apples and oranges: 4 apples + 2 apples = 6 apples, but 4 apples + 2 oranges stays as it is.

The distributive property: $a(b + c) = ab + ac$. Multiply the outside number by everything inside: $3(x + 4) = 3x + 12$. Forgetting to distribute to the second term is the #1 algebra error on the GED.

One-Step Equations: Undo the Operation

An equation is a balanced scale. Whatever you do to one side, do to the other. To isolate x, do the *opposite* operation:

Worked Example 5: Solve $x + 7 = 15$. Step 1: x has +7. Undo with -7 on both sides: $x + 7 - 7 = 15 - 7$. Step 2: $x = 8$. Answer: $x = 8$. (Check: $8 + 7 = 15$. Correct.)

Worked Example 6: Solve $x/4 = 9$. Step 1: x is divided by 4. Undo by multiplying both sides by 4: $(x/4) \times 4 = 9 \times 4$. Step 2: $x = 36$. Answer: $x = 36$. (Check: $36/4 = 9$. Correct.)

Worked Example 7: Solve $-3x = 21$. Step 1: x is multiplied by -3. Undo by dividing both sides by -3: $x = 21 / (-3)$. Step 2: $x = -7$. (Positive divided by negative is negative.) Answer: $x = -7$. (Check: $-3 \times (-7) = 21$. Correct.)

Two-Step Equations: Undo in Reverse Order

Worked Example 8: Solve $2x + 5 = 17$. Step 1: Undo addition/subtraction first (reverse of PEMDAS): subtract 5 from both sides: $2x = 12$. Step 2: Undo multiplication: divide both sides by 2: $x = 6$. Answer: $x = 6$. (Check: $2(6) + 5 = 12 + 5 = 17$. Correct.)

Worked Example 9: Solve $(x/3) - 4 = 2$. Step 1: Add 4 to both sides: $x/3 = 6$. Step 2: Multiply both sides by 3: $x = 18$. Answer: $x = 18$. (Check: $18/3 - 4 = 6 - 4 = 2$. Correct.)

Worked Example 10 - Word problem: You buy 4 notebooks and a \$6 pen, spending \$22 total. How much was each notebook? Step 1: Let n = notebook price. Equation: $4n + 6 = 22$. Step 2: Subtract 6: $4n = 16$. Step 3: Divide by 4: $n = 4$. Answer: \$4 per notebook. (Check: $4 \times 4 + 6 = 22$. Correct.)

Always check your answer by plugging it back into the original equation. It takes ten seconds and catches most errors. On the GED, checking is the difference between a careless miss and a confident point.

Try It

1. Which is the better buy: 8 oz of cheese for \$4.00 or 12 oz for \$5.40? Use unit rates.
2. Solve the proportion: $\frac{5}{8} = \frac{x}{40}$.
3. A car travels 180 miles on 6 gallons of gas. How far can it go on 10 gallons? (Set up a proportion.)
4. Simplify: $7x - 3x + 2$.
5. Solve: $3x - 7 = 14$. Show your check.

Answers:

1. **The 12 oz package.** $4.00/8 = \$0.50$ per oz. $5.40/12 = \$0.45$ per oz. The bigger package costs less per ounce.
2. **$x = 25$.** Cross-multiply: $5 \times 40 = 8x$, so $200 = 8x$. Divide by 8: $x = 25$. Check: $5/8 = 25/40$ (both equal 0.625).
3. **300 miles.** Proportion: $180/6 = x/10$ (miles over gallons = miles over gallons). Cross-multiply: $180 \times 10 = 6x$, so $1800 = 6x$. $x = 300$.
4. **$4x + 2$.** Combine the like terms $7x - 3x = 4x$. The 2 has no x , so it stays: $4x + 2$.
5. **$x = 7$.** Add 7 to both sides: $3x = 21$. Divide by 3: $x = 7$. Check: $3(7) - 7 = 21 - 7 = 14$. Correct.

Think About It: Algebra looks scary because of the letters, but x is just a box hiding a number - and you have been solving for hidden numbers since childhood ("I had some candy, ate 3, and have 5 left - how many did I start with?"). The GED's algebra is mostly one- and two-step equations and proportions, which you now know how to solve. When letters make you nervous, replace x with a blank in your mind: $2 \times \underline{\quad} + 5 = 17$. Suddenly it is just a puzzle, and you are good at puzzles.

Key Terms

- **Ratio:** A comparison of two quantities (2:3, $2/3$, "2 to 3").
- **Unit rate:** A ratio simplified to "per one" (\$0.25 per egg).
- **Proportion:** An equation stating two ratios are equal. Solved by cross-multiplication.
- **Cross-multiplication:** In $a/b = c/d$, multiplying diagonally to get $ad = bc$.
- **Expression:** A math phrase with no equals sign ($3x + 5$). Simplified or evaluated, not solved.
- **Equation:** A statement that two expressions are equal ($3x + 5 = 20$). Solved for the variable.

- **Like terms:** Terms with the same variable part that can be combined ($4x$ and $2x$).
- **Distributive property:** $a(b + c) = ab + ac$.

Reflection Questions

1. When have you used a unit rate in real life without calling it that (shopping, cooking, driving)?
 2. Why must units match on both sides of a proportion? What goes wrong if they don't?
 3. Explain the difference between an expression and an equation to a friend. Why does it matter?
 4. Solve $5x + 3 = 28$, then write one sentence explaining each step as if teaching someone else.
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Module 4 Assignment

Title: Math in Real Life

Part 1: Create and solve 3 original word problems from your own life - one percent problem (discount, tax, or tip), one proportion problem (recipe, map, or mileage), and one two-step equation problem. Show every step.

Part 2: Write a half-page reflection: which math topic in this module was hardest for you, what specifically confused you, and what strategy from the lessons helped you get unstuck?

Module 4 Quiz

1. Round 8,349 to the nearest thousand.
2. Evaluate: $6 + 2 \times 5^2$.
3. A temperature of -8 degrees rises by 15 degrees. What is the new temperature?
4. Convert 0.4 to a fraction in simplest form and to a percent.
5. Compute: $\frac{5}{6} - \frac{1}{3}$. Simplify.
6. A \$90 jacket is 25% off. What is the sale price?
7. Simplify the ratio 15:25.
8. Solve: $x/5 = 12$.
9. Solve: $4x + 9 = 33$. Show your check.

10. A 2.5-hour movie is what percent of a 24-hour day? Round to the nearest tenth of a percent.

Module 4 Essay

Prompt: In 300-400 words, explain why “showing your work” matters in math - on the GED and in real life. Describe a time when skipping steps (in math or anything else) caused a mistake, and how writing out steps helps you catch errors.

Module 4 Submission Instructions

Submit your assignment, quiz answers, and essay as separate files (or one combined file clearly labeled) to **noahsandersadvocacy@gmail.com** with the subject line: [Your Name] - Module 4 - [Assignment Type]. See General Submission Instructions for file naming and format.

MODULE 5: Math Problem-Solving (Weeks 9-10)

Lesson 5.1 - Equations, Inequalities, and Functions

The GED Math Test: What You're Really Facing

Let's get this out of the way first: the GED Math test is not trying to trick you. It is 115 minutes long, split into two parts. Part 1 is about 5 questions with NO calculator. Part 2 lets you use an on-screen scientific calculator (the TI-30XS model). And on test day, you get a **formula sheet** - you do not have to memorize area and volume formulas. The test measures whether you can read a problem, set it up, and solve it sensibly - not whether you can do party tricks with numbers.

You need 145 out of 200 to pass. You do not need a perfect score. You need roughly half the questions right, and many questions are straightforward if you slow down and follow a process. Most adults who struggle with math don't struggle with math itself - they struggle with math *anxiety*. They see an equation and freeze. This lesson is about unfreezing: turning symbols into simple steps you can follow every single time.

Here's the secret of algebra: **an equation is just a balance scale**. Both sides have to weigh the same. Whatever you do to one side, you do to the other, and the scale stays balanced. That's it. That's all of algebra. Every multi-step equation you'll ever meet is just this rule applied a few times in a row.

Solving Multi-Step Equations

An equation has an equals sign and an unknown, usually called **x**. Your job is to get x alone on one side. Work backwards through the operations - undo addition with subtraction, undo multiplication with division.

Worked Example 1: Solve $3x + 7 = 22$.

Step 1: The 7 is added to $3x$. Undo it by subtracting 7 from BOTH sides: $3x + 7 - 7 = 22 - 7$ $3x = 15$

Step 2: The 3 is multiplied by x. Undo it by dividing BOTH sides by 3: $3x / 3 = 15 / 3$ $x = 5$

Step 3: Check! Plug 5 back in: $3(5) + 7 = 15 + 7 = 22$. It works. Checking takes ten seconds and catches almost every careless mistake. Always check.

Worked Example 2: Solve $2(x - 4) = 10$.

Step 1: The parentheses come first. Distribute the 2: multiply 2 by x AND by -4. $2x - 8 = 10$

Step 2: Add 8 to both sides: $2x = 18$

Step 3: Divide both sides by 2: $x = 9$

Check: $2(9 - 4) = 2(5) = 10$. Correct.

Worked Example 3: Solve $(x / 4) + 3 = 11$.

Step 1: Subtract 3 from both sides: $x / 4 = 8$

Step 2: Multiply both sides by 4: $x = 32$

Check: $32 / 4 + 3 = 8 + 3 = 11$. Correct.

Worked Example 4: Solve $5x - 2x + 6 = 21$. (This one has like terms - combine them first!)

Step 1: $5x - 2x = 3x$, so: $3x + 6 = 21$

Step 2: Subtract 6 from both sides: $3x = 15$

Step 3: Divide by 3: $x = 5$

Check: $5(5) - 2(5) + 6 = 25 - 10 + 6 = 21$. Correct.

Inequalities: Equations With an Attitude

An **inequality** uses $<$ (less than), $>$ (greater than), $\leq$ (less than or equal to), or $\geq$ (greater than or equal to) instead of an equals sign. You solve them exactly like equations - with ONE extra rule: **if you multiply or divide both sides by a NEGATIVE number, flip the inequality sign.**

Worked Example 5: Solve $x + 9 > 20$.

Subtract 9 from both sides: $x > 11$. Done - any number bigger than 11 works.

Worked Example 6: Solve $-2x < 14$.

Divide both sides by -2 - and FLIP the sign: $x > -7$.

Why does the sign flip? Think of it: $-2x < 14$ means "negative two times x is less than 14." If $x = -10$, then $-2(-10) = 20$, which is NOT less than 14. If $x = 0$, then $0 < 14$ - true. So the answer is numbers GREATER than -7. The flip rule is just a shortcut for this logic.

Graphing inequalities is easy and shows up on the test. Draw a number line: - For $>$ or $<$: use an OPEN circle (the endpoint is NOT included). - For $\geq$ or $\leq$: use a CLOSED (filled) circle (the endpoint IS included). - Shade the arrow in the direction of the solutions.

So $x > 11$ means: open circle at 11, arrow pointing right. And $x \leq 4$ means: closed circle at 4, arrow pointing left.

Functions: Input-Output Machines

A **function** is a rule that turns an input into an output. Think of a vending machine: you put in a code (input), you get a snack (output). Every code gives exactly one snack - that's what makes it a function.

Functions are often written like **$f(x) = 2x + 3$** . Read it as: "the function f takes input x and outputs $2x + 3$." To evaluate $f(4)$, just replace x with 4: $f(4) = 2(4) + 3 = 11$.

Functions also appear as tables:

x (input)	y (output)
1	5
2	7
3	9

Can you see the rule? Each output is $2x + 3$. So $f(4) = 11$. On the test, you'll often be asked: given the table, what's the output for a new input? Find the pattern first, then extend it.

Slope: How Steep Is the Line?

Slope measures how steep a line is - how much y changes for each step in x . The formula:

$$\text{slope} = (\text{change in } y) / (\text{change in } x) = (y_2 - y_1) / (x_2 - x_1)$$

Worked Example 7: Find the slope of the line through (2, 3) and (6, 11).

Step 1: Label the points. $(x_1, y_1) = (2, 3)$ and $(x_2, y_2) = (6, 11)$. Step 2: $\text{slope} = (11 - 3) / (6 - 2) = 8 / 4 = 2$.

A slope of 2 means: for every 1 step right, the line goes up 2. Positive slope = rising left to right.

Negative slope = falling. Zero slope = flat horizontal line. Undefined slope = vertical line (dividing by zero - impossible).

Slope shows up in word problems too: "A plumber charges a \$50 service fee plus \$75 per hour." The \$75 is the slope (rate of change), and \$50 is the starting value. Total cost = $75h + 50$. Recognizing

slope in a story is a classic GED question.

Translating Words Into Equations

Many GED questions never show you an equation - they describe one in words, and you have to build it. Learn the vocabulary:

- “is” almost always means “=”
- “more than” / “increased by” means +
- “less than” / “decreased by” means -
- “of” usually means multiply (as in “20% of 50”)
- “per” means divide (miles per hour = miles / hours)

Worked Example 8: “Twice a number decreased by 7 is 15.” Find the number.

Step 1: Translate. “Twice a number” = $2x$. “decreased by 7” = $- 7$. “is 15” = $= 15$. $2x - 7 = 15$ Step 2: Add 7 to both sides: $2x = 22$. Step 3: Divide by 2: $x = 11$. Check: $2(11) - 7 = 22 - 7 = 15$. Correct.

Worked Example 9: “A gym charges a \$40 enrollment fee plus \$25 per month. A member paid \$190 total. How many months was she a member?”

Step 1: Translate. Let m = months. Total = $25m + 40$, and that equals 190: $25m + 40 = 190$ Step 2: Subtract 40: $25m = 150$. Step 3: Divide by 25: $m = 6$ months. Check: $25(6) + 40 = 150 + 40 = 190$. Correct.

The translation step is where most points are won or lost. Write the equation BEFORE you calculate - it forces you to understand the problem first.

Try It - Lesson 5.1

1. Solve: $4x - 5 = 27$.
2. Solve: $3(x + 2) = 21$.
3. Solve and graph: $-3x \geq 12$.
4. If $g(x) = x^2 - 4$, what is $g(3)$?
5. Find the slope of the line through $(-1, 4)$ and $(3, -4)$.

Answer Key: 1. $x = 8$. Add 5 to both sides ($4x = 32$), then divide by 4. Check: $4(8) - 5 = 32 - 5 = 27$.

2. $x = 5$. Distribute: $3x + 6 = 21$. Subtract 6: $3x = 15$. Divide by 3: $x = 5$. Check: $3(5 + 2) = 3(7) = 21$.

3. $x \leq -4$. Divide both sides by -3 and flip the sign. Graph: closed circle at -4, arrow pointing left. 4.

$g(3) = 5$. Replace x with 3: $3^2 - 4 = 9 - 4 = 5$. Slope = -2. $(y_2 - y_1) / (x_2 - x_1) = (-4 - 4) / (3 - (-1)) = -8 / 4 = -2$. The line falls left to right.

Think About It: Math anxiety is real, but it is not a verdict on your ability. Every person who is “good at math” simply followed steps patiently enough times that the steps became automatic. You are not behind - you are just earlier in the process. The equation does not know you are scared of it. Work the steps, check your answer, and move on. That is all anyone does.

Key Terms

- **Equation:** A mathematical sentence with an equals sign; both sides have the same value.
- **Inequality:** A comparison using $<$, $>$, $\leq$, or $\geq$; solutions are a range of values, not one number.
- **Like terms:** Terms with the same variable raised to the same power; they can be combined ($5x$ and $-2x$ are like terms).
- **Distributive property:** $a(b + c) = ab + ac$; multiply the outside number by everything inside the parentheses.
- **Function:** A rule that assigns exactly one output to each input.
- **$f(x)$ notation:** “ f of x ” - the output of function f when the input is x .
- **Slope:** The steepness of a line, calculated as (change in y) / (change in x).

Reflection Questions

1. Why does checking your answer by plugging it back in catch so many mistakes?
2. In your own words, explain why you flip the inequality sign when dividing by a negative number.
3. Where have you seen “input-output” relationships in real life (a job, a recipe, a budget)? Describe one.
4. What is one math habit from this lesson you will use on test day?

Lesson 5.2 - Geometry

You Get a Formula Sheet - Use It

Here is genuinely good news: the GED gives you a **formula sheet** on test day with the area, perimeter, and volume formulas printed right on it. Geometry on the GED is not a memory test. It is a *reading* test: can you look at a shape, figure out which formula fits, plug in the numbers, and calculate? Most geometry questions are word problems or diagrams. Your job is matchmaking - match the shape to its formula.

The formulas you will use most (all on your sheet): - **Rectangle:** Perimeter = $2(\text{length} + \text{width})$; Area = $\text{length} \times \text{width}$ - **Triangle:** Area = $(1/2) \times \text{base} \times \text{height}$ - **Circle:** Circumference = $2 \times \pi \times \text{radius}$; Area = $\pi \times \text{radius}^2$ (π is about 3.14) - **Rectangular prism (box):** Volume = $\text{length} \times \text{width} \times \text{height}$ - **Cylinder:** Volume = $\pi \times \text{radius}^2 \times \text{height}$

Notice the pattern: **perimeter and circumference** measure around (one dimension), **area** measures surface (two dimensions, square units), and **volume** measures space inside (three dimensions, cubic units). If your answer's units don't match the question type, you used the wrong formula.

Perimeter and Area in Action

Worked Example 1: A rectangular garden is 12 feet long and 8 feet wide. How much fencing is needed to go around it, and what is the area inside?

Perimeter = $2(12 + 8) = 2(20) = 40$ feet of fencing. Area = $12 \times 8 = 96$ square feet.

Two questions, two formulas, same numbers. The GED loves this - always check whether they want the *around* or the *inside*.

Worked Example 2: A triangular sign has a base of 10 inches and a height of 6 inches. What is its area?

Area = $(1/2) \times 10 \times 6 = (1/2) \times 60 = 30$ square inches. The most common mistake is forgetting the $1/2$. Triangles are half of the rectangle they'd fit inside - that's why.

Worked Example 3: A circular pool has a radius of 7 feet. What is the area of the water's surface? (Use 3.14 for π .)

Area = $\pi \times r^2 = 3.14 \times 7^2 = 3.14 \times 49 = 153.86$ square feet.

Careful: radius is HALF the diameter. If a problem gives you the diameter, divide by 2 first. This is the single most common circle mistake on the test.

Volume: Filling the Box

Worked Example 4: A moving box is 3 feet long, 2 feet wide, and 2.5 feet tall. What is its volume?

Volume = length x width x height = $3 \times 2 \times 2.5 = 15$ cubic feet.

Worked Example 5: A cylindrical water tank has a radius of 4 meters and a height of 10 meters. What is its volume? (Use 3.14 for pi.)

Volume = $\pi \times r^2 \times h = 3.14 \times 16 \times 10 = 502.4$ cubic meters.

Think of a cylinder as a stack of circles: the area of one circle ($\pi \times r^2$) times how many circles high it is (the height). Volume formulas almost always work this way - base area times height.

The Pythagorean Theorem

For a **right triangle** (one with a 90-degree corner), the sides have a famous relationship:

$$a^2 + b^2 = c^2$$

where c is the **hypotenuse** - the longest side, always across from the right angle.

Worked Example 6: A ladder leans against a wall. The base of the ladder is 6 feet from the wall, and it reaches 8 feet up the wall. How long is the ladder?

The wall and ground form a right angle. The ladder is the hypotenuse. $a^2 + b^2 = c^2$ $6^2 + 8^2 = c^2$ $36 + 64 = c^2$ $100 = c^2$ $c = 10$ feet. (Take the square root of both sides.)

Worked Example 7: A right triangle has a hypotenuse of 13 cm and one leg of 5 cm. Find the other leg.

$$5^2 + b^2 = 13^2$$
$$25 + b^2 = 169$$
$$b^2 = 144$$
$$b = 12 \text{ cm.}$$

Memorize these friendly triples - they appear constantly: **3-4-5** and **5-12-13** (and their doubles, like 6-8-10). If you see two of these numbers in a right-triangle problem, you probably know the third instantly.

Angles and Scale Drawings

Angles are measured in degrees. Key facts: angles in a triangle always add to **180 degrees**. A straight line is 180 degrees. A full circle is 360 degrees. Complementary angles add to 90; supplementary angles add to 180.

Worked Example 8: Two angles of a triangle are 55 degrees and 70 degrees. What is the third angle?

$$180 - 55 - 70 = 55 \text{ degrees.}$$

Scale drawings show up as maps or blueprints: “1 inch represents 5 miles.” Set up a proportion.

Worked Example 9: On a map, 1 inch = 25 miles. Two cities are 3.5 inches apart on the map. How far apart are they really?

Multiply: $3.5 \times 25 = 87.5$ miles. That's it - scale problems are just multiplication once you identify the scale factor.

Composite Shapes and Test-Day Geometry Strategy

Sometimes the GED combines shapes - a window that's a rectangle with a semicircle on top, or a yard with a rectangular pool cut out of it. The strategy: **break it into pieces you know, solve each piece, then add or subtract.**

Worked Example 10: A running track encloses a rectangle 100 m by 60 m with a semicircle on each short end (the two semicircles make one full circle) with radius 30 m. What is the area enclosed by the track?

Step 1: Rectangle area = $100 \times 60 = 6,000$ square meters. Step 2: The two semicircles form one circle with radius 30. Area = $\pi \times 30^2 = 3.14 \times 900 = 2,826$ square meters. Step 3: Total = $6,000 + 2,826 = 8,826$ square meters.

Worked Example 11: A rectangular patio is 20 ft by 12 ft. A square hot tub 8 ft by 8 ft sits on it. How much patio surface is still exposed?

Step 1: Patio area = $20 \times 12 = 240$ square feet. Step 2: Hot tub area = $8 \times 8 = 64$ square feet. Step 3: Exposed = $240 - 64 = 176$ square feet.

When the Shape Isn't Named

Sometimes the GED shows an irregular shape - an L-shaped room, a yard with a notch cut out. Don't panic. The same break-into-pieces strategy works for perimeter too.

Worked Example 12: An L-shaped patio is made of two rectangles: one 12 ft by 10 ft, and one 8 ft by 6 ft attached to its side (not overlapping). What is the total area?

Step 1: Area 1 = $12 \times 10 = 120$ square feet. Step 2: Area 2 = $8 \times 6 = 48$ square feet. Step 3: Total = $120 + 48 = 168$ square feet.

For perimeter of irregular shapes, there's a shortcut: imagine “pushing” the notched edges outward to complete the rectangle. An L-shape's perimeter equals the perimeter of the full rectangle it was cut from - the notch adds as much as it removes. So find the bounding rectangle's perimeter and you're

done.

The deeper lesson: **every scary shape is just familiar shapes in disguise.** The test is checking whether you stay calm enough to see that. When you feel stuck, ask yourself: “What two normal shapes is this made of?” The answer is almost always a rectangle plus a triangle, a circle, or another rectangle.

Your test-day geometry checklist: 1. Sketch the shape and label every number you know. 2. Ask: around (perimeter), inside (area), or fill (volume)? 3. Find the formula on your sheet - don't rely on memory. 4. Watch for diameter vs. radius, and for units that need converting (inches to feet). 5. Check: do the units and the size of your answer make sense?

Try It - Lesson 5.2

1. A rectangle is 15 cm long and 9 cm wide. Find its perimeter and area.
2. A circle has a diameter of 20 inches. What is its area? (Use 3.14 for pi.)
3. A box is 5 ft by 4 ft by 3 ft. What is its volume?
4. A right triangle has legs of 9 m and 12 m. What is the hypotenuse?
5. On a blueprint, 1 cm represents 4 meters. A room measures 6 cm by 5 cm on the blueprint. What are its real dimensions?

Answer Key: 1. Perimeter = $2(15 + 9) = 48$ cm. Area = $15 \times 9 = 135$ square cm. 2. Radius = 10 inches (half the diameter!). Area = $3.14 \times 10^2 = 314$ square inches. 3. Volume = $5 \times 4 \times 3 = 60$ cubic feet. 4. $c^2 = 81 + 144 = 225$, so $c = 15$ m. (A 3-4-5 triple, tripled: 9-12-15.) 5. $6 \times 4 = 24$ meters by $5 \times 4 = 20$ meters.

Think About It: Geometry is math you can see. Every formula in this lesson describes something real - the fence around a yard, the paint on a wall, the water in a tank. When a problem confuses you, sketch it. Draw the rectangle. Label the sides. The picture almost always shows you which formula to use. Test-makers know most people skip the sketching. Don't be most people.

Key Terms

- **Perimeter:** The distance around a shape (linear units).
- **Area:** The surface a shape covers (square units).

- **Volume:** The space inside a 3D object (cubic units).
- **Radius:** The distance from a circle's center to its edge; half the diameter.
- **Hypotenuse:** The longest side of a right triangle, across from the right angle.
- **Pythagorean theorem:** $a^2 + b^2 = c^2$ for right triangles.
- **Scale factor:** The ratio relating a drawing's measurements to real measurements.

Reflection Questions

1. How does having a formula sheet change the way you should study geometry?
 2. Explain the difference between perimeter, area, and volume using a real object in your home.
 3. Why do you think the 3-4-5 triangle shows up so often on tests?
 4. What is your plan for circle problems so you never mix up radius and diameter again?
-

Lesson 5.3 - Data, Statistics, and Probability

The Average Isn't Always Average

Statistics sounds intimidating, but the GED tests four simple measures - and they're all arithmetic you already know:

- **Mean:** the regular "average." Add everything up, divide by how many numbers there are.
- **Median:** the middle number when the list is in order. (If there are two middle numbers, average those two.)
- **Mode:** the number that appears most often.
- **Range:** the biggest number minus the smallest - how spread out the data is.

Worked Example 1: A worker's hours for 5 weeks: 38, 42, 40, 38, 47. Find the mean, median, mode, and range.

Mean: $(38 + 42 + 40 + 38 + 47) / 5 = 205 / 5 = 41$ hours. Median: order them - 38, 38, 40, 42, 47. The middle is 40. Mode: 38 (appears twice). Range: $47 - 38 = 9$.

Worked Example 2: Test scores: 70, 80, 85, 90. Find the median.

Four numbers - the middle two are 80 and 85. Median = $(80 + 85) / 2 = 82.5$.

Why do all four measures exist? Because the mean can lie. If nine people earn \$30,000 and one earns \$3,000,000, the mean salary looks great - but the median tells the honest story. The GED will test whether you know *which* measure fits the situation.

Reading Graphs Like a Detective

The GED Math test is full of graphs. Three types dominate:

- **Bar graphs:** compare categories. Read the height of each bar against the axis. Watch for axes that don't start at zero - they exaggerate differences.
- **Line graphs:** show change over time. Steep sections = fast change; flat sections = no change.
- **Circle graphs (pie charts):** show parts of a whole. Percentages must add to 100%.

Worked Example 3: A circle graph shows a monthly budget: Rent 30%, Food 20%, Transportation 15%, Savings 10%, Other 25%. If total income is \$2,400, how much goes to savings?

10% of 2,400 = $0.10 \times 2,400 = \$240$.

The strategy for every graph question: (1) read the title and labels FIRST, (2) check the units and the scale, (3) find exactly what the question asks - then look at the graph. Most wrong answers come from reading the graph before reading the question.

Probability: What Are the Chances?

Probability = (favorable outcomes) / (total possible outcomes). It's always a number between 0 and 1, often written as a fraction, decimal, or percent.

Worked Example 4: A bag has 3 red marbles, 5 blue marbles, and 2 green marbles. What is the probability of pulling out a blue marble?

Total marbles = $3 + 5 + 2 = 10$. Blue = 5. Probability = $5/10 = 1/2 = 50\%$.

Worked Example 5: A spinner has 8 equal sections numbered 1-8. What is the probability of spinning an even number?

Even numbers: 2, 4, 6, 8 - that's 4 favorable outcomes out of 8 total. Probability = $4/8 = 1/2$.

For two events in a row (like flipping a coin twice), multiply the probabilities - but only if the events are independent. Probability of heads then heads = $(1/2) \times (1/2) = 1/4$. The GED rarely goes deeper than this.

The Word-Problem Attack Plan

Most GED math questions are word problems. Here is a four-step plan that works every time -

Underline, Plan, Solve, Check:

1. **Underline** the question being asked and the numbers that matter. Cross out extra information - the test includes numbers you don't need.
2. **Plan:** What is this problem really asking? Which operation or formula fits? Write the setup before touching the calculator.
3. **Solve:** Do the arithmetic carefully. Use the calculator on Part 2 - it's there to help, not to test your pride.
4. **Check:** Does the answer make sense? If a problem asks for the cost of 3 shirts at \$12 each and you get \$360, something went wrong. Estimates are your safety net.

Worked Example 6: A store marks up a \$45 jacket by 20%, then puts it on sale for 10% off the marked-up price. What is the final price?

Underline: start \$45, up 20%, then 10% off that result. Ask: final price. Plan: Step 1 - find the marked-up price. Step 2 - take 10% off THAT. Solve: Markup = $45 \times 1.20 = \$54$. Sale price = $54 \times 0.90 = \$48.60$. Check: Final price should be between \$45 and \$54 - \$48.60 makes sense. (Common trap: taking 10% off the original \$45. Read carefully!)

Percent Problems: The GED's Favorite

Percents appear everywhere on the GED - discounts, tax, tips, interest, data changes. Three tools handle them all:

- **"Percent of":** convert the percent to a decimal and multiply. 20% of 80 = $0.20 \times 80 = 16$.
- **Percent increase/decrease:** (change) / (original). A price rises from \$40 to \$50: change = 10, $10/40 = 0.25 = 25\%$ increase.
- **Working backwards:** if \$60 is the price AFTER a 20% discount, the original price isn't \$72. The \$60 represents 80% of the original: original = $60 / 0.80 = \$75$.

Worked Example 7: A \$120 coat is on sale for 25% off. What is the sale price?

Two ways. Way 1: discount = $0.25 \times 120 = \$30$; sale price = $120 - 30 = \$90$. Way 2 (faster): sale price = $120 \times 0.75 = \$90$. Learn Way 2 - "paying 75%" is one multiplication.

Worked Example 8: A restaurant bill is \$48 before tax. Tax is 8% and you want to leave a 20% tip on the pre-tax amount. What is the total?

Step 1: Tax = $0.08 \times 48 = \$3.84$. Step 2: Tip = $0.20 \times 48 = \$9.60$. Step 3: Total = $48 + 3.84 + 9.60 = \$61.44$. Check: total should be roughly $48 + 4 + 10 = \$62$. It is.

Estimating: Your Secret Weapon

Before you calculate, estimate. Round the numbers to something friendly and get a rough answer in your head. Then your real answer should land nearby.

Example: 19% of 82. Round to 20% of 80 = 16. Now calculate: $0.19 \times 82 = 15.58$. Close to 16 - you're on track. If you'd gotten 155.8 (decimal slip), the estimate would scream that something's wrong.

Estimating is also a legitimate test strategy: on multiple-choice questions, you can often eliminate two or three answers as obviously too big or too small before doing any real math. Combined with the Check step of your attack plan, it makes careless errors nearly impossible to miss.

Try It - Lesson 5.3

1. Data: 12, 15, 18, 12, 21, 12. Find the mean, median, mode, and range.
2. A pie chart shows 40% of 250 students ride the bus. How many students is that?
3. A box holds 6 black pens and 4 red pens. What is the probability of randomly picking a red pen?
4. A phone plan costs \$30 per month plus \$0.10 per text. Last month's bill was \$45. How many texts were sent?
5. A class average rose from 72 to 81. What is the percent increase?

Answer Key: 1. Mean = $(12+15+18+12+21+12)/6 = 90/6 = 15$. Ordered: 12, 12, 12, 15, 18, 21. Median = $(12+15)/2 = 13.5$. Mode = 12. Range = $21-12 = 9$. 2. $0.40 \times 250 = 100$ students. 3. 4 red out of 10 total = $4/10 = 2/5 = 40\%$. 4. $30 + 0.10t = 45$. Subtract 30: $0.10t = 15$. Divide by 0.10: $t = 150$ texts. 5. Increase = $81 - 72 = 9$. Percent increase = $9/72 = 0.125 = 12.5\%$.

Think About It: Statistics and probability are the math of real life - budgets, medical risks, election polls, sports. Every time you decide whether a deal is good or a risk is worth taking, you are doing this math informally. This lesson just gives names and precision to thinking you already do. You are not learning something foreign. You are sharpening something you own.

Key Terms

- **Mean:** The sum of values divided by the count; the arithmetic average.
- **Median:** The middle value in an ordered list.
- **Mode:** The most frequently occurring value.
- **Range:** Maximum minus minimum; a measure of spread.
- **Probability:** Favorable outcomes divided by total possible outcomes; always between 0 and 1.
- **Percent:** Parts per hundred; $25\% = 25/100 = 0.25$.

Reflection Questions

1. When would the median describe a group better than the mean? Give a real example.
 2. What is the most common mistake people make when reading graphs, and how will you avoid it?
 3. Walk through the Underline-Plan-Solve-Check method on a problem from your own life (a bill, a recipe, a schedule).
 4. Which topic in this module felt hardest two weeks ago, and how does it feel now?
-

Module 5 Assignment

Title: My Math Strategy Sheet

Write a 1-2 page paper: (1) List the 5 formulas or procedures from this module you most need to remember, in your own words. (2) Solve 3 original word problems you create from your own life (a budget, a room measurement, a schedule) showing all four attack-plan steps. (3) Write your personal test-day plan: how you'll handle Part 1 (no calculator), when you'll use the formula sheet, and what you'll do if you freeze on a question.

Module 5 Quiz

1. Solve: $5x + 8 = 43$.
2. Solve: $2(x - 3) = 14$.
3. Solve and state the graph direction: $-4x > 16$.

4. If $h(x) = 3x - 7$, what is $h(5)$?
5. Find the slope of the line through (1, 2) and (5, 14).
6. A rectangle is 20 m by 14 m. Find its perimeter and area.
7. A cylinder has radius 3 cm and height 8 cm. Find its volume (use 3.14 for π).
8. A right triangle has legs 6 and 8. What is the hypotenuse?
9. Data: 5, 9, 7, 5, 12. Find the mean, median, mode, and range.
10. A bag has 4 green and 6 yellow balls. What is the probability of drawing green?

Module 5 Essay

Prompt: In 300-500 words, describe your relationship with math - where your confidence or anxiety comes from - and explain how the strategies in this module (the balance-scale idea, the formula sheet, the word-problem attack plan) change the way you will approach the GED Math test.

Module 5 Submission Instructions

Submit your assignment, quiz answers, and essay as separate files (or one combined file clearly labeled) to noahsandersadvocacy@gmail.com with the subject line: [Your Name] - Module 5 - [Assignment Type]. See General Submission Instructions for file naming and format.

MODULE 6: Science Thinking (Weeks 11-12)

Lesson 6.1 - Thinking Like a Scientist

The GED Science Test Is Not a Science Quiz

Here is the most important thing to know: the GED Science test (90 minutes) barely tests memorized facts. It tests **reasoning** - your ability to read a passage about an experiment, look at a chart, and draw a logical conclusion. You do not need to have taken biology or chemistry. You need to think clearly about evidence. That is a skill, not a subject, and it can be learned in two weeks.

You need 145 out of 200 to pass, same as every subject. The test includes **two short-answer questions** - about 10 minutes each - where you write a short paragraph analyzing experimental data. We will practice the exact structure for those in Lesson 6.3. For now: most questions give you a passage and ask what it *means*. Read carefully, trust the text, and don't bring in outside opinions.

The Scientific Method

Science is a process for answering questions without fooling yourself. The steps:

1. **Ask a question.** ("Does fertilizer help plants grow?")
2. **Form a hypothesis** - a testable prediction. ("Plants given fertilizer will grow taller than plants without it.")
3. **Design an experiment** with variables controlled.
4. **Collect data** - measurements, observations.
5. **Analyze** the data and draw a **conclusion**: was the hypothesis supported?
6. **Communicate** results so others can check your work.

The GED loves asking which step a scientist is doing, or what's wrong with an experiment's design. If you know the steps, these are free points.

Variables: The Heart of Every Experiment

Every experiment question comes down to three variables:

- **Independent variable:** what the scientist CHANGES on purpose. (The amount of fertilizer.)

- **Dependent variable:** what is MEASURED - the result. (The plants' height.) It *depends* on the independent variable.
- **Control variables:** everything kept THE SAME so the test is fair. (Same soil, same water, same sunlight, same type of plant.)

There's also the **control group** - the group that gets NO treatment (no fertilizer), used as a baseline for comparison.

Experiment Walkthrough 1: A researcher wants to know if a new headache medicine works. She gives 50 patients the new medicine and 50 patients a sugar pill (placebo), then records how many in each group report feeling better after one hour.

- Independent variable: whether the patient got the real medicine or the placebo.
- Dependent variable: how many patients felt better (the measured result).
- Control group: the 50 patients who got the sugar pill.
- Why the placebo? Because some people feel better just from *believing* they took medicine (the placebo effect). Without a control group, you can't tell if the medicine worked or if hope did.

Experiment Walkthrough 2: A student tests whether light color affects plant growth. She puts one plant under red light, one under blue light, and one under green light. All plants are the same species, get the same water, same soil, same hours of light per day. After 30 days she measures each plant's height.

- Independent variable: color of light.
- Dependent variable: plant height after 30 days.
- Control variables: species, water, soil, hours of light.
- What's missing? A plant under NORMAL white light as a control group - otherwise she knows which color is best, but not whether colored light helps or hurts compared to normal conditions. Spotting the missing control is a classic GED question.

Reading Experiments Like a Skeptic

When the GED shows you an experiment, ask three questions:

1. **What is being compared?** Find the independent variable and the groups.
2. **Is it a fair test?** Only ONE thing should change between groups. If two things change, the experiment is flawed - you can't tell which caused the result.

3. **Do the conclusions match the data?** A conclusion that goes beyond what was measured is unsupported, no matter how sensible it sounds.

Experiment Walkthrough 3 (find the flaw): A company claims its new shampoo grows hair faster. They test it on 20 people - all men aged 20-25 - for two weeks, with no comparison group. They report that hair grew an average of 0.5 inches.

Problems: (1) No control group - hair grows anyway; maybe it would have grown 0.5 inches without the shampoo. (2) Only young men tested - results may not apply to anyone else. (3) Two weeks is short, and 20 people is a small sample. On the GED, "the experiment lacks a control group" is very often the right answer.

Correlation vs. Causation

Two things happening together (**correlation**) does not mean one causes the other (**causation**). Ice cream sales and drowning deaths rise together - not because ice cream causes drowning, but because both rise in summer (a third factor).

The GED tests this with graphs: "The graph shows that as study time increases, test scores increase. What can you conclude?" The correct answer is that they are correlated - NOT that studying causes higher scores (maybe stronger students simply study more). When in doubt, choose the cautious answer. Science is humble about what data proves.

Designing a Fair Test From Scratch

Let's build an experiment the way a scientist would - this is exactly the thinking the GED rewards.

Experiment Walkthrough 4: You wonder whether studying with music helps you memorize vocabulary words. Design the test.

Step 1: Hypothesis - "Students who study vocabulary with music will remember more words than students who study in silence." Step 2: Independent variable - music vs. silence. Dependent variable - number of words remembered on a quiz. Step 3: Control variables - same word list, same study time (20 minutes), same quiz, students of similar ability, same time of day, same room. Step 4: Run it. Group A studies with music, Group B in silence. Both take the same quiz. Step 5: Compare averages. If Group A scores clearly higher, the hypothesis is supported.

Now the GED-style follow-up questions practically write themselves: "What is the control group?" (Group B, the silence group.) "A critic says the music group had stronger students to begin with. What is the problem?" (The groups weren't equivalent - a confounding variable.) "How could the

researcher improve the design?" (Randomly assign students to groups, so ability is spread evenly.)

The sample-size rule: bigger samples give more trustworthy results. Testing 5 people proves almost nothing; testing 500 proves a lot. When a GED question asks what's wrong with a study, "the sample was too small" is a frequent correct answer - along with "no control group" and "more than one variable changed."

Replication: real science requires that other researchers can repeat your experiment and get similar results. One study is a hint; repeated studies are evidence. If a headline screams about a single small study, be skeptical - that's not how scientific confidence is built.

Bias: The Enemy of Good Science

Scientists are human, and humans have expectations. **Bias** is any influence that pushes results toward what someone wants to see. Good experiments are designed to fight it:

- **Blind studies:** participants don't know which group they're in (medicine vs. placebo). This kills the placebo effect as a confounder.
- **Double-blind studies:** even the researchers don't know who's in which group until the end. This stops researchers from unconsciously treating groups differently or reading results optimistically.
- **Random assignment:** participants are assigned to groups by chance, so the groups start out equivalent.

Experiment Walkthrough 5: A juice company funds a study finding its juice "boosts immunity." The study used 12 people, had no control group, and the company's own scientists ran it.

Problems stack up: tiny sample, no control, and a funding source with a financial interest in the outcome. On the GED, "the study was funded by a company that benefits from the results" is a legitimate criticism - it's called a **conflict of interest**. It doesn't prove the result is wrong, but it means you should demand stronger evidence: bigger samples, independent replication, a proper control.

The takeaway for test day: when asked to evaluate a study's weakness, look for bias first. Who ran it, who paid for it, who knew what - these details are often hiding in the passage, and they're often the point of the question.

Try It - Lesson 6.1

1. A scientist hypothesizes that music improves running speed. She has one group run with music and another run without, timing both. Identify the independent and dependent variables.

2. In the experiment above, name two control variables the scientist should keep the same.
3. A study finds that people who drink more coffee report higher stress. A headline says “Coffee Causes Stress.” What is wrong with this conclusion?
4. Which step of the scientific method is this: “Seedlings in sunlight grew 3 cm taller than seedlings in shade”?
5. An experiment tests two fertilizers but uses different plant species for each fertilizer. What is the flaw, and how would you fix it?

Answer Key: 1. Independent variable: whether runners listened to music. Dependent variable: running speed (time). 2. Any two of: same distance, same runners’ fitness level, same track/conditions, same time of day, same type of music. 3. Correlation is not causation. Maybe stressed people drink more coffee (reverse causation), or a third factor (like a demanding job) causes both. The study shows a relationship, not a cause. 4. Collecting/analyzing data - recording measurements and comparing results. 5. Flaw: two variables changed at once (fertilizer AND species), so you can’t tell which caused any difference in growth. Fix: use the same species for both fertilizers.

***Think About It:** You already think like a scientist more than you know. Every time you changed one thing about a recipe and tasted the difference, or tried a new bus route and compared the travel time, you ran an experiment with variables and a conclusion. The GED just asks you to do on paper what you do in life. Trust your instincts - then check them against the data.*

Key Terms

- **Hypothesis:** A testable prediction about what will happen in an experiment.
- **Independent variable:** The factor the experimenter deliberately changes.
- **Dependent variable:** The factor that is measured; the result.
- **Control group:** The untreated group used as a baseline for comparison.
- **Control variables:** Factors kept constant so the test is fair.
- **Correlation:** A relationship between two things; does not prove one causes the other.
- **Conclusion:** The judgment about whether data supported the hypothesis.

Reflection Questions

1. Why do scientists use control groups? What goes wrong without one?
 2. Describe an “experiment” you’ve run in your own life (cooking, budgeting, fitness). What were your variables?
 3. Why is “correlation does not prove causation” one of the most important ideas in science?
 4. What makes a scientific conclusion trustworthy?
-

Lesson 6.2 - Life Science and Physical Science Essentials

Learn the Hits, Skip the Deep Cuts

You cannot learn all of biology and physics in two weeks - and you don't need to. The GED tests a short list of high-frequency topics over and over. This lesson covers exactly those: the greatest-hits version. For each topic, you'll get the core idea plus how it typically appears on the test.

Cells and Body Systems

The **cell** is the basic unit of life. Two facts carry you far: (1) cells need energy, which they get from food and oxygen; (2) different cells do different jobs (muscle cells contract, nerve cells carry signals, blood cells carry oxygen).

The human body has systems that work together: - **Circulatory**: heart and blood vessels move oxygen and nutrients around. - **Respiratory**: lungs take in oxygen, release carbon dioxide. - **Digestive**: breaks food into nutrients the blood can carry. - **Nervous**: brain, spinal cord, and nerves coordinate everything. - **Immune**: fights infections.

GED questions usually show a diagram and ask what happens if one part fails, or how two systems cooperate. Example: “During exercise, heart rate and breathing rate both increase. Why?” Because muscles need more oxygen - the respiratory system takes in more, and the circulatory system delivers it faster. Systems teamwork is the whole theme.

Ecosystems: Everything Is Connected

An **ecosystem** is a community of living things plus their environment. Energy flows through it in one direction:

Producers (plants - they make food from sunlight) -> **consumers** (herbivores eat plants; carnivores eat herbivores) -> **decomposers** (bacteria and fungi break down dead things, returning nutrients to the soil).

This is the **food chain** (or food web, when it's interconnected). Key GED ideas: - If you remove one level, the levels around it change. Remove the wolves, deer overpopulate, plants get eaten bare. (This actually happened at Yellowstone - twice.) - Energy is LOST at each level (as heat, movement, waste). That's why there are always fewer top predators than plants - it takes a huge base of plants to support a few wolves. - **Photosynthesis**: plants convert sunlight + water + carbon dioxide into food (glucose) + oxygen. **Cellular respiration** is the reverse: organisms break down glucose with oxygen to release energy. These two reactions are mirror images - a favorite test comparison.

Energy: It Changes Form, Never Disappears

The law of **conservation of energy**: energy can't be created or destroyed, only converted from one form to another. A car engine converts chemical energy (gasoline) into motion + heat. A light bulb converts electrical energy into light + heat.

Two forms to know: - **Kinetic energy**: energy of motion. Faster and heavier = more kinetic energy. - **Potential energy**: stored energy - a stretched rubber band, a ball held above the ground, a charged battery.

GED questions often show an energy diagram (a roller coaster is the classic) and ask where kinetic energy is greatest (the bottom of the hill - fastest) and where potential energy is greatest (the top - highest). Energy constantly trades between the two, but the total stays the same.

Motion and Forces

Three ideas cover nearly every physics question: 1. **Speed = distance / time**. If a car travels 150 miles in 3 hours, its speed is 50 mph. 2. **Forces change motion**. A force is a push or pull. No net force = no change in motion (objects at rest stay at rest; moving objects keep moving - that's inertia). 3. **Friction** opposes motion. **Gravity** pulls everything downward at the same rate (a heavy ball and a light ball fall together - air resistance aside).

Experiment Walkthrough: A student rolls balls of different masses down the same ramp and measures how far each rolls across the floor. She finds the heavier balls roll farther.

A GED question might ask: what is the independent variable? (The mass of the ball.) What should she keep constant? (The ramp height, the release point, the floor surface.) What explains the result?

(Greater mass = more momentum carried onto the floor - but note friction eventually stops all of them.) The physics fact matters less than reading the experiment correctly.

Matter and Chemical Reactions

Matter is anything with mass that takes up space. Three states: solid (fixed shape), liquid (fixed volume, takes the container's shape), gas (fills the container). Heating matter usually makes particles move faster - solids melt to liquids, liquids evaporate to gases.

A **chemical reaction** rearranges atoms into new substances. Signs a chemical reaction happened: color change, gas bubbles, heat or light produced, a solid (precipitate) forming in a liquid. Rusting, burning, baking, and digestion are all chemical reactions.

Two laws the GED loves: - **Conservation of mass:** in a chemical reaction, atoms are rearranged, not created or destroyed. The total mass before equals the total mass after. If a sealed container's reaction seems to "lose" mass, a gas escaped. - **Acids and bases:** acids have pH below 7 (vinegar, lemon juice), bases above 7 (soap, baking soda), 7 is neutral (pure water). When acids and bases mix, they neutralize each other.

Putting It Together: Systems Thinking

Here's the thread connecting this whole lesson: **systems affect each other**. Nothing in science works in isolation, and the GED tests whether you can follow the chain of effects.

Experiment Walkthrough: A town builds a dam on its river. A year later, fishermen downstream report smaller catches, farmers report richer soil near the reservoir, and the local power plant reports steady electricity output.

A GED question might ask: "Which of these is a trade-off of building the dam?" The answer connects the systems: the dam creates electricity and irrigation benefits (physical/human systems) but disrupts fish migration and downstream ecosystems (life systems). There is rarely a free lunch in science - every intervention ripples.

Try tracing your own chain: burning coal (chemical energy -> heat -> electricity) releases carbon dioxide (matter) into the atmosphere, which traps heat (energy), warming the climate, which changes weather patterns, which affects ecosystems and farms. One action, five systems. When you can follow chains like this, you're thinking the way the test wants you to think - and the way scientists think about the real world.

Reading a Science Diagram Without Fear

GED science passages often include diagrams - a digestive system, a circuit, a rock cycle. You don't need to have seen the diagram before. Read it like a map:

1. **Read every label.** Labels are the legend; they tell you what each part is.
2. **Follow the arrows.** Arrows show direction of flow - blood, energy, water, signals. The story of the diagram is in the arrows.
3. **Ask "what if."** The most common diagram question: "What would happen if X were removed or blocked?" Trace the arrows downstream from X - everything after it is affected, everything before it is not.

Example: a diagram shows the path of food: mouth -> esophagus -> stomach -> small intestine -> large intestine. "If the small intestine were blocked, which process would be most directly affected?" Nutrient absorption - that's the small intestine's job, and everything downstream (the large intestine receiving nutrients) suffers too. You didn't need anatomy class; you needed the arrows.

Try It - Lesson 6.2

1. In a food chain (grass -> rabbits -> foxes), what happens to the fox population if a disease kills most of the rabbits? Explain using energy flow.
2. A roller coaster is at the very top of its tallest hill, momentarily stopped. Where is its potential energy greatest, and where will its kinetic energy be greatest?
3. A sealed jar contains baking soda and vinegar separated by a divider. The divider is removed, they react, and gas forms. A student weighs the sealed jar before and after. What will the scale show, and why?
4. Two identical cars travel the same road. Car A goes 60 mph, Car B goes 30 mph. Which has more kinetic energy, and why does that matter for braking distance?
5. After running upstairs, your heart pounds and you breathe hard. Which two body systems are responding, and what are they delivering to your muscles?

Answer Key: 1. The fox population will shrink. Foxes depend on rabbits for food energy; with fewer rabbits, less energy flows up to the fox level, so fewer foxes can survive. Some may migrate or starve. 2. Potential energy is greatest at the top (maximum height). Kinetic energy will be greatest at the bottom of the hill, where the coaster moves fastest. 3. The scale will show the SAME weight. Conservation of mass: the gas was already inside the sealed jar as part of the reactants - atoms

rearranged, none left, so total mass is unchanged. 4. Car A has more kinetic energy - kinetic energy increases with the square of speed, so doubling speed quadruples the energy. That means much longer braking distance and far more dangerous crashes at higher speeds. 5. The respiratory system (taking in more oxygen) and the circulatory system (pumping oxygen-rich blood faster). They are delivering oxygen and nutrients to the working muscles and removing carbon dioxide.

Think About It: Notice what this lesson did NOT ask you to do: memorize the periodic table, name the parts of a cell under a microscope, or solve physics equations. The GED rewards understanding relationships - how systems connect, how energy flows, how evidence supports a claim. If you can explain the “why” behind each topic here in your own words, you are ready for the science content on this test.

Key Terms

- **Cell:** The basic unit of life.
- **Ecosystem:** A community of organisms plus their physical environment.
- **Producer / Consumer / Decomposer:** Organisms that make food, eat other organisms, or break down dead matter.
- **Photosynthesis:** Plants converting sunlight, water, and CO₂ into food and oxygen.
- **Kinetic / Potential energy:** Energy of motion vs. stored energy.
- **Conservation of energy/mass:** Energy and mass are never created or destroyed, only transformed.
- **pH scale:** Measures acidity (below 7) vs. basicity (above 7); 7 is neutral.

Reflection Questions

1. Pick one body system and explain what goes wrong in the whole body if it fails. What does that tell you about how systems depend on each other?
 2. Why are there always fewer predators than prey in an ecosystem? Use energy loss in your answer.
 3. Give a real-life example of energy changing form (not from this lesson).
 4. Which topic in this lesson was newest to you, and can you explain it to someone else now?
-

Lesson 6.3 - Earth, Space, and Data Skills

The Planet You Live On

Earth science on the GED focuses on cycles and systems - the same “everything is connected” thinking from last lesson, applied to the planet.

The water cycle is the big one. Water moves in a continuous loop: **evaporation** (sun heats oceans/lakes, water becomes vapor) -> **condensation** (vapor cools into clouds) -> **precipitation** (rain/snow falls) -> **collection** (rivers, lakes, oceans - and groundwater). The total amount of water on Earth stays roughly constant; it's the same water the dinosaurs drank, endlessly recycled. GED questions show a diagram and ask you to identify stages or predict what happens if one stage changes (more heat = more evaporation = more precipitation somewhere).

Weather vs. climate - a classic distinction the test loves: - **Weather** is short-term: today's temperature, this week's storm. It changes daily. - **Climate** is long-term: the average pattern over 30+ years. “Climate is what you expect; weather is what you get.”

Other high-frequency topics: **erosion** (wind and water wearing down rock and soil - slow but powerful over time), **plate tectonics** (Earth's crust is cracked into plates that move; their collisions cause earthquakes and volcanoes), and **natural resources** (renewable like solar and wind vs. nonrenewable like coal and oil - once burned, they're gone on human timescales).

The Solar System in Two Minutes

You need the basics: the Sun is a star at the center; eight planets orbit it (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune). Key ideas that actually get tested: - **Day and night** are caused by Earth's rotation (spinning on its axis, once every 24 hours). - **Seasons** are caused by Earth's TILT, not its distance from the Sun. When your hemisphere tilts toward the Sun, it's summer - longer days, more direct light. - **The Moon's phases** come from the changing angles of sunlight hitting the Moon as it orbits Earth - the Moon itself doesn't change shape. - **Gravity** holds it all together: the Sun's gravity keeps planets in orbit; Earth's gravity holds the Moon.

The seasons misconception (thinking summer = closer to the Sun) is one of the most-tested wrong ideas in science. Remember: tilt, not distance. In fact, Earth is slightly FARTHER from the Sun during the Northern Hemisphere's summer.

Data Skills: Charts, Graphs, and Tables

About half the Science test is reading visual data. The skills transfer directly from Math Module 5:

1. **Read the title, labels, and units first.** A graph titled “Average Monthly Rainfall” with inches on the y-axis tells you exactly what you’re looking at before you read a single number.
2. **Find the trend.** Is it going up, down, flat, or cycling? Most questions ask “what does the data show?” - the answer is the trend.
3. **Compare values precisely when asked.** “Which month had the highest rainfall?” means finding the tallest bar or highest point - then reading its value AND its label.
4. **Watch for the trap answers.** Wrong choices often reverse the trend, use the wrong units, or state something the data doesn’t actually show.

Chart-Reading Example: A line graph shows a city’s average temperature by month: rising from 40F in January to 85F in July, then falling back to 42F in December.

- “Describe the trend”: Temperatures rise through spring, peak in summer, and fall through autumn - a yearly cycle.
- “Which month is hottest?": July, at 85F.
- “A student claims the temperature rises every month of the year.” Is this supported? No - it falls from July to December. The claim ignores half the data. GED wrong answers do this constantly: true for part of the data, false overall.

Table Example: A table shows plant growth under three light conditions:

Light	Week 1	Week 2	Week 3
Full sun	2 cm	5 cm	9 cm
Partial shade	2 cm	4 cm	6 cm
Full shade	1 cm	2 cm	2 cm

Conclusion supported by the data: plants grew tallest in full sun. Conclusion NOT supported: “plants need sunlight to survive” - the shaded plants still grew a little, and three weeks doesn’t prove survival. Stay inside what the data shows.

The Short-Answer Questions: Claim + Evidence + Reasoning

The Science test includes **two short-answer questions**. Each gives you a passage - usually about an experiment - and asks you to analyze it in writing. You get about 10 minutes per question.

Graders score them 0-2 points each. Here's the structure that earns full credit:

1. **Claim:** State your answer clearly in one sentence. ("The data support the hypothesis that fertilizer increases plant growth.")
2. **Evidence:** Cite specific numbers or observations from the passage. ("Plants with fertilizer averaged 12 cm; plants without averaged 7 cm.")
3. **Reasoning:** Explain WHY the evidence supports your claim - connect the dots. ("Because the only difference between the groups was fertilizer, the 5 cm difference in growth can be attributed to it.")

That's it. Three moves. Most test-takers write vague summaries and earn 1 point. Specific numbers + explicit reasoning earns 2.

Worked Short-Answer Example:

Passage: A student tests whether salt affects how fast ice melts. She puts one ice cube in plain water and one in salt water, both at room temperature. After 20 minutes, the ice cube in salt water has melted completely; the one in plain water is half-melted.

Question: Based on the evidence, does salt affect the rate at which ice melts? Explain.

Strong response: "Yes, salt increases the rate at which ice melts (claim). After 20 minutes, the ice cube in salt water had melted completely while the ice cube in plain water was only half-melted (evidence). Since both cubes were the same size and kept at the same room temperature, the only difference was the salt, so the faster melting must be caused by the salt (reasoning)."

Notice: every sentence does a job. No filler, no opinion, no extra facts from outside the passage. Write like this and the short answers become easy points.

Try It - Lesson 6.3

1. In the water cycle, what process turns liquid water into vapor, and what energy source drives it?
2. A friend says "It's freezing today, so much for global warming." Explain the weather vs. climate distinction to correct them.
3. Why do we have seasons? Give the correct explanation and name the common misconception.
4. A bar graph shows monthly rainfall: Jan 2 in, Feb 3 in, Mar 5 in, Apr 4 in. Which month had the most rain, and what was the trend from Jan to Mar?
5. Write a short-answer response (claim + evidence + reasoning): A student grows two identical plants. Plant A gets 8 hours of sunlight daily; Plant B gets 2 hours. After a month, Plant A is 30

cm tall and Plant B is 12 cm tall. Does sunlight amount affect plant growth?

Answer Key: 1. Evaporation turns liquid water into vapor; the Sun's heat energy drives it. 2. Weather is short-term conditions (today's freeze); climate is the long-term average pattern over decades. One cold day doesn't change the 30-year trend - that's like saying one bad test grade means you're a bad student. 3. Seasons are caused by Earth's axial tilt - the hemisphere tilted toward the Sun gets summer. The misconception is that summer happens when Earth is closer to the Sun (distance is not the cause). 4. March had the most rain (5 inches). The trend from January to March was increasing rainfall. 5. Sample strong response: "Yes, greater sunlight increases plant growth (claim). After one month, Plant A (8 hours of sun) reached 30 cm while Plant B (2 hours) reached only 12 cm (evidence). Because the plants were identical and sunlight was the only difference, the 18 cm height gap must be caused by the difference in sunlight (reasoning)."

***Think About It:** Look at how far you've come. Two weeks ago, "scientific reasoning" might have sounded like something other people do in labs. Now you can dissect an experiment's variables, spot a missing control group, read a data table, and write a structured scientific argument. That IS thinking like a scientist. The test doesn't want a walking encyclopedia - it wants someone who looks at evidence and thinks clearly. That's you now.*

Key Terms

- **Water cycle:** The continuous movement of water through evaporation, condensation, precipitation, and collection.
- **Weather / Climate:** Short-term atmospheric conditions vs. long-term average patterns.
- **Erosion:** The wearing away of rock and soil by wind, water, or ice.
- **Plate tectonics:** The movement of Earth's crustal plates, causing earthquakes and volcanoes.
- **Renewable / Nonrenewable resources:** Resources that replenish naturally vs. those used up on human timescales.
- **Rotation / Revolution:** Earth's spin on its axis (day/night) vs. its orbit around the Sun (year).

Reflection Questions

1. Why is the seasons misconception (distance from the Sun) so common, and why is it wrong?
2. What is the single most important habit when reading a chart or graph on the test?

3. Practice explaining claim + evidence + reasoning to someone in your own words. What makes the reasoning step different from just repeating the evidence?
 4. Which science topic from Modules 5 and 6 do you feel most confident about now? Which needs one more review?
-

Module 6 Assignment

Title: My Science Lab Report

Write a 1-2 page paper: (1) Design an original experiment to answer a question from your daily life (does a phone charger charge faster in airplane mode? do plants near a window grow faster?). State your hypothesis, identify all three variable types, and describe your control group. (2) Create a small data table with made-up-but-realistic results, then write a claim + evidence + reasoning paragraph analyzing them. (3) Write your test-day plan for the Science test: how you'll attack experiment passages, how you'll budget the 90 minutes, and your approach to the two short-answer questions.

Module 6 Quiz

1. State the six steps of the scientific method in order.
2. In an experiment testing whether fertilizer amount affects tomato yield, identify the independent variable, dependent variable, and one control variable.
3. Why do experiments need a control group?
4. Explain the difference between correlation and causation, with an example.
5. Name the three stages of the water cycle where water changes location or form, and the process at each stage.
6. Explain the difference between weather and climate.
7. What causes Earth's seasons?
8. State the law of conservation of energy and give one example of energy changing form.
9. In a food chain, why are there fewer top predators than producers?
10. What are the three moves of a strong GED Science short-answer response?

Module 6 Essay

Prompt: In 300-500 words, explain why the GED Science test measures reasoning more than memorized facts. Use at least two examples from this module (an experiment walkthrough, a chart-reading example, or a short-answer structure) to show what “thinking like a scientist” actually looks like on test day.

Module 6 Submission Instructions

Submit your assignment, quiz answers, and essay as separate files (or one combined file clearly labeled) to **noahsandersadvocacy@gmail.com** with the subject line: [Your Name] - Module 6 - [Assignment Type]. See General Submission Instructions for file naming and format.

MODULE 7: Social Studies (Weeks 13-14)

Lesson 7.1 - Civics and Government

The Rules of the Game

Here is the good news about the GED Social Studies test: it is not a trivia contest. You will not be asked to name the 14th president or recite the exact year of some treaty. The test is mostly about **reading** - reading a short passage, a chart, a map, or a political cartoon, and then answering questions about what it means. The civics knowledge you need is the foundation that helps you understand those documents.

Think of the U.S. government like a game. Every game has rules, and if you know the rules, you can follow what is happening on the field. The Constitution is the rulebook. This lesson gives you the rules that show up on the test again and again.

The Constitution's Big Ideas

The Constitution was written in 1787, and it is built on a handful of big ideas. The GED loves these ideas - learn them cold.

Popular sovereignty means the people are the source of power. The Constitution opens with "We the People" for a reason: the government's authority comes from the citizens, not from a king or a dictator. On the test, a passage about voting rights or elections is usually testing this idea.

The rule of law means nobody is above the law - not the president, not a police officer, not a judge. Everyone, including the government itself, has to follow the rules. If a question describes a leader ignoring the law, the concept being tested is almost always the rule of law.

Limited government means the government's power has boundaries. The Constitution does not just say what the government *can* do - it lists what it *cannot* do (like establishing a religion or taking property without fair payment). The Bill of Rights is mostly a list of limits.

Separation of powers means the government's power is split into three branches: legislative (Congress makes laws), executive (the president enforces laws), and judicial (the courts interpret laws). The founders split power because they feared one person or group having too much of it.

Checks and balances is how the branches keep each other in line. Congress passes a law, but the president can veto it. The president appoints judges, but the Senate has to approve them. The courts can strike down laws, but Congress can change the law or even amend the Constitution. Every branch has a way to push back on the others. Test questions love asking “which check” is being used in a scenario - so learn the main ones: veto, override, judicial review, impeachment, Senate confirmation.

Federalism means power is divided between the national (federal) government and the state governments. This is different from separation of powers - that splits power *horizontally* between branches, while federalism splits it *vertically* between levels of government.

A memory trick students use: **“People Rule, Law Rules, Power Splits Three Ways, Branches Check Each Other, States Share Power.”** Say it a few times. It covers popular sovereignty, rule of law, separation of powers, checks and balances, and federalism.

The Three Branches: Who Does What

The single most tested civics topic is the three branches. Know each branch’s main job, its leaders, and its key powers.

The Legislative Branch - Congress - makes the laws. Congress has two parts: the Senate (100 members, two per state, six-year terms) and the House of Representatives (435 members, based on state population, two-year terms). Together they pass laws, control government spending (the “power of the purse”), declare war, and approve treaties and presidential appointments. The House starts all tax bills and impeaches officials; the Senate holds impeachment trials and confirms judges and cabinet members.

The Executive Branch - the president - enforces the laws. The president is commander-in-chief of the military, signs or vetoes bills, makes treaties (with Senate approval), appoints federal judges and cabinet heads, and can issue executive orders directing how laws are carried out. The vice president and the cabinet (heads of departments like Defense, Education, and Treasury) are part of this branch too.

The Judicial Branch - the courts - interprets the laws. The Supreme Court is the highest court, with nine justices who serve for life. The courts decide what laws mean and whether they follow the Constitution. This power is called **judicial review**, and it was established in the 1803 case *Marbury v. Madison*. Federal courts also settle disputes between states and hear cases about federal law.

How this shows up on the test: you might read a short scenario - say, the president refuses to enforce a law Congress passed - and be asked which branch is doing what, or which check and

balance applies. If you can sort every action into “makes / enforces / interprets,” you will get these right.

Federal vs. State Power

The Constitution gives certain powers to the federal government (printing money, declaring war, regulating trade between states), leaves others to the states (running schools, setting most criminal law, issuing driver’s licenses), and shares some (taxing, building roads). The **10th Amendment** says any power not given to the federal government belongs to the states or the people.

Why does this matter for the test? Because questions about who should handle an issue - education standards, marijuana laws, voting rules - are testing federalism. There is rarely one “right” answer in real life, but on the GED, if a question asks which level of government handles something, think about this list. A question might also show a conflict - a state law vs. a federal law - and ask which wins. The answer: federal law wins, under the **Supremacy Clause** (Article VI). That is a favorite test point.

Your Rights and Responsibilities

The **Bill of Rights** is the first ten amendments to the Constitution, and it protects individual freedoms: speech, religion, press, assembly, the right to bear arms, protection from unreasonable searches, the right to a fair trial, and more. The GED most often tests the **1st Amendment** (speech, religion, press, assembly, petition) and the **4th through 8th Amendments** (rights of people accused of crimes - due process, fair trial, no cruel punishment).

Later amendments extended rights further, and these are high-frequency test topics:

- **13th Amendment** - abolished slavery.
- **14th Amendment** - defined citizenship and guaranteed “equal protection” and “due process” to all people. This is the amendment behind most civil rights court cases.
- **15th Amendment** - said the right to vote cannot be denied because of race.
- **19th Amendment** - women’s suffrage (1920).
- **26th Amendment** - lowered the voting age to 18 (1971).

Rights come with responsibilities: voting, serving on juries, paying taxes, obeying the law, and staying informed. A test question might contrast a right (freedom of speech) with a responsibility (voting) - do not mix them up.

How a Bill Becomes a Law

This is a classic GED sequence question. Here is the simplified path:

1. A member of Congress **introduces** a bill.
2. A **committee** studies it, holds hearings, and can change it or kill it. Most bills die here.
3. The full House or Senate **debates and votes**. If it passes, it goes to the other chamber, which repeats the process.
4. If both chambers pass **different versions**, a conference committee works out the differences.
5. The president **signs** it into law - or **veto**es it.
6. Congress can **override** a veto with a two-thirds vote in both chambers.

On the test, you might be asked what happens next at a given step, or which step gives the president a role. The president's only formal role is step 5 - signing or vetoing. Everything before that is Congress.

Try It

1. A newspaper publishes an editorial criticizing the mayor. The mayor orders the paper shut down. Which constitutional protection does this violate? A. The 10th Amendment B. The 1st Amendment C. The 14th Amendment D. The 26th Amendment
2. Congress passes a bill. The president vetoes it. What can Congress do next? A. Ask the Supreme Court to overrule the veto B. Override the veto with a two-thirds vote in both chambers C. Have the vice president sign the bill instead D. Send the bill to state governors for approval
3. A state passes a law that conflicts with a federal law on the same subject. Which law takes priority, and why? A. The state law, because of the 10th Amendment B. The federal law, because of the Supremacy Clause C. Whichever law was passed first D. Whichever law the Supreme Court prefers
4. The Senate refuses to confirm a president's nominee for the Supreme Court. This is an example of: A. Judicial review B. Popular sovereignty C. Checks and balances D. Federalism
5. Which of the following is a responsibility of citizenship, rather than a right? A. Freedom of religion B. The right to a fair trial C. Serving on a jury when called D. Freedom of the press

Answers: 1. **B.** Shutting down a newspaper for criticism violates freedom of the press, protected by the 1st Amendment. 2. **B.** A veto can be overridden by a two-thirds vote in both the House and Senate - that is the check on the veto power. 3. **B.** Under the Supremacy Clause (Article VI), federal

law wins when state and federal laws conflict. 4. **C.** The Senate confirming (or refusing to confirm) nominees is one branch checking another - checks and balances. 5. **C.** Jury service is a duty citizens owe; the others are rights the government owes citizens.

***Think About It:** You already live under this system every day - you follow laws, you have rights, and one day you may serve on a jury or vote in an election. Learning how it works is not about memorizing branches for a test. It is about understanding the rules of the world you live in. That knowledge is power, and nobody can take it from you.*

Key Terms

- **Popular sovereignty:** The idea that government power comes from the people.
- **Rule of law:** The principle that everyone, including leaders, must follow the law.
- **Separation of powers:** Dividing government into legislative, executive, and judicial branches.
- **Checks and balances:** Powers each branch has to limit the others (veto, override, judicial review, impeachment).
- **Federalism:** Dividing power between the federal government and the states.
- **Judicial review:** The courts' power to strike down laws that violate the Constitution.
- **Bill of Rights:** The first ten amendments, protecting individual freedoms.
- **Supremacy Clause:** The rule that federal law takes priority over conflicting state law.

Reflection Questions

1. Which of the Constitution's big ideas matters most to you personally? Why?
2. Why did the founders split power three ways instead of giving it all to one leader?
3. Name one right you have and one responsibility you have as a citizen. How are they different?
4. Where in the bill-to-law process do you think citizens have the most influence? Explain.

Lesson 7.2 - U.S. History Essentials

History Is a Story, Not a List

If the thought of studying “all of American history” makes you want to close this book, take a breath. The GED does not expect you to know everything. It expects you to recognize the **big turning points** and understand **cause and effect**: what happened, why it happened, and what changed because of it.

The test also leans on documents - a quote from a founding father, a paragraph from a speech, a chart of immigration numbers - and asks what it shows. If you know the storyline, the documents make sense. So here is the storyline, stripped to what the test actually asks about.

Colonization to Revolution (1600s-1783)

European powers - especially Britain, France, and Spain - established colonies in North America. Britain's thirteen colonies along the Atlantic coast grew fast, but after the costly French and Indian War (1754-1763), Britain tried to make colonists pay through taxes like the Stamp Act. The colonists had no representatives in Parliament, and their rallying cry became “**no taxation without representation.**”

Tensions exploded: the Boston Tea Party (1773), then fighting at Lexington and Concord (1775). In **1776**, the colonies declared independence with the **Declaration of Independence**, written mainly by Thomas Jefferson, asserting that all people have natural rights to “life, liberty, and the pursuit of happiness” and that governments get their power from the consent of the governed.

With French help, the Americans won the Revolutionary War (the British surrendered at Yorktown in 1781; the Treaty of Paris in 1783 confirmed independence). The big test takeaway: the Revolution was about **self-government and rights**, and its ideas - liberty, representation, consent of the governed - echo through every later era on the test.

The Civil War and Reconstruction (1861-1877)

By the mid-1800s, the North had industrialized while the South's economy depended on enslaved labor. Disputes over slavery's expansion into new western territories tore the country apart. When Abraham Lincoln was elected president in 1860, eleven Southern states seceded and formed the Confederacy. The **Civil War (1861-1865)** followed - the deadliest war in American history.

In 1863, Lincoln issued the **Emancipation Proclamation**, freeing enslaved people in the Confederate states. The North won, slavery was abolished by the **13th Amendment**, and the **14th and 15th Amendments** promised citizenship, equal protection, and voting rights regardless of race.

But **Reconstruction** (the period of rebuilding the South) was cut short. Federal troops withdrew in 1877, and Southern states imposed **Jim Crow laws** - segregation, poll taxes, and literacy tests that stripped Black Americans of their rights for nearly a century. Test questions often ask about this gap between the promise of the amendments and the reality of Jim Crow. The pattern to remember: **rights won on paper still had to be won in practice.**

Industrialization and Reform (1870s-1920s)

After the Civil War, America industrialized at breathtaking speed. Railroads stitched the continent together, factories rose in the cities, and millions of immigrants arrived from Europe seeking work. Fortunes were made - and so was misery: child labor, 12-hour workdays, dangerous factories, and crowded tenements.

This is the era of the **Progressive Movement** (roughly 1890-1920), when reformers pushed back. They won child labor laws, workplace safety rules, the 8-hour workday movement, women's suffrage (the **19th Amendment**, 1920), and direct election of senators (**17th Amendment**). On the test, a passage about factory conditions or a muckraking journalist is usually pointing at this cause-and-effect: **industrialization created problems, reform movements answered them.**

Two things to keep straight: industrialization also transformed the West - railroads, mining, and farming booms - and it made the U.S. an economic power, setting the stage for a bigger role in the world.

The World Wars and the Cold War (1914-1991)

World War I (1914-1918) pulled the U.S. onto the world stage. America entered in 1917 and helped the Allies win. Then came the Roaring Twenties, the stock market crash of 1929, and the **Great Depression** - the worst economic collapse in American history, with unemployment reaching 25 percent. President Franklin D. Roosevelt's **New Deal** programs put people to work and expanded the federal government's role in the economy. (Notice the economics connection - the test loves linking the Depression to ideas like unemployment and government spending.)

World War II (1939-1945) ended the Depression and made the U.S. a superpower. America entered after Japan attacked **Pearl Harbor** (December 7, 1941). The war ended with Germany's defeat and atomic bombs dropped on Japan. Afterward, the U.S. helped rebuild Europe and joined the **United Nations**.

But the Soviet Union - America's wartime ally - became its rival, and the **Cold War** (roughly 1947-1991) began: a decades-long standoff between the U.S. and the USSR, fought through proxy

wars (Korea, Vietnam), an arms race, and a space race, but never direct war between the two. It ended when the Soviet Union collapsed in 1991.

For the test, the Cold War pattern is: **containment** (the U.S. tried to stop communism from spreading), **proxy conflicts**, and constant tension short of direct war. The Vietnam War is the most commonly tested Cold War conflict.

The Civil Rights Movement (1950s-1960s)

A century after the Civil War amendments, Black Americans were still fighting for the rights those amendments promised. The **civil rights movement** used nonviolent protest, legal challenges, and moral pressure to force change:

- **1954 - *Brown v. Board of Education***: the Supreme Court declared segregated schools unconstitutional.
- **1955 - Montgomery bus boycott**: sparked by Rosa Parks, led by a young Martin Luther King Jr., it desegregated the city's buses.
- **1963 - March on Washington**: 250,000 people gathered; King's "I Have a Dream" speech demanded jobs and freedom.
- **1964 - Civil Rights Act**: banned segregation and employment discrimination.
- **1965 - Voting Rights Act**: banned the tricks (literacy tests, poll taxes) used to block Black voters.

The movement's strategy is a favorite test topic: **nonviolent resistance** - boycotts, sit-ins, marches - created moral pressure that laws alone had not. Other movements followed the same playbook: women's rights, Latino rights, disability rights. When a test document shows a protest or a speech, ask yourself: what right is being demanded, and what method is being used?

How to Handle History on Test Day

Three strategies carry you through almost every history question:

1. **Put it on a timeline.** If a question mentions the New Deal, you should think "1930s, Great Depression, between the wars." Rough placement beats exact dates.
2. **Look for cause and effect.** The test constantly asks "what caused X?" or "what was a result of Y?" Industrialization caused urban crowding; the Cold War caused the arms race; the civil rights movement caused new federal laws.

3. **Read the document first, then the question.** For document-based questions, spend 30 seconds understanding what the document *is* (a speech? a law? a chart?) and what it says before looking at the answer choices. Half the time the answer is sitting right in the text.

Try It

1. “We hold these truths to be self-evident, that all men are created equal...” This passage comes from the: A. Constitution B. Bill of Rights C. Declaration of Independence D. Emancipation Proclamation
2. Which of the following best describes a cause-and-effect relationship? A. The 19th Amendment caused the Civil War. B. Industrialization led to the growth of cities and the Progressive reform movement. C. The Cold War ended before World War II began. D. The Declaration of Independence was signed after the Constitution.
3. The 13th, 14th, and 15th Amendments were all direct results of: A. The Revolutionary War B. The Civil War and Reconstruction C. World War I D. The Progressive Movement
4. The Montgomery bus boycott is an example of: A. Violent rebellion against the government B. Nonviolent protest pressuring change C. A Supreme Court decision D. An act of Congress
5. During the Cold War, the United States followed a policy of containment, which meant: A. Containing the Soviet Union’s military inside its own borders by force B. Preventing the spread of communism to other countries C. Containing nuclear weapons by banning them worldwide D. Withdrawing from all foreign alliances

Answers: 1. **C.** That famous line opens the Declaration of Independence (1776). Do not confuse it with the Constitution, which begins “We the People.” 2. **B.** This is the only true cause-and-effect pair: industrialization drew workers to cities, and the harsh conditions sparked Progressive reforms. (The others scramble the timeline or reverse cause and effect.) 3. **B.** These “Reconstruction Amendments” abolished slavery, defined citizenship, and protected voting rights after the Civil War. 4. **B.** The boycott was peaceful economic pressure - a textbook example of nonviolent resistance. 5. **B.** Containment meant stopping communism from spreading, which is why the U.S. got involved in Korea and Vietnam.

***Think About It:** History can feel like it belongs to other people - people in wigs, people in textbooks. But the civil rights marchers were ordinary people who decided they had waited long enough. The suffragists were ordinary women who refused to take no for an answer. You come from that same stock. When you pass this test, you are writing your own next chapter.*

Key Terms

- **Declaration of Independence (1776):** The document declaring the colonies' independence, based on natural rights and consent of the governed.
- **Emancipation Proclamation (1863):** Lincoln's order freeing enslaved people in Confederate states.
- **Reconstruction Amendments:** The 13th, 14th, and 15th Amendments - abolishing slavery, defining citizenship, protecting voting rights.
- **Jim Crow laws:** Southern laws enforcing racial segregation and blocking Black voting after Reconstruction.
- **Progressive Movement:** Early-1900s reform push for labor laws, suffrage, and government accountability.
- **New Deal:** FDR's programs to fight the Great Depression and expand government's economic role.
- **Cold War:** The 1947-1991 U.S.-Soviet standoff fought through proxy wars and rivalry, not direct combat.
- **Nonviolent resistance:** Protest through boycotts, marches, and sit-ins rather than violence - the civil rights movement's core strategy.

Reflection Questions

1. Why do you think the rights promised after the Civil War took another 100 years to become real?
2. Pick one turning point from this lesson and explain its cause and its effect in your own words.
3. How did ordinary people - not just presidents and generals - shape American history?
4. Which era would you most want to learn more about? What would you want to know?

Lesson 7.3 - Economics and Geography

Two Subjects, One Skill: Reading the World

Economics and geography might sound like two totally different subjects, but on the GED they test the same core skill: **reading information and drawing conclusions**. An economics question shows you a chart of prices and asks what happened. A geography question shows you a map and asks why a city grew where it did. Both are really asking: can you look at evidence and think clearly about it?

This lesson gives you the handful of concepts that cover most questions in both areas. They are fewer than you think.

Supply and Demand: The Engine of Prices

Almost every economics question on the GED touches **supply and demand**. Here is the whole idea in two sentences: when demand goes up and supply stays the same, prices rise. When supply goes up and demand stays the same, prices fall.

Picture concert tickets. A popular band plays a small venue - huge demand, tiny supply, sky-high prices. Now picture the same band streaming a show online - unlimited supply, and the price drops to almost nothing. That is supply and demand in action.

The test loves “what happens if” scenarios: *A drought destroys half the orange crop. What happens to orange prices?* Supply fell, demand did not - so prices rise. *A new factory doubles the supply of bicycles. What happens to prices?* Supply rose - prices fall. Just ask: **which side moved, and which way?**

Inflation, Unemployment, and the Business Cycle

Inflation means prices in general are rising, so each dollar buys less. A little inflation (around 2 percent a year) is normal. High inflation hurts everyone, especially people on fixed incomes - their paycheck stays the same while everything costs more. **Deflation** (prices falling overall) sounds nice but is dangerous: people stop spending, businesses fail, workers lose jobs.

Unemployment is the share of people who want work but cannot find it. High unemployment means hardship for families and less spending across the whole economy - which can cause more layoffs, a vicious cycle.

Economies move in a **business cycle**: growth, then a peak, then a slowdown or **recession** (a significant decline in economic activity), then recovery. Governments try to smooth the cycle. The **Federal Reserve** (America’s central bank) raises or lowers interest rates to fight inflation or stimulate growth. Congress and the president use **fiscal policy** - taxing and spending - for the same purpose.

On the test, if a question mentions the Fed raising interest rates, think: *they are trying to cool down inflation*.

One more key term: **GDP (gross domestic product)** - the total value of everything a country produces in a year. It is the standard measure of an economy's size. If GDP is growing, the economy is growing.

Reading Maps and Charts

Geography questions usually come with a visual. Here is how to attack each type:

Maps: First read the title and the legend (the key explaining the symbols). Then look for what the question asks: location ("which city is farthest north?"), patterns ("where are most factories located?"), or relationships ("why did trade routes follow rivers?"). Do not overthink - the answer is almost always visible if you slow down and check the legend.

Bar and line graphs: Check the title, then read the labels on each axis (the bottom and the side). The axis labels tell you what is being measured. For line graphs, look at the overall trend - going up, going down, or flat - before worrying about exact numbers.

Pie charts: These show parts of a whole. The biggest slice is the biggest share. Questions usually ask which category is largest or smallest - just compare slice sizes.

Tables: Read the column and row headings first. Then find the specific cell the question asks about. Table questions are detail hunts; the headings are your map.

The number one mistake students make with visuals: **answering from memory instead of from the graphic**. Even if you know the topic, base your answer on what the visual actually shows. The test sometimes includes a twist - a chart that contradicts what you would expect - and students who trust their gut over the graphic get it wrong.

How Geography Shapes History

The GED often connects geography to history and economics: *why* did things happen *where* they did?

- **Rivers and coasts:** Early American cities grew along rivers and harbors because water was the highway of the 1700s and 1800s - it moved goods and people cheaply. New Orleans, New York, and Chicago all sit where water made trade possible.
- **Natural resources:** The Industrial Revolution clustered near coal and iron deposits (Pennsylvania, the Great Lakes region). Oil shaped Texas and the Middle East. Resources pull

industry, and industry pulls people.

- **Climate and land:** Farming societies grew where soil and rain allowed it. The Great Plains became wheat country; the South's long growing season made plantation agriculture - and slavery - profitable there.
- **Mountains and distance:** The Appalachian Mountains slowed westward expansion; the vast Pacific made the U.S. feel safe from invasion, shaping its foreign policy.

When a question asks *why* something is located somewhere, the answer is usually resources, water, or climate. When it asks what *effect* geography had, think about trade, settlement, or conflict.

Try It

1. A new technology allows factories to produce twice as many smartphones at the same cost. What will most likely happen to smartphone prices? A. They will rise because demand increases. B. They will fall because supply increases. C. They will stay the same because technology does not affect prices. D. They will rise because factories want more profit.
2. A line graph shows a country's unemployment rate from 2000 to 2020. The line rises steeply from 2008 to 2010. What does this show? A. The economy was growing rapidly in those years. B. More people were looking for work but could not find it. C. Inflation was falling during those years. D. The country's GDP doubled.
3. The Federal Reserve raises interest rates. What is it most likely trying to do? A. Increase unemployment B. Fight inflation by slowing spending C. Cause a recession on purpose D. Increase the money supply
4. A map shows early American settlements clustered along rivers and the Atlantic coast. The best explanation is that: A. Settlers were afraid of mountains. B. Water provided transportation and trade routes. C. The soil near water was too poor for farming. D. Rivers marked boundaries between colonies.
5. During a period of high inflation, who is hurt the most? A. People with large debts, because debts grow B. People on fixed incomes, because their money buys less C. Business owners, because they cannot raise prices D. Workers, because wages always rise faster than prices

Answers: 1. **B.** Supply doubled while demand stayed the same, so prices fall. Ask: which side moved, and which way? 2. **B.** A rising unemployment line means more people want work but cannot find it. (This period covers the Great Recession - but you did not need to know that; the graph told you.) 3. **B.** Higher interest rates make borrowing costlier, which slows spending and cools inflation. 4.

- B.** Before railroads, water was the cheapest way to move goods - settlements followed trade routes.
5. **B.** Fixed incomes do not adjust, so rising prices directly shrink what people can buy.

***Think About It:** You already think like an economist every time you compare prices at the store, and like a geographer every time you wonder why your city is where it is. The test is not asking you to become someone new. It is asking you to use skills you already have - carefully, on purpose, one question at a time.*

Key Terms

- **Supply and demand:** The relationship where prices rise when demand exceeds supply and fall when supply exceeds demand.
- **Inflation:** A general rise in prices, reducing what money can buy.
- **Unemployment:** The share of people seeking work who cannot find it.
- **Recession:** A significant decline in economic activity across the economy.
- **Federal Reserve:** America's central bank; sets interest rates to manage inflation and growth.
- **GDP:** Gross domestic product - the total value of a country's production; the standard measure of economic size.
- **Legend:** The key on a map explaining what its symbols mean.

Reflection Questions

1. Give an example of supply and demand from your own life (gas prices, rent, concert tickets).
2. Why does the test want you to answer from the chart or map instead of from memory?
3. How has geography - rivers, climate, resources - shaped the place where you live?
4. If you were explaining inflation to a friend, what example would you use?

Module 7 Assignment

Title: Social Studies in the Real World

Write a 1-2 page paper in two parts. Part 1: Choose one news story or issue in your community (housing, jobs, schools, policing - anything real). Explain which level of government (federal, state, or local) has the most power over it and why, using what you learned about federalism and the three branches. Part 2: Choose one historical turning point from Lesson 7.2 and explain its cause and its effect in your own words.

Module 7 Quiz

1. What are the three branches of government, and what is each one's main job?
2. Explain checks and balances in one or two sentences, with an example.
3. What is federalism, and how is it different from separation of powers?
4. Which amendment abolished slavery? Which amendment protects freedom of speech?
5. List the steps of how a bill becomes a law, in order.
6. What were the causes of the American Revolution?
7. What did the 13th, 14th, and 15th Amendments do?
8. Explain one cause and one effect of American industrialization.
9. What was the Cold War, and what was the U.S. policy of containment?
10. If supply of a product doubles and demand stays the same, what happens to its price? Why?

Module 7 Essay

Prompt: "Rights won on paper still had to be won in practice." Using the Reconstruction Amendments and the civil rights movement as evidence, explain what this means in 300-500 words.

Module 7 Submission Instructions

Submit your assignment, quiz answers, and essay as separate files (or one combined file clearly labeled) to noahsandersadvocacy@gmail.com with the subject line: [Your Name] - Module 7 - [Assignment Type]. See General Submission Instructions for file naming and format.

MODULE 8: Test Week — Bringing It All Together (Weeks 15-16)

Lesson 8.1 - RLA Final Prep

You Know More Than You Think

You have spent weeks building reading, writing, and reasoning skills. This week is not about learning new material - it is about **strategy**: how to walk into the RLA test and squeeze every point out of what you already know.

Here is what you are facing. The RLA (Reasoning Through Language Arts) test is **150 minutes** long and comes in two parts. **Part I is 72 minutes** and includes reading passages, editing questions, and the **45-minute extended-response essay**. Then you get a **break**. **Part II is 65 minutes** of more reading and editing questions. Knowing this structure ahead of time is itself an advantage - no surprises.

Passage Triage: Read Smart, Not Everything

The biggest mistake on RLA is reading every passage word-for-word like a novel. You do not have time for that, and you do not need to. Use **triage** - the same idea emergency rooms use: handle the most important things first.

For each passage set, do this:

1. **Read the question stems first** (not the answers - just the questions). This tells your brain what to hunt for. If a question asks about the author's opinion of technology, you will notice opinion statements as you read.
2. **Skim the passage** for structure, not detail. Read the first and last paragraph fully, and the first sentence of each middle paragraph. That is where main ideas live.
3. **Answer the questions**, going back to the passage for specifics. Most answers are *in* the text - your job is to find them, not to remember them.

For paired passages (two texts on the same topic), always ask: **do the authors agree or disagree?** Half the questions on paired passages come down to that one relationship.

One more triage rule: **answer easy questions first**. If a question confuses you after 60 seconds, flag it and move on. Every question is worth the same. Do not spend five minutes on one hard question while three easy ones sit unanswered.

Your 150-Minute Battle Plan

Here is a pacing plan that works for most test-takers. Adjust it to your speed, but have a plan - students with a plan finish; students without one run out of time.

Part I (72 minutes): - Minutes 1-5: Settle in, breathe, read the essay prompt first (yes, first - it will simmer in the back of your mind). - Minutes 5-50: Write the essay (45 minutes - see the checklist below). - Minutes 50-72: Answer the reading and editing questions in Part I.

Break: Stand up. Drink water. Do not think about the essay - it is done.

Part II (65 minutes): - Work through passages steadily: about 8-9 minutes per passage set. - Save the last 5 minutes to review flagged questions. **Never leave a question blank** - there is no penalty for guessing.

If you are running behind, speed up your reading, not your thinking. Slow, careful work on fewer questions beats rushed work on all of them - but blank answers score zero for sure.

The Essay Checklist

The 45-minute extended response asks you to read two passages on an issue and write an essay analyzing which argument is better supported. You are graded on how well you use evidence and organize your ideas - not on your opinion. Run this checklist:

1. **Plan for 5-10 minutes.** Read both passages, decide which side has stronger evidence, and jot down 3 supporting points. Students who plan write better essays than students who dive in.
2. **Write 4-5 paragraphs:** introduction (state which argument is stronger and why), two or three body paragraphs (one point each, with a quote or specific detail from the passages), conclusion (restate your position).
3. **Cite the passages.** Phrases like “According to the first passage...” or “As the author states...” show the grader you are using evidence. Aim for at least one specific reference per body paragraph.
4. **Use your own structure, not fancy vocabulary.** Clear beats fancy. Topic sentences, transitions (“First,” “In addition,” “However,” “In conclusion”), and complete sentences will carry you.

5. **Save 5 minutes to proofread.** Fix fragments, run-ons, and spelling. A clean essay scores higher than a brilliant messy one.

The most common essay failure is summarizing both passages without taking a position. The prompt asks you to **evaluate** - pick the stronger argument and defend your choice with evidence.

Editing Questions: The Patterns

About a third of RLA questions ask you to fix sentences - grammar, punctuation, word choice. These are the most predictable questions on the whole test. Learn the patterns:

- **Subject-verb agreement:** The verb must match the subject, not the nearest noun. "The box of cookies *was* empty" (box is singular). Watch for phrases stuck between subject and verb - cross them out mentally.
- **Pronouns:** Every pronoun needs a clear antecedent. "When Maria met Lisa, *she* was tired" - who is "she"? If it is unclear, it is wrong. Also match number: "Everyone brought *their* lunch" is accepted on the GED; "Everyone brought *his* lunch" is outdated.
- **Parallelism:** Items in a list must match form. "She likes running, swimming, and *to bike*" is wrong - it should be "biking." When you see a list, check the endings.
- **Wordiness and redundancy:** Shorter is usually better. "Due to the fact that" should be "because." "In my personal opinion" should be "in my opinion." If two choices say the same thing, pick the shorter one.
- **Transitions:** The connecting word must match the relationship. "However" and "but" signal contrast; "therefore" and "so" signal cause and effect; "for example" signals an illustration. Read the sentences around the blank and ask: contrast or continuation?
- **Commas:** The GED tests a few comma rules - between items in a list, after an introductory phrase, and around non-essential clauses. When in doubt, read the sentence aloud in your head; if you naturally pause, a comma probably belongs there.

A powerful technique: **read the sentence with each answer choice plugged in.** Your ear catches errors your eye misses. If a choice sounds wrong, it usually is.

Reading Question Types: What They Are Really Asking

Beyond editing, RLA reading questions fall into a few repeating types. Recognizing the type tells you where to look:

- **Main idea:** “What is the central point?” Look at the first and last paragraphs. Wrong answers are usually details that are true but too narrow.
- **Inference:** “What can you conclude?” The answer is never stated directly - it is the logical step *just past* the text. If a passage describes a town’s factories closing and shops emptying, the inference is economic decline, not “the town is ugly.” Stay close to the evidence; do not leap.
- **Author’s purpose and tone:** “Why did the author write this?” Look for signal words. “Should,” “must,” and “it is time” signal persuasion. “Studies show” and “for example” signal informing. Tone words on answer choices (critical, optimistic, neutral, sarcastic) should match the passage’s emotional temperature - check the adjectives the author actually uses.
- **Vocabulary in context:** “What does *reluctant* mean in paragraph 2?” Do not use the dictionary definition from memory - cover the word, read the sentence, and guess from context. Then pick the choice closest to your guess.
- **Evidence questions:** “Which detail best supports the claim?” These come in pairs - first you answer a question, then you pick the quote that proves it. Get the first one right and the second follows.

A universal move: **predict before you peek**. After reading the stem, form your own rough answer, then find the choice that matches. Students who predict first are far less fooled by trap answers.

Try It

1. Choose the sentence with correct subject-verb agreement: A. The team of players were celebrating their victory. B. The team of players was celebrating its victory. C. The team of players were celebrating its victory. D. The team of players was celebrating their victory.
2. Which transition best completes the sentence? “The new policy was unpopular with workers; ____, management kept it in place.” A. for example B. therefore C. however D. in addition
3. A paired passage question asks how the two authors’ views relate. What should you determine first? A. Which author uses longer sentences B. Whether the authors agree or disagree C. Which passage was written first D. How many facts each passage contains
4. You have 65 minutes for Part II and there are 7 passage sets. About how much time should you spend per set, leaving 5 minutes for review? A. 5 minutes B. 8-9 minutes C. 12 minutes D. 15 minutes
5. In the extended-response essay, what is the most important thing to do? A. Use impressive vocabulary throughout B. Take a clear position and support it with evidence from the passages C.

Summarize both passages equally without choosing a side D. Write as many paragraphs as possible

Answers: 1. **B.** “Team” is singular (a collective noun acting as one unit), so it takes “was” and “its.” Cross out “of players” - it is just a phrase between the subject and verb. 2. **C.** The second clause contrasts with the first (unpopular, but kept anyway) - that is a “however” relationship. 3. **B.** The agree/disagree relationship unlocks most paired-passage questions. 4. **B.** 60 minutes divided by 7 sets is about 8-9 minutes each. 5. **B.** The essay grades evaluation and evidence use - pick the stronger argument and prove it with specifics from the text.

***Think About It:** Test strategy is not cheating - it is preparation. Athletes do not just practice the sport; they study the game plan. You have done the hard work of learning. This week, you are learning how to show what you know. Walk in with a plan, and the test gets a whole lot smaller.*

Key Terms

- **Triage:** Prioritizing what to handle first - on the test, reading question stems before passages and answering easy questions first.
- **Extended response:** The 45-minute RLA essay analyzing which of two passages makes the better-supported argument.
- **Antecedent:** The noun a pronoun refers to; it must be clear.
- **Parallelism:** Matching grammatical form in lists and comparisons.
- **Transition:** A word or phrase showing the relationship between ideas (contrast, cause, example).

Reflection Questions

1. Which part of the RLA test worries you most - the passages, the editing questions, or the essay? What is one strategy from this lesson you will use for it?
 2. Why is it better to read the question stems before reading the passage?
 3. Explain the essay checklist in your own words. Which step do you think students skip most often?
 4. What is your personal pacing plan for the 150 minutes? Write it out.
-

Lesson 8.2 - Math Final Prep

Math Is a Skill, Not a Talent

Let us clear something up: nobody is “just bad at math.” Math is a set of procedures, and procedures can be learned, practiced, and mastered - by you, at your age, starting from wherever you are. Every adult who passes the GED math test once believed they could not do it. Then they did.

The GED math test is **115 minutes** and comes in **two parts**. Part 1 does not allow a calculator (about 5 questions - basic computation). **Part 2 allows the TI-30XS calculator** (the rest of the test). The test covers four areas: number operations, algebra, geometry, and data/probability - but word problems and algebra carry the most weight. This lesson is about mastering your tools: the formula sheet, the calculator, and your pacing plan.

Formula Sheet Mastery

Here is a secret that changes everything: **the GED gives you a formula sheet**. You do not have to memorize the area of a circle or the Pythagorean theorem - they are printed right there on the test. But a formula sheet only helps if you know how to *use* it.

In your final week, do this: print or pull up the official GED formula sheet and work five problems for each major formula - area and perimeter of rectangles and triangles, area and circumference of circles, volume of rectangular prisms and cylinders, the Pythagorean theorem, slope of a line, and the quadratic formula setup. The goal is not memorization; it is **recognition**. On test day, when a problem asks for the volume of a can (a cylinder), your brain should instantly think: *volume of a cylinder - I know where that is on the sheet*.

Three formulas deserve special attention because they appear constantly:

- **Area of a circle: $A = \pi \times r^2$** . The most common error is using the diameter instead of the radius. The radius is half the diameter - always halve it first.
- **Pythagorean theorem: $a^2 + b^2 = c^2$** . For right triangles only. If a problem gives you two sides of a right triangle and asks for the third, this is your tool.
- **Slope: $(y_2 - y_1) / (x_2 - x_1)$** . “Rise over run.” If a question asks how steep a line is or gives two points, compute the differences and divide.

Also know the **order of operations (PEMDAS)** cold - Parentheses, Exponents, Multiplication and Division (left to right), Addition and Subtraction (left to right). A shocking number of missed questions

come down to doing addition before multiplication.

Calculator Skills: Your TI-30XS

The **TI-30XS MultiView** is the calculator allowed on the test (and the testing center provides an on-screen version, so you do not need to buy one - but practice with the real thing or the free online emulator if you can). It can do far more than add and subtract. Learn these functions this week:

- **Fractions:** Use the fraction key (it looks like a stacked box) to enter fractions directly instead of converting to decimals. The GED loves fraction problems, and this key prevents conversion errors.
- **Exponents and roots:** The x^2 key squares a number; the caret (^) key does any power. The square root key reverses it.
- **The ANS key:** Recalls your last answer. Chain calculations without retyping long decimals.
- **Toggling fraction/decimal:** The calculator can switch an answer between fraction and decimal form - match whichever form the answer choices use.
- **Order of operations:** The TI-30XS follows PEMDAS automatically, so you can type expressions as written. But watch out: always use parentheses around numerators and denominators of fractions you type with the division key.

Practice rule: **do every homework problem twice - once by hand, once with the calculator.** The hand work builds understanding; the calculator work builds speed. On test day, use the calculator for anything with ugly numbers, but do simple arithmetic in your head to save time.

The Two-Part Pacing Plan

Part 1 (no calculator, ~5 questions): These test basic number sense - fractions, decimals, order of operations. Work carefully but quickly; each should take about 2 minutes. Do not panic about the missing calculator - these are designed to be solvable without one.

Part 2 (calculator allowed, the bulk of the test): You have roughly 100 minutes for about 40 questions - about 2.5 minutes per question. Here is the plan:

- **First pass (60 minutes):** Answer everything you can do confidently. Skip anything that looks like a time sink - long word problems with confusing setups, geometry you do not recognize.
- **Second pass (25 minutes):** Return to skipped questions. Read them fresh - sometimes a problem that looked impossible makes sense on a second look. Draw a picture for geometry;

underline the actual question being asked in word problems.

- **Final 15 minutes:** Check flagged answers and **never leave blanks**. On multiple choice, eliminate obviously wrong answers first - even eliminating one choice improves your odds. For fill-in-the-blank (the GED has some), make your best reasonable estimate.

Word problems deserve a system: **(1)** What is the question actually asking? **(2)** What numbers am I given? **(3)** Which operation or formula connects them? **(4)** Solve, then **(5)** check: does my answer make sense? If a problem asks for the cost of paint and your answer is \$4 million, recheck your work.

Checking Your Work: The Last 10 Percent

Top scorers are not people who never make mistakes - they are people who **catch** their mistakes.

Build these checks into your routine:

- **Estimate first.** Before calculating, round the numbers and guess the ballpark. If your precise answer is nowhere near your estimate, something went wrong.
- **Plug back in.** For algebra, put your answer back into the original equation. If $x = 4$, does $2x + 3$ really equal 11? If not, find the error.
- **Watch the units.** If the question asks for square feet and your answer is in feet, you missed a step.
- **Reread the question.** The most painful errors come from answering the wrong question - finding the radius when they asked for the diameter, solving for x when they asked for $2x$. After you solve, reread the last sentence of the problem.

High-Value Topics to Drill This Week

You cannot review all of math in a week, so spend your time where the points are. These four areas carry the most weight on the GED:

- **Word problems with percent, ratio, and proportion.** "A shirt costs \$40 after a 20% discount - what was the original price?" "A recipe serves 4; scale it to 10." Translate words to math: "of" usually means multiply, "per" means divide, "is" means equals. If you can set up the equation, the calculator does the rest.
- **Linear equations and inequalities.** Solving for x ($2x + 5 = 17$), graphing simple lines, and understanding slope. Roughly a quarter of the test touches algebra - this is the single highest-value topic.

- **Basic geometry.** Perimeter, area, and volume of common shapes (use the formula sheet), plus the Pythagorean theorem for right triangles. Draw every geometry problem, even a rough sketch - it turns abstract numbers into something your eyes can work with.
- **Data, statistics, and probability.** Reading charts (mean, median, mode, range), basic probability ("what are the chances of drawing a red marble?"), and counting combinations. These questions are often easier than they look - the math is simple once you identify what is being asked.

Drill method: pick one topic per day, do 10 mixed problems, and write down every error in a small "mistake log" - the error, why it happened, and the correct move. Review the log the night before the test. Students who log mistakes stop repeating them.

Try It

1. A circle has a diameter of 10 inches. What is its area? (Use 3.14 for pi.) A. 31.4 square inches B. 78.5 square inches C. 314 square inches D. 15.7 square inches
2. Evaluate: $3 + 4 \times (6 - 2)^2$ A. 67 B. 112 C. 19 D. 52
3. A rectangular garden is 12 feet long and 8 feet wide. Fencing costs \$5 per foot. What is the total cost of fencing the garden? A. \$200 B. \$480 C. \$96 D. \$100
4. On Part 2 of the math test, you are stuck on a long word problem with 3 minutes left and 4 questions unanswered. What is the best strategy? A. Spend all 3 minutes on the hard problem since it is worth more B. Guess randomly on all of them as fast as possible C. Quickly answer the easier ones, eliminate wrong choices, and guess rather than leave blanks D. Leave them blank to avoid losing points for wrong answers
5. You solve $2x + 5 = 17$ and get $x = 6$. How do you check your work? A. Solve it again the exact same way B. Plug 6 back in: $2(6) + 5 = 17$ - correct C. Ask whether the answer looks reasonable D. Move on; checking wastes time

Answers: 1. **B.** Radius = diameter / 2 = 5. Area = $3.14 \times 5^2 = 3.14 \times 25 = 78.5$. (A used the diameter as the radius; C forgot to square properly and more.) 2. **A.** Parentheses first: $(6-2) = 4$. Exponents: $4^2 = 16$. Multiplication: $4 \times 16 = 64$. Addition: $3 + 64 = 67$. PEMDAS order matters. 3. **A.** Perimeter = $2(12 + 8) = 40$ feet. $40 \times \$5 = \$200$. (B is the area $\times \$5$ - wrong question; reread what is asked.) 4. **C.** Every question counts the same, there is no guessing penalty, and eliminating choices improves your odds. Never leave blanks. 5. **B.** Plugging back in is the gold-standard check - it verifies the answer against the original equation.

Think About It: Math anxiety is real, but it is not a verdict - it is a feeling, and feelings change with evidence. Every practice problem you solve correctly is evidence. Collect enough of it this week, and you will walk into that test with something anxiety cannot argue with: proof.

Key Terms

- **Formula sheet:** The reference page provided on the GED with geometry and algebra formulas - learn to use it, not memorize it.
- **TI-30XS MultiView:** The approved calculator for Part 2 of the math test; learn its fraction, exponent, and ANS keys.
- **PEMDAS:** The order of operations - Parentheses, Exponents, Multiplication/Division, Addition/Subtraction.
- **Radius:** Half the diameter of a circle; the value that goes into the area formula.
- **Slope:** Rise over run - how steep a line is, computed as $(y_2 - y_1) / (x_2 - x_1)$.
- **Estimate:** A rough calculation done before solving, used to check whether an answer is reasonable.

Reflection Questions

1. Which calculator functions do you need to practice most before test day?
2. Explain the two-pass pacing plan in your own words. Why is the second pass valuable?
3. What is your personal system for word problems? Write out the steps you will follow.
4. How will you check your work under time pressure? Which checking habit will you build this week?

Lesson 8.3 - Science and Social Studies Final Prep

Two Tests, One Playbook

Science and Social Studies are the GED's most similar tests. Both are **reading tests in disguise**: they give you passages, charts, diagrams, and experiments, then ask what the evidence shows. You

do not need to be a scientist or a historian. You need to be a **detective** - someone who looks at evidence and draws careful conclusions.

The formats: **Social Studies is 70 minutes with about 50 questions** - fast-paced, mostly documents, charts, and political cartoons. **Science is 90 minutes** and includes **two short-answer questions** where you write a few sentences explaining an experiment or a design solution. Both reward the same core moves, which is why one lesson covers both.

The Document-Attack Strategy

Almost every question on both tests starts with a stimulus - a paragraph, a chart, a diagram, a cartoon. Attack it the same way every time:

Step 1: Identify what it is (10 seconds). Is this a passage, a graph, a table, an experiment description, a cartoon? Say it to yourself. This orients your brain.

Step 2: Read the title, labels, and axes (20 seconds). For visuals, the title and labels carry half the meaning. A bar graph titled “Voter Turnout by Age Group, 2020” with age on the bottom axis tells you the whole story before you read a single number.

Step 3: Find the main idea or trend (30 seconds). For a passage: what is the author’s point? For a graph: is it going up, down, or staying flat? For an experiment: what is being tested and what happened? Do not memorize details - get the shape of it.

Step 4: Read the question stem, then hunt. Now go to the questions. Read each stem carefully - especially words like *best*, *most likely*, *suggests*, and *except* (which flips the question). Then go back to the stimulus for the specific detail you need.

Step 5: Eliminate and answer. Cross out choices that contradict the stimulus, choices that go beyond what it shows, and choices that are true in real life but not supported *here*. The right answer is the one the evidence directly supports - nothing more.

Two traps to memorize: **the “true but not shown” trap** (an answer choice that is factually correct but not supported by the stimulus - it is wrong) and **the “extreme word” trap** (choices with *always*, *never*, or *all* are usually wrong, because evidence rarely proves absolutes).

The Short-Answer Formula (Science)

The Science test’s two short answers typically ask you to explain experimental results or evaluate a design - for example, why one bridge design held more weight, or what the data from an experiment shows. You only need a few sentences, but they must be structured. Use this formula:

CER: Claim, Evidence, Reasoning.

- **Claim:** State your answer directly. “Design B is stronger.”
- **Evidence:** Cite specific data. “Design B held 50 pounds before collapsing, while Design A held only 30 pounds.”
- **Reasoning:** Explain *why* the evidence supports your claim. “The triangular supports in Design B distribute weight more evenly, which explains why it held more.”

Write 3-5 sentences total. Graders score these quickly - they look for a clear claim tied to specific evidence. Vague answers (“Design B was better because it was good”) score poorly; specific answers score well even if the science vocabulary is simple.

If the prompt involves an experiment, also check for **variables**: the **independent variable** (what the scientist changed), the **dependent variable** (what was measured), and **controlled variables** (what was kept the same). A question might ask what *should* have been controlled - the answer is whatever differed between test groups besides the thing being tested.

Chart and Graph Speed-Reading

Both tests are heavy on visuals, and speed matters - especially on Social Studies with 50 questions in 70 minutes (about 84 seconds each). Train your eyes:

- **Bar graphs:** Compare bar heights. The tallest bar is the maximum; look for the question’s specific comparison (“which year had the highest...”).
- **Line graphs:** Follow the trend. Steep slope = fast change; flat = no change. Mark the highest and lowest points.
- **Tables:** Read the row and column headers first, then find the intersection the question asks about. Cover the rest of the table with your hand if it helps you focus.
- **Diagrams (science):** Follow the arrows and labels in order. A water cycle or circuit diagram is a *process* - read it start to finish like a story.
- **Political cartoons (social studies):** Identify the symbols (a donkey = Democrats, an elephant = Republicans, a vulture = greed), read any labels or captions, and ask: what is the cartoonist’s *opinion*? Cartoons always take a position - usually critical.

The golden rule from Lesson 7.3 still applies: **answer from the visual, not from memory**. The stimulus is the boss. If a chart shows something surprising, trust the chart.

Science Content Shortcuts

Science questions are mostly document-based, but a little background knowledge speeds you up enormously. These are the highest-frequency concepts:

- **Experimental design:** Know independent vs. dependent vs. controlled variables (covered above) - this alone answers several questions per test.
- **Energy and matter:** Energy cannot be created or destroyed, only transformed (a battery's chemical energy becomes light and heat). Matter changes form - solid, liquid, gas - but the total amount stays the same in a closed system.
- **Cells and body systems:** Cells are the basic unit of life. Know the big systems at a high level: circulatory (moves blood), respiratory (oxygen in, carbon dioxide out), digestive (breaks down food), nervous (sends signals). Questions usually ask what happens when one system fails or how two systems work together.
- **Heredity basics:** Traits pass from parents to offspring through genes. A Punnett square predicts the probability of a trait - if a question shows one, count the boxes: each box is an equal chance.
- **Ecosystems:** Producers (plants) make food, consumers eat it, decomposers recycle it. Removing one piece disrupts the whole web - food-chain questions almost always test this cause-and-effect.
- **Earth science basics:** The water cycle (evaporation, condensation, precipitation), plate tectonics (moving plates cause earthquakes and volcanoes), and weather vs. climate (weather is daily, climate is long-term patterns).

You do not need deep knowledge of any of these - just enough that the stimulus feels familiar instead of foreign. When a diagram looks familiar, your brain spends its energy on the *question* instead of decoding the *picture*.

Try It

1. A bar graph shows monthly rainfall in a city. The tallest bar is April. A question asks which month had the most rainfall. The correct approach is to: A. Recall what you know about spring weather patterns B. Choose April, because the visual shows it directly C. Average all the bars and pick the middle one D. Choose the month you think is rainiest where you live
2. A student's experiment tests which fertilizer helps plants grow tallest. She gives Plant A fertilizer X, Plant B fertilizer Y, but waters Plant A twice as much as Plant B. What is the flaw? A. She should have used more plants B. The watering was not controlled - it is a second variable C. Fertilizer experiments never work D. There is no flaw; the experiment is fine

3. Using CER, which short answer is strongest? Prompt: "Explain which material insulated best." A. "Foam was the best insulator because it is a good material." B. "Foam kept the water warmest, losing only 2 degrees compared to 8 degrees for plastic, because its trapped air pockets slow heat transfer." C. "The experiment tested foam, plastic, and foil as insulators." D. "Insulation is important for saving energy in homes."

4. A political cartoon shows a politician with strings attached to his arms, controlled by a figure labeled "Big Money." The cartoonist's opinion is most likely that: A. Politicians are skilled leaders B. Money has too much influence over politicians C. Puppets are entertaining D. Campaigns should cost more money

5. An answer choice states a fact that is true in real life but is not supported by the passage. You should: A. Choose it, because true facts are always correct B. Eliminate it - the answer must come from the stimulus C. Choose it only if no other choice seems right D. Flag the question and come back later

Answers: 1. **B.** The visual is the boss - April's bar is tallest, so April had the most rain. Never substitute memory for the graphic. 2. **B.** Watering differed between the plants, so you cannot tell whether fertilizer or water caused the difference. Controlled variables must stay the same. 3. **B.** It makes a claim (foam best), cites specific evidence (2 vs. 8 degrees), and gives reasoning (trapped air pockets). That is CER done right. 4. **B.** The puppet strings symbolize control - the cartoonist is criticizing money's influence. Cartoons always take a position; find it. 5. **B.** The "true but not shown" trap: if the stimulus does not support it, it is wrong no matter how true it is.

***Think About It:** Detectives do not solve cases by knowing everything in advance. They solve them by looking carefully at what is in front of them. That is exactly what these two tests ask you to do. You have been practicing this skill your whole life - every time you sized someone up, read a situation, or figured out what was really going on. Trust your eyes. Trust the evidence.*

Key Terms

- **Stimulus:** The passage, chart, diagram, or cartoon that questions are based on.
- **Independent variable:** What the experimenter changes on purpose.
- **Dependent variable:** What is measured as the result.
- **Controlled variables:** Everything kept the same so the test is fair.

- **CER:** Claim, Evidence, Reasoning - the formula for science short answers.
- **Trend:** The overall direction of data on a graph (rising, falling, flat).

Reflection Questions

1. Walk through the five document-attack steps in your own words. Which step do you usually skip?
 2. Why is “true but not shown” a trap? Give an example.
 3. Write a CER paragraph about something from your daily life (a recipe result, a car repair, a work task).
 4. Which visuals slow you down most - graphs, tables, diagrams, or cartoons? How will you practice them this week?
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Lesson 8.4 - Your Test-Day Plan

The Final Countdown

You have done the work. Now let us make sure nothing *around* the test gets in the way of showing it. This lesson is your complete plan for the week before, the day of, and the days after - including how to decide you are ready, which subject to take first, and what happens once you pass.

The Week Before: Taper, Don't Cram

Athletes do not run a marathon the day before the race. They taper - light training, good food, real sleep. Do the same:

- **Sleep is your study tool.** For the full week before, get 7-8 hours a night. Sleep is when your brain consolidates what you learned. An all-nighter destroys more points than it earns.
- **Review, don't cram.** Spend 30-60 minutes a day reviewing: your formula sheet, key terms, essay checklist, the document-attack steps. Flip through your Try It answer keys. Light review keeps things fresh without burnout.
- **Take the GED Ready practice test** if you have not already. This is the official practice test, and it is the best readiness predictor available. If you score in the passing range, you are ready. If you score close, focus your remaining days on your weakest area. Your teacher or test center can tell you how to access it.

- **Handle logistics early.** Confirm your test appointment, know exactly where the testing center is, and plan how you will get there. Lay out your ID the night before (you will need a valid government-issued photo ID). Know what you can and cannot bring - the center provides the calculator and formula sheet.

Test Day Timeline

The night before: Light review only - 30 minutes max. Pack your ID. Set two alarms. Go to bed at a normal hour.

Morning: Eat a real breakfast - protein and complex carbs (eggs, oatmeal, peanut butter toast), not just sugar. Sugar spikes and crashes; you need steady fuel for a multi-hour test. Arrive 20-30 minutes early. Rushing creates panic, and panic kills performance.

At the center: You will check in, store your belongings (phones are not allowed in the testing room), and be seated at a computer. Use the tutorial time to get comfortable with the on-screen calculator and the flag-for-review feature. Take a breath. You have prepared for this.

During the test: Follow your pacing plans. Flag and skip hard questions; return to them. Never leave blanks. If anxiety spikes, close your eyes for 15 seconds and breathe slowly - a calm brain retrieves information far better than a panicked one.

Between subjects (if taking more than one): Eat a snack, drink water, stretch. Mentally close the last test - do not replay questions. Each subject is a fresh start.

Which Subject Should You Take First?

You can take the four subjects **one at a time**, in any order, on different days. This is a huge advantage - use it. Two good strategies:

Strategy A: Strongest first. Take your best subject first to bank a pass and build confidence. Walking out of the center having passed one subject makes the next ones feel doable. Most students start here.

Strategy B: Hardest first. Take your toughest subject while your motivation and study momentum are highest. If you need a retake, you will know early and can plan around it.

Either way, **do not take all four in one day** unless you have a strong reason. Fatigue is real, and each test deserves your best brain. Spacing them over days or weeks is normal and smart.

Use your **GED Ready scores** to decide: take the subjects where you scored comfortably in the passing range first, and give extra prep days to any subject where you scored near the line. The practice test exists precisely to guide this decision.

Understanding Your Scores

Each subject is scored from **100 to 200**. Here is what the numbers mean:

- **Below 145:** Not yet passing. You can retake - you get **3 attempts** before a **60-day waiting period** kicks in, so use each attempt seriously and study your weak spots between tries.
- **145-164: Pass.** You have earned your GED credential for that subject. This is the goal, and it counts fully.
- **165-174: College Ready.** You passed *and* showed skills that predict success in college courses.
- **175-200: College Ready + Credit.** You passed at an exceptional level that can earn you actual college credit at some schools - saving you tuition money.

A 145 and a 190 earn the same credential. Do not chase perfection; chase the pass, then move on to your next subject.

What Happens After You Pass

When you pass all four subjects, you earn your **GED credential** - the equivalent of a high school diploma, accepted by employers, colleges, and the military nationwide. Here is what comes next:

1. **Get your transcript.** Your official GED transcript is available through the GED testing service. Employers and schools may ask for it - order an official copy when you need one.
2. **College:** Your credential qualifies you for community college and most four-year schools. If you scored 165+, you are flagged as college-ready; at 175+, ask schools about credit for your scores. File the FAFSA for financial aid - it is free money you may qualify for.
3. **Career training:** Trade schools, apprenticeships, certifications (CDL, CNA, IT, welding) - many high-paying paths open with a GED plus focused training, often in months rather than years.
4. **Jobs:** Update your resume the week you pass. "GED credential, 2026" goes under Education. Many employers simply check the box - and now you can check it.

The cost of each subject test **varies by state (roughly \$30-\$40 per subject)**, and retakes cost the same - another reason to prepare well and pass the first time. But if life gets in the way, the test will still be there. People pass the GED at 18 and at 68. Your timeline is your own.

Try It

1. Your GED Ready practice score is just below passing in math but solid in RLA. What is the smartest plan? A. Take all four subjects tomorrow to get it over with B. Take RLA first to bank a pass, and give math extra prep days C. Take math first to get the hard one out of the way with no extra study D. Skip the GED Ready test; it does not predict anything
2. Each GED subject is scored on a scale of: A. 0 to 100 B. 100 to 200 C. 200 to 800 D. 1 to 36
3. A student scores 170 on Science. What does this mean? A. She failed and must retake B. She passed at the College Ready level C. She earned automatic college admission D. She must take the subject again for a higher score
4. The night before the test, you should: A. Study for 6 hours straight to cram everything in B. Do light review for 30 minutes, pack your ID, and sleep well C. Take a full practice test at midnight D. Skip dinner to save time for studying
5. After earning the GED credential, which of the following is NOT a typical next step? A. Applying to community college B. Ordering an official transcript when an employer asks C. Filing the FAFSA for financial aid D. Retaking all four subjects to improve scores

Answers: 1. **B.** Bank the confident pass first, then invest extra days where the practice test showed weakness. That is exactly what GED Ready is for. 2. **B.** Each subject scores 100-200; 145 is the passing line. 3. **B.** 170 falls in the 165-174 College Ready range - a pass plus a college-readiness signal. 4. **B.** Taper, don't cram: light review, logistics handled, real sleep. 5. **D.** Once you pass all four, the credential is earned - retaking passed subjects is not a normal or useful step.

***Think About It:** Picture yourself a month from now, credential in hand. What changes? A job application you can finally submit. A college program you can finally start. A promise to yourself - or to your kids - finally kept. That future is not a fantasy. It is a plan, and you are already executing it. Finish strong.*

Key Terms

- **GED Ready:** The official practice test; the best predictor of whether you are ready for the real test.
- **Passing score:** 145 out of 200 on each subject.
- **College Ready (165-174):** Score range signaling readiness for college-level work.

- **College Ready + Credit (175-200):** Score range that can earn actual college credit.
- **Taper:** Reducing intensity before a big event - light review and good sleep instead of cramming.
- **Transcript:** The official record of your GED scores, available through the GED testing service.

Reflection Questions

1. Which subject will you take first, and why? What does your GED Ready score tell you?
 2. Write out your personal test-day timeline, from the night before to the testing center.
 3. What will you do in the first week after passing all four subjects?
 4. Who in your life will be proudest when you pass? How will you celebrate?
-

Module 8 Assignment

Title: My Test-Day Playbook

Write a 1-2 page personal plan covering: (1) the order you will take the four subjects and why, based on your strengths and GED Ready scores; (2) your pacing plan for your hardest subject (minutes per section, what you will do if you fall behind); (3) your test-week schedule - sleep, review, logistics, and test-day timeline. Be specific: this is a plan you will actually use.

Module 8 Quiz

1. How long is the RLA test, and how is the time divided?
2. How much time should you spend planning, writing, and proofreading the 45-minute essay?
3. Name three editing-question patterns to watch for.
4. How long is the math test, and when is the calculator allowed?
5. What should you do with the formula sheet in your final week of prep?
6. Explain the two-pass pacing plan for math Part 2.
7. What are the five document-attack steps for Science and Social Studies?
8. What does CER stand for, and when do you use it?
9. What are the four GED score ranges and what does each mean?

10. After passing all four subjects, what are three possible next steps?

Module 8 Essay

Prompt: In 300-500 words, describe your personal path to the GED: why you decided to earn it, what the hardest part of preparing has been, and what you plan to do with your credential. Write it like a letter to your future self, one year from now.

Module 8 Submission Instructions

Submit your assignment, quiz answers, and essay as separate files (or one combined file clearly labeled) to **noahsandersadvocacy@gmail.com** with the subject line: [Your Name] - Module 8 - [Assignment Type]. See General Submission Instructions for file naming and format.

FINAL EXAM: GED Practice Test

This practice final covers all four GED subjects in the style of the real tests. All questions are original — written for this workbook, not taken from real GED exams. Time yourself: 90 minutes for Parts 1-4, plus 45 minutes for the essay. Then check your answers.

Scoring guide: 36-40 correct = excellent, ready for GED Ready. 30-35 = strong, review misses. 24-29 = keep studying weak areas. Below 24 = revisit the modules before testing.

Part 1: Language Arts (Questions 1-10)

Read the passage, then answer questions 1-4.

Elena had worked the night shift at the warehouse for six years. When the company announced it was automating half the floor, she did not panic. Instead, she enrolled in evening classes at the community college, studying logistics software two nights a week while her mother watched the kids. Eighteen months later, when the new systems went live, Elena was not laid off — she was promoted to supervise them. “The machines didn’t take my job,” she told a reporter. “They gave me a better one — but only because I was ready.”

1. What is the main idea of the passage? A. Automation always destroys jobs B. Preparing for change can turn a threat into an opportunity C. Night shift work is bad for families D. Community college is too expensive for most workers
2. Which detail best supports the main idea? A. Elena worked the night shift for six years B. Elena’s mother watched the kids C. Elena studied logistics software and was promoted to supervise the new systems D. The company automated half the floor
3. The author’s tone could best be described as: A. Fearful B. Admiring C. Sarcastic D. Indifferent
4. What can the reader infer about Elena? A. She dislikes technology B. She took initiative rather than waiting to see what happened C. She quit her job voluntarily D. She had a college degree before enrolling

Read the two short passages, then answer questions 5-6.

Passage A: “Our town should build the proposed sports complex. It will create 200 construction jobs, attract tournaments that fill hotels and restaurants, and give our kids somewhere safe to play. The

cost is real, but the return is bigger."

Passage B: "The sports complex is a gamble we cannot afford. The 200 jobs vanish when construction ends, tournament revenue projections are guesses, and the town would carry the debt for 20 years. Fix the roads and schools first."

5. On what point do the two passages most clearly disagree? A. Whether kids need safe places to play B. Whether the complex's long-term benefits outweigh its costs C. Whether construction jobs are valuable D. Whether the town has roads
6. Which statement is a fact, not an opinion? A. The complex will give kids somewhere safe to play B. Tournament revenue projections are guesses C. The town should fix roads and schools first D. The cost is real, but the return is bigger

Answer questions 7-10 about writing.

7. Choose the sentence with correct subject-verb agreement: A. The list of supplies are on the counter. B. The list of supplies is on the counter. C. The lists of supplies is on the counter. D. The list of supply are on the counter.
8. Choose the correctly punctuated sentence: A. After work, Marcus went to the library, he studied for two hours. B. After work Marcus went to the library he studied for two hours. C. After work, Marcus went to the library. He studied for two hours. D. After work Marcus went to the library, and he studied, for two hours.
9. Choose the sentence with the correct word: A. Their going to announce the results tomorrow. B. They're going to announce the results tomorrow. C. There going to announce the results tomorrow. D. Theyre going to announce the results tomorrow.
10. Which is a complete sentence (not a fragment)? A. Because the bus was late again. B. Running to catch the bus every morning. C. She set two alarms so she would not miss the bus. D. The bus, which comes at 7:15.

Part 2: Math (Questions 11-20)

11. What is $\frac{3}{4} + \frac{2}{3}$? A. $\frac{5}{7}$ B. $\frac{5}{12}$ C. $1\frac{5}{12}$ D. $1\frac{1}{12}$
12. A shirt costs \$45. It is on sale for 20% off. What is the sale price? A. \$9 B. \$25 C. \$36 D. \$40
13. Solve for x: $3x + 7 = 22$ A. 3 B. 5 C. 7 D. 15
14. What is 15% of 240? A. 16 B. 24 C. 36 D. 48

15. A rectangle is 12 feet long and 8 feet wide. What is its area? A. 20 square feet B. 40 square feet C. 96 square feet D. 192 square feet
16. If 4 pencils cost \$3.00, how much do 10 pencils cost at the same rate? A. \$6.00 B. \$7.00 C. \$7.50 D. \$12.00
17. What is the mean of 4, 8, 6, 10, and 2? A. 5 B. 6 C. 7 D. 30
18. Solve for y: $2(y - 3) = 10$ A. 4 B. 6 C. 8 D. 13
19. A circle has a radius of 5 inches. What is its circumference? (Use 3.14 for pi.) A. 15.7 inches B. 31.4 inches C. 78.5 inches D. 157 inches
20. In a bag there are 3 red marbles and 7 blue marbles. What is the probability of drawing a red marble? A. $\frac{3}{10}$ B. $\frac{3}{7}$ C. $\frac{7}{10}$ D. $\frac{1}{3}$
-

Part 3: Science (Questions 21-30)

Use the experiment description for questions 21-23.

A student grows bean plants to test fertilizer. She plants 30 seeds in identical pots with the same soil. Ten pots get no fertilizer, ten get 5 grams, and ten get 10 grams. All pots get the same water and sunlight. After four weeks, she measures each plant's height.

21. What is the independent variable? A. Plant height B. The amount of fertilizer C. The amount of water D. The type of soil
22. Why did she plant ten seeds in each group instead of one? A. To use more soil B. To make the experiment take longer C. To get reliable results not skewed by one unusual plant D. To test different types of beans
23. Which is a valid conclusion setup? If the 5-gram group grew tallest, the student could conclude:
A. Fertilizer always harms plants B. A moderate amount of fertilizer may help growth, but more is not always better C. Water is more important than fertilizer D. Beans cannot grow without fertilizer

Use the chart description for questions 24-25.

A line graph shows a city's average monthly temperature: January 35F, April 60F, July 88F, October 62F.

24. What is the temperature range shown? A. 25 degrees B. 53 degrees C. 60 degrees D. 88 degrees
25. Which statement is supported by the graph? A. It never rains in July B. Temperatures rise from winter to summer, then fall toward winter C. October is the hottest month D. The city's climate never changes
26. Which process do plants use to make food from sunlight? A. Respiration B. Digestion C. Photosynthesis D. Fermentation
27. An object at rest stays at rest unless acted upon by a force. This is: A. Newton's first law of motion B. The law of conservation of energy C. The water cycle D. Natural selection
28. Which gas do humans need to breathe in order to survive? A. Carbon dioxide B. Helium C. Oxygen D. Nitrogen
29. In the water cycle, what is evaporation? A. Water soaking into the ground B. Liquid water becoming water vapor from heat C. Water vapor cooling into droplets D. Water flowing to the ocean
30. A short-answer style question: A town's tap water tastes strange after heavy rain. Scientists suspect runoff is carrying soil into the reservoir. Explain one test they could run to check this hypothesis and what result would support it. *(Write 3-5 sentences. A strong answer states the test, what it measures, and what result would confirm the hypothesis.)*
-

Part 4: Social Studies (Questions 31-40)

31. What is the main purpose of the Bill of Rights? A. To establish the three branches of government B. To protect individual freedoms from government power C. To set up the tax system D. To declare independence from Britain
32. Which branch of government interprets laws? A. Legislative B. Executive C. Judicial D. Military
33. The Civil War was fought primarily over: A. Trade with Europe B. Slavery and the power of the federal government C. Women's right to vote D. Building railroads
34. If demand for a product rises while supply stays the same, prices will generally: A. Fall B. Stay the same C. Rise D. Become illegal
35. The 19th Amendment: A. Ended slavery B. Gave women the right to vote C. Lowered the voting age to 18 D. Created the income tax

36. Which document declared American independence from Britain? A. The Constitution B. The Bill of Rights C. The Declaration of Independence D. The Emancipation Proclamation
37. Unemployment rising and prices falling across the economy may signal: A. A recession B. Inflation C. A trade surplus D. Full employment
38. Federalism means: A. The president controls everything B. Power is divided between national and state governments C. Only the federal government can tax D. States cannot have their own laws
39. The civil rights movement of the 1950s and 1960s is best known for: A. Opposing the income tax B. Fighting racial segregation and discrimination C. Building the interstate highway system D. Expanding American territory
40. A map's scale is used to: A. Show which country is most powerful B. Measure real-world distances from map distances C. List the map's colors D. Name the map's author
-

Part 5: Extended Response Essay (45 minutes)

Prompt: Read the two passages below. Then write an essay explaining which passage makes the stronger argument and why. Use evidence from both passages to support your position. Aim for 4-5 paragraphs.

Passage 1: "Every adult in our city should be required to complete 20 hours of community service each year. Our parks need cleanup, food banks need workers, and neighborhoods need volunteers. A service requirement would get real work done and remind people that a community is something you build, not something you just live in. People who say they are 'too busy' find time for what matters — this law would make community matter."

Passage 2: "Mandatory community service is a contradiction — service stops being service when it is forced. Twenty hours may sound small, but for a single parent working two jobs, it is twenty hours stolen from family or rest. Volunteers who choose to be there do better work than people fulfilling a requirement. If the city needs park cleanups and food bank workers, it should fund those jobs instead of conscripting its residents."

What scorers look for: a clear position, reasons supported by quotes or specific references to the passages, organization (introduction, body paragraphs, conclusion), and clear writing with correct grammar.

Answer Key

1. B | 2. C | 3. B | 4. B | 5. B | 6. B | 7. B | 8. C | 9. B | 10. C
2. C ($\frac{3}{4} + \frac{2}{3} = \frac{9}{12} + \frac{8}{12} = \frac{17}{12} = 1 \frac{5}{12}$) | 12. C ($\$45 \times 0.80 = \$36$) | 13. B ($3x = 15, x = 5$) | 14. C ($0.15 \times 240 = 36$) | 15. C ($12 \times 8 = 96$)
3. C ($\$3.00/4 = \$0.75$ each; $10 \times \$0.75 = \$7.50$) | 17. B ($((4+8+6+10+2)/5 = 30/5 = 6)$) | 18. C ($y - 3 = 5, y = 8$) | 19. B ($2 \times 3.14 \times 5 = 31.4$) | 20. A (3 out of 10)
4. B | 22. C | 23. B | 24. B ($88 - 35 = 53$) | 25. B | 26. C | 27. A | 28. C | 29. B
5. Sample strong answer: *Scientists could collect water samples from the reservoir before and after heavy rain and measure how cloudy the water is (turbidity) or test for soil particles. If cloudiness and particle levels rise sharply right after rain, that supports the hypothesis that runoff is carrying soil into the reservoir.*
6. B | 32. C | 33. B | 34. C | 35. B | 36. C | 37. A | 38. B | 39. B | 40. B

Essay self-check: Did you state which passage is stronger in your first paragraph? Did you quote or reference specific lines from both passages? Did you explain *why* the evidence is convincing (not just list it)? Is your essay organized with an introduction, body, and conclusion? If yes to all four, you are on track.

FINAL PROJECT: Your Personal GED Success Plan

Your final project is a real plan you will actually use. Build it across the course, then submit the finished plan.

The Project

Create a **Personal GED Success Plan**: a 4-6 page document that includes:

1. **Your “why”** — why you are earning your GED and what it unlocks for you (1 page)
2. **Subject-by-subject readiness report** — for each of the four subjects: your starting point, what you have improved, what still needs work, and your target test date (2 pages)
3. **Your study schedule** — a realistic weekly calendar for the next 8 weeks, including which subjects on which days (1 page)
4. **Test-day plan** — which subject you will take first and why, your testing center or online setup, what you will bring, your pacing strategy per subject (1 page)
5. **After the GED** — your next step: the job, program, or school you are aiming for, with one concrete action you will take the week after you pass (1 page)

Grading: Complete and honest (40%), shows real self-assessment (30%), schedule is realistic and specific (20%), next step is concrete (10%).

Planning Worksheets

Worksheet 1: Readiness Tracker

Subject	Starting confidence (1-5)	Now (1-5)	Still needs work	Target test date
RLA				
Math				

Subject	Starting confidence (1-5)	Now (1-5)	Still needs work	Target test date
Science				
Social Studies				

Rule of thumb: schedule the real test when your GED Ready practice score hits 150+.

Worksheet 2: Weekly Study Calendar

Day	Time	Subject	What I'll do
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday	Rest	-	-

Worksheet 3: Test-Day Checklist

- ☐ Photo ID ready
 - ☐ Testing center location and arrival time confirmed (arrive 30 min early)
 - ☐ TI-30XS calculator packed (for math day)
 - ☐ Good sleep the night before (not cramming)
 - ☐ Breakfast eaten
 - ☐ Pacing plan written down per subject
 - ☐ "I am ready" — because you are
-

APPENDICES

Appendix A: Math Formula Sheet (GED Test Day Reference)

The real GED provides a formula sheet. Practice with these until they feel familiar.

Area - Square: $A = s^2$ - Rectangle: $A = lw$ - Triangle: $A = (1/2)bh$ - Circle: $A = \pi \times r^2$ - Parallelogram: $A = bh$ - Trapezoid: $A = (1/2)h(a + b)$

Perimeter and Circumference - Square: $P = 4s$ - Rectangle: $P = 2l + 2w$ - Triangle: $P = s_1 + s_2 + s_3$ - Circle: $C = 2 \times \pi \times r$ (or $\pi \times d$)

Volume and Surface Area - Rectangular prism: $V = lwh$; $SA = 2lw + 2lh + 2wh$ - Cube: $V = s^3$; $SA = 6s^2$ - Cylinder: $V = \pi \times r^2 \times h$; $SA = 2 \times \pi \times r^2 + 2 \times \pi \times r \times h$ - Pyramid: $V = (1/3)Bh$ (B = base area)

Algebra - Slope: $m = (y_2 - y_1) / (x_2 - x_1)$ - Slope-intercept: $y = mx + b$ - Pythagorean theorem: $a^2 + b^2 = c^2$ - Quadratic: $x = (-b \pm \sqrt{b^2 - 4ac}) / 2a$ (rarely needed — know it exists)

Other - Mean = sum of values / number of values - Distance = rate x time - Simple interest: $I = Prt$

Appendix B: Grammar Quick Rules

1. **Subject-verb agreement:** The verb matches the subject, not the nearest noun. ("The list of supplies *is*...")
2. **Its vs. it's:** *Its* = belonging to it. *It's* = it is. Same pattern: *their* (belonging), *they're* (they are), *there* (place).
3. **Your vs. you're:** *Your* = belonging to you. *You're* = you are.
4. **Comma splice:** Never join two complete sentences with only a comma. Use a period, semicolon, or comma + and/but/so.
5. **Fragments:** Every sentence needs a subject and a verb that can stand alone. ("Because the bus was late" is not a sentence.)
6. **Verb tense:** Keep tenses consistent unless the time actually changes.
7. **Parallel structure:** Items in a list match form. ("She likes reading, swimming, and biking" — not "to bike.")

8. **Apostrophes:** Show possession (Maria's book) or contractions (don't). Never make plurals ("apple's" is wrong for more than one apple).

Appendix C: Extended Response Essay — What Scorers Look For

The essay is scored on three traits:

1. **Creation of Arguments and Use of Evidence (6 points):** Clear position, strong reasons, specific quotes or references from both passages.
2. **Development of Ideas and Organizational Structure (6 points):** Logical flow — introduction with position, body paragraphs each making one point, conclusion. Ideas connect.
3. **Clarity and Command of Standard English (6 points):** Varied sentences, correct grammar and punctuation, appropriate word choice.

The 45-minute plan: 10 minutes to read and plan (pick your side, find 3 pieces of evidence), 30 minutes to write (4-5 paragraphs), 5 minutes to proofread.

Appendix D: 100 High-Frequency GED Words

abandon, abolish, abrupt, accurate, adapt, advocate, allege, ambiguous, amend, analyze, ancient, anticipate, apprehensive, arid, assemble, assert, assess, assume, attain, attribute, bias, brief, brutal, capable, cease, cite, civil, clarify, coherent, coincide, collapse, collide, commerce, compare, compile, complex, comprehend, compromise, concentrate, concept, conclude, confer, conflict, conform, consent, consequence, conserve, consider, consist, constant, constrain, contemporary, contend, contract, contradict, contrast, contribute, convene, convert, convey, convince, cooperate, correspond, corrupt, credible, crisis, crucial, crude, curious, current, decline, deduce, deem, defeat, defend, deficit, deliberate, delicate, demand, dense, depict, derive, descend, designate, detect, deteriorate, determine, devastate, devise, devote, diagnose, dignify, dilemma, dilute, diminish, direct, discern, discipline, disclose, discord, discrete, discriminate, dismal, dismiss, disperse, displace, dispose, dispute, disrupt, dissolve, distinct, distort, distribute, diverse, divert, divide, divulge, dominate, donate, drastic, drought, durable, dynamic, eager, eclipse, ecology, economy, efficient, elaborate, elect, elevate, eligible, eliminate, elite, eloquent, emerge, emphasis, employ, enable, enact, enclose, encounter, encourage, endure, enforce, engage, enhance, enormous, enrich, enroll, ensure, entail, enterprise, entertain, entire, entitle, entity, entrust, enumerate, environ, envy, episode, equal, equate,

equip, equivalent, era, erect, erode, err, error, erupt, escalate, escape, escort, essential, establish, esteem, estimate, ethical, ethnic, evacuate, evade, evaluate, evaporate, event, evident, evoke, evolve, exact, exaggerate, exceed, excel, except, excess, exchange, excite, exclude, execute, exempt, exert, exhaust, exhibit, exile, exist, expand, expect, expedite, expel, expend, expense, experience, experiment, expert, expire, explain, explicit, explode, exploit, explore, expose, express, extend, extent, external, extinct, extra, extract, extreme, fabricate, facet, facility, factor, faculty, faint, fair, faith, false, familiar, famine, famous, fascinate, fatal, fatigue, favor, feasible, feature, federal, feeble, fellow, fertile, fervent, fester, festival, fetch, fever, fiction, fierce, figure, file, fill, film, filter, final, finance, find, fine, finish, finite, firm, first, fiscal, fit, fix, flag, flaunt, flavor, flaw, flee, fleet, flesh, flexible, flicker, flight, fling, float, flock, flood, flourish, flow, fluctuate, fluent, fluid, focus, foil, fold, follow, fond, forbid, force, forecast, forego, foreign, forfeit, forge, forget, forgive, formal, format, former, formidable, formula, forsake, forth, fortunate, forum, forward, fossil, foster, foul, found, foundation, founder, fracture, fragile, fragment, fragrant, frail, frame, frank, frantic, fraud, free, freeze, freight, frequent, fresh, fret, friction, friend, fright, fringe, frontier, frost, frown, fruit, frustrate, fuel, fulfill, function, fund, fundamental, funeral, furious, furnish, further, furtive, fury, fuse, fuss, futile, future.

Don't memorize — read through, circle the ones you don't know, and learn those.

Appendix E: Test-Day and Registration Basics

- **Register at ged.com.** Create an account, pick your subject, choose a testing center or online proctored test, and pay. Prices vary by state (roughly \$30-\$40 per subject).
- **Bring a valid photo ID.** No ID, no test.
- **Arrive 30 minutes early.** Late arrivals may lose their slot.
- **The GED Ready practice test** (at ged.com) predicts your score. If you score 150+, you are very likely to pass the real thing.
- **Retakes:** You can retake a subject up to 3 times without waiting; after that, a 60-day wait applies. Discounted retake pricing is common — check ged.com.
- **After you pass all four:** Your state issues your credential (diploma or certificate depending on the state). Order transcripts through your ged.com account.

Appendix F: Free and Low-Cost Study Resources

- **ged.com** — official site: registration, GED Ready practice tests, free study materials

- **Your local public library** — free GED prep books, quiet study space, and often free printing
- **Community colleges** — many offer free or low-cost adult education and GED prep classes
- **211.org** (call or text 211) — connects you to local education and support services
- **Khan Academy ([khanacademy.org](https://www.khanacademy.org))** — free math lessons from basics through algebra
- **Purdue OWL (owl.purdue.edu)** — free writing and grammar help

PRACTICE TESTS

These four practice tests give you extra practice in real GED style - one test for each subject. They are shorter than the official exams, but the questions are written the way GED questions are written: they ask you to read carefully, think it through, and choose the best answer. Take each test under the suggested time limit, then check your answers in the key. Every wrong answer is a gift - it shows you exactly what to study next. You can do this.

RLA PRACTICE TEST

15 questions - suggested time: 30 minutes

Part 1: Reading Comprehension

Read the passage and answer questions 1-4.

Bees are some of the hardest workers in the food system, and most of them never get thanked. About one out of every three bites of food you eat exists because a pollinator - usually a bee - visited a flower first. Apples, almonds, blueberries, cucumbers, and even the alfalfa that feeds dairy cows all depend on bees to move pollen from one blossom to another so fruit and seeds can form.

That system is in trouble. Bee populations have been dropping for years. Scientists point to several causes: loss of habitat as wildflower meadows are paved over, diseases that spread quickly through stressed hives, and pesticides that can disorient bees so they cannot find their way home. When bee numbers fall, farmers must rent hives at higher prices, and those costs show up in the grocery store.

The good news is that ordinary people can help. Planting native flowers, even in a small yard or a window box, gives bees food through the seasons. Reducing pesticide use and leaving a patch of bare ground for ground-nesting bees makes a real difference. No single backyard will save the bees, but millions of small actions add up to a landscape where pollinators can survive.

1. What is the main idea of the passage? A. Bees are interesting insects with complex social lives. B. Bees play a critical role in food production and need protection. C. Farmers should stop renting hives and grow their own bees. D. Pesticides are the only cause of declining bee populations.
2. Based on the passage, which of the following would most likely happen if bee populations kept declining? A. Grocery prices for many fruits and vegetables would rise. B. Farmers would switch to growing only grains. C. People would stop eating apples and blueberries. D. Pesticides would become unnecessary.
3. In the second paragraph, the word “disorient” most nearly means A. strengthen B. confuse C. attract D. protect
4. The author’s main purpose is to A. entertain readers with stories about beekeepers B. argue that farming should be banned near cities C. inform readers about bees’ importance and encourage

small actions D. prove that scientists disagree about why bees are declining

Read the passage and answer questions 5-8.

For ten years, the corner lot at 5th and Main sat empty - cracked concrete, broken glass, and weeds. Then a group of neighbors asked the city for permission to use it, and the lot was transformed. Volunteers hauled away trash, built raised beds from donated lumber, and planted tomatoes, peppers, collard greens, and sunflowers. They called it the 5th Street Community Garden.

The garden changed more than the landscape. Families who had never spoken now trade recipes and seedlings. Children who thought vegetables came from a bag watch seeds sprout and learn patience. On Saturday mornings, the garden hosts a small market where anyone can take what they need and leave what they can. The organizers say the harvest matters, but the trust matters more. A vacant lot taught a whole block how to be neighbors.

5. According to the passage, what was on the lot before the garden? A. A playground B. An empty lot with trash and weeds C. A parking lot D. A small farm
6. The author suggests that the garden's most important result is A. the money raised at the Saturday market B. the trust and connection built among neighbors C. the variety of vegetables grown D. the improvement in property values
7. In the first paragraph, the word "transformed" most nearly means A. painted B. sold C. completely changed D. fenced off
8. The passage is mainly organized by A. comparing two different gardens B. describing a problem and then its solution C. listing events in reverse time order D. arguing for and against community gardens

Part 2: Editing and Grammar

Choose the best answer for each question.

9. Which sentence is correct? A. The group of students was excited about the field trip. B. The group of students were excited about the field trip. C. The group of students are excited about the field trip. D. The group of students be excited about the field trip.
10. Which is the best way to fix this run-on sentence? "She studied all night she passed the test." A. She studied all night, she passed the test. B. She studied all night; and she passed the test. C. She studied all night, so she passed the test. D. She studied all night she passed, the test.

11. Choose the sentence with the correct word. A. Their going to the library after class. B. They're going to the library after class. C. There going to the library after class. D. Theyre going to the library after class.
12. Which sentence uses the underlined word correctly? A. The manager spoke good at the meeting. B. The manager spoke well at the meeting. C. The manager spoke more good at the meeting. D. The manager spoke real good at the meeting.

Part 3: Comparing Two Passages

Read both passages and answer questions 13-15.

Passage A - Dr. Elena Ruiz, sleep researcher

Teenagers are not lazy - their brains are on a different clock. During puberty, the hormone that signals sleepiness is released later at night, so most teens cannot fall asleep before 11 p.m. no matter how hard they try. Yet most high schools start before 8 a.m., cutting sleep short. Studies of schools that moved start times later found better attendance, fewer car crashes involving teen drivers, and higher grades. Starting school later is a simple change backed by biology.

Passage B - Coach Dale Morgan

I understand the science, but moving the school day later creates real problems. After-school sports, part-time jobs, and bus schedules all depend on the current timetable. If school ends at 4:30 instead of 3:00, many students lose work hours their families count on, and evening practices push homework past midnight - which defeats the purpose. Instead of moving the whole day, schools should cut down on homework and limit late-night phone use.

13. On which point do both authors most likely agree? A. Teen sleep is important for health and learning. B. Schools should start at 9 a.m. C. Sports are more important than sleep. D. Homework should be eliminated.
14. Which piece of evidence would best support Passage A's argument? A. A survey showing teens enjoy sleeping late on weekends B. Data showing improved grades at schools with later start times C. A coach's opinion about practice schedules D. A list of schools that start before 8 a.m.
15. How do the authors' recommendations differ? A. Ruiz wants schools to start later; Morgan wants to keep the schedule and address other causes of lost sleep. B. Ruiz wants to ban homework; Morgan wants longer school days. C. Ruiz wants more sports; Morgan wants less sleep research. D. Both authors recommend exactly the same policy.

Answer Key

1. **B** - The passage explains bees' role in food production, the threats they face, and how to help.
 2. **A** - The passage says hive rental costs rise and "those costs show up in the grocery store."
 3. **B** - "Disorient" bees cannot find their way home, meaning they are confused.
 4. **C** - The author informs about bees and ends by encouraging small helpful actions.
 5. **B** - The passage describes cracked concrete, broken glass, and weeds.
 6. **B** - The organizers say "the harvest matters, but the trust matters more."
 7. **C** - The lot went from trash-filled to a thriving garden: completely changed.
 8. **B** - The passage presents the vacant lot (problem) and the garden (solution).
 9. **A** - "Group" is singular, so it takes the singular verb "was."
 10. **C** - Joining the two ideas with ", so" fixes the run-on correctly.
 11. **B** - "They're" is the contraction of "they are."
 12. **B** - "Well" is the adverb that correctly describes how the manager spoke.
 13. **A** - Both authors treat teen sleep as important; they disagree on the solution.
 14. **B** - Data on improved grades directly supports the claim that later starts help.
 15. **A** - Ruiz favors later start times; Morgan favors keeping the schedule and reducing homework and phone use.
-

MATH PRACTICE TEST

20 questions - suggested time: 35 minutes

1. What is $\frac{3}{4} + \frac{2}{3}$? A. $\frac{5}{7}$ B. $\frac{5}{12}$ C. $1\frac{5}{12}$ D. $\frac{6}{12}$
2. What is 15% of 240? A. 24 B. 30 C. 36 D. 48
3. What is $5.6 - 2.85$? A. 2.75 B. 3.25 C. 2.85 D. 3.75
4. Solve for x: $3x + 7 = 25$ A. 4 B. 6 C. 8 D. 9
5. Simplify: $2(x - 3) + 4x$ A. $6x - 3$ B. $6x - 6$ C. $2x - 6$ D. $6x + 6$
6. A rectangle is 12 feet long and 9 feet wide. What is its area? A. 21 square feet B. 42 square feet C. 84 square feet D. 108 square feet
7. A triangle has sides of 8 inches, 10 inches, and 12 inches. What is its perimeter? A. 20 inches B. 28 inches C. 30 inches D. 40 inches
8. What is the volume of a cube with sides 5 centimeters long? A. 25 cubic centimeters B. 75 cubic centimeters C. 125 cubic centimeters D. 150 cubic centimeters
9. A circle has a diameter of 14 inches. Using $\frac{22}{7}$ for pi, what is its circumference? A. 22 inches B. 28 inches C. 44 inches D. 88 inches
10. What is the mean (average) of 4, 7, 9, 12, and 18? A. 9 B. 10 C. 11 D. 12
11. A bag holds 3 red marbles and 5 blue marbles. What is the probability of drawing a red marble? A. $\frac{3}{5}$ B. $\frac{3}{8}$ C. $\frac{5}{8}$ D. $\frac{1}{3}$
12. Two numbers are in a ratio of 2 to 5. If their total is 28, what is the smaller number? A. 8 B. 10 C. 14 D. 20
13. A jacket costs \$40. The price increases to \$50. What is the percent increase? A. 10% B. 20% C. 25% D. 30%
14. A car travels 300 miles in 5 hours. What is its average speed in miles per hour? A. 50 B. 55 C. 60 D. 65
15. Solve for x: $(x / 4) - 5 = 3$ A. 8 B. 12 C. 24 D. 32
16. Evaluate: $2^3 + 3 \times 4$ A. 20 B. 32 C. 44 D. 56

17. A triangle has a base of 10 meters and a height of 6 meters. What is its area? A. 16 square meters B. 30 square meters C. 32 square meters D. 60 square meters
18. What is the median of 3, 8, 5, 11, 7? A. 5 B. 7 C. 8 D. 11
19. An 8% sales tax is charged on a \$75 item. How much is the tax? A. \$4.00 B. \$5.00 C. \$6.00 D. \$8.00
20. If the probability of rain tomorrow is $\frac{1}{4}$, what is the probability it will NOT rain? A. $\frac{1}{4}$ B. $\frac{1}{2}$ C. $\frac{3}{4}$ D. $\frac{4}{4}$

Answer Key

1. **C** - Common denominator 12: $\frac{9}{12} + \frac{8}{12} = \frac{17}{12} = 1 \frac{5}{12}$.
2. **C** - $0.15 \times 240 = 36$.
3. **A** - $5.60 - 2.85 = 2.75$.
4. **B** - Subtract 7: $3x = 18$, then divide by 3: $x = 6$.
5. **B** - Distribute: $2x - 6 + 4x$, then combine: $6x - 6$.
6. **D** - Area = length $\times$ width = $12 \times 9 = 108$ square feet.
7. **C** - Perimeter = sum of sides = $8 + 10 + 12 = 30$ inches.
8. **C** - Volume of a cube = side³ = $5 \times 5 \times 5 = 125$ cubic centimeters.
9. **C** - Circumference = $\pi \times \text{diameter} = (\frac{22}{7}) \times 14 = 22 \times 2 = 44$ inches.
10. **B** - Sum = 50; divide by 5 numbers: $50 / 5 = 10$.
11. **B** - 3 red out of 8 total marbles: $\frac{3}{8}$.
12. **A** - $2 + 5 = 7$ parts; $28 / 7 = 4$ per part; smaller = $2 \times 4 = 8$.
13. **C** - Increase = 10; $10 / 40 = 0.25 = 25\%$.
14. **C** - Speed = distance / time = $300 / 5 = 60$ mph.
15. **D** - Add 5: $x/4 = 8$, then multiply by 4: $x = 32$.
16. **A** - Exponents first: $2^3 = 8$; then multiply: $3 \times 4 = 12$; add: $8 + 12 = 20$.
17. **B** - Area = $\frac{1}{2} \times \text{base} \times \text{height} = 0.5 \times 10 \times 6 = 30$ square meters.
18. **B** - Ordered: 3, 5, 7, 8, 11; the middle value is 7.
19. **C** - $0.08 \times 75 = 6.00$ dollars.
20. **C** - Probabilities sum to 1: $1 - \frac{1}{4} = \frac{3}{4}$.

SCIENCE PRACTICE TEST

15 questions - suggested time: 25 minutes

Read the experiment and answer questions 1-4.

Maya wants to know whether fertilizer helps tomato plants grow taller. She plants 15 identical tomato seedlings in identical pots with the same soil. She divides them into three groups of 5. Group A gets no fertilizer. Group B gets one spoonful of fertilizer per week. Group C gets three spoonfuls per week. All plants get the same amount of water and sunlight. After four weeks, she measures each plant's height. Group B plants are the tallest on average.

1. What is the independent variable in Maya's experiment? A. The height of the plants B. The amount of fertilizer C. The amount of water D. The type of soil
2. Which group is the control group? A. Group A B. Group B C. Group C D. There is no control group
3. Which of the following is a constant in this experiment? A. The amount of fertilizer B. The height of the plants C. The amount of sunlight D. The number of groups
4. Which conclusion is best supported by Maya's results? A. Fertilizer always harms tomato plants. B. A moderate amount of fertilizer helped most; more was not better. C. Water is more important than fertilizer. D. Tomato plants cannot grow in pots.

Read the experiment and answer questions 5-6.

Jamal places two identical ice cubes on a table. He sprinkles salt on one cube and leaves the other plain. The salted cube melts completely in 12 minutes. The plain cube melts in 20 minutes.

5. What was Jamal's hypothesis most likely to be? A. Salt makes ice melt faster. B. Ice melts faster in sunlight. C. Larger ice cubes melt more slowly. D. Salt makes water freeze faster.
6. What is the dependent variable in this experiment? A. The amount of salt B. The size of the ice cubes C. The time it takes the ice to melt D. The temperature of the table

Study the data and answer questions 7-8.

A student records the high temperature each day for five days: Monday 70 F, Tuesday 74 F, Wednesday 79 F, Thursday 76 F, Friday 72 F.

7. Which day had the highest temperature? A. Monday B. Tuesday C. Wednesday D. Friday

8. What is the difference between the highest and lowest temperatures that week? A. 5 degrees B. 7 degrees C. 9 degrees D. 12 degrees
9. During photosynthesis, green plants take in carbon dioxide and release which gas? A. Nitrogen B. Hydrogen C. Oxygen D. Helium
10. The basic unit of all living things is the A. atom B. cell C. molecule D. organ
11. When water boils, it changes from a liquid to a A. solid B. gas C. plasma D. crystal
12. Pushing a shopping cart requires force. Which statement about force is true? A. A heavier cart requires more force to push than a lighter cart. B. Force is only needed to stop objects, not to move them. C. Heavier objects need less force to move. D. Force has no effect on objects at rest.
13. In the water cycle, evaporation happens when A. rain falls from clouds B. the sun heats water and it becomes vapor C. plants absorb water through roots D. ice melts into streams
14. Earth's seasons are mainly caused by A. Earth's distance from the sun B. the tilt of Earth's axis C. changes in the sun's brightness D. ocean currents reversing direction
15. A bar chart shows recycling rates: City A 40%, City B 55%, City C 30%. Which conclusion is supported? A. City C recycles the most. B. City B has the highest recycling rate. C. All three cities recycle equally. D. City A recycles more than City B.

Answer Key

1. **B** - The independent variable is what the scientist changes: the amount of fertilizer.
2. **A** - Group A gets no fertilizer, so it is the baseline for comparison: the control.
3. **C** - Sunlight was kept the same for all groups, making it a constant.
4. **B** - Group B (moderate fertilizer) grew tallest, so a moderate amount helped most.
5. **A** - Jamal tested salt versus no salt, so his hypothesis was that salt makes ice melt faster.
6. **C** - The dependent variable is what is measured: the melting time.
7. **C** - Wednesday's 79 F is the highest of the five days.
8. **C** - Highest 79 minus lowest 70 equals 9 degrees.
9. **C** - Plants take in carbon dioxide and release oxygen during photosynthesis.
10. **B** - The cell is the basic unit of life.

11. **B** - Boiling turns liquid water into water vapor, a gas.
 12. **A** - Greater mass requires greater force to move - this is Newton's second law in action.
 13. **B** - Evaporation is liquid water becoming vapor due to heat, usually from the sun.
 14. **B** - The tilt of Earth's axis causes different parts of Earth to receive different amounts of sunlight through the year.
 15. **B** - City B's 55% is higher than City A's 40% and City C's 30%.
-

SOCIAL STUDIES PRACTICE TEST

15 questions - suggested time: 25 minutes

1. Which branch of the U.S. government interprets laws and decides whether they are constitutional? A. The legislative branch B. The executive branch C. The judicial branch D. The military branch
2. The First Amendment protects all of the following EXCEPT A. freedom of speech B. freedom of the press C. the right to a speedy trial D. freedom of religion
3. The 26th Amendment set the voting age at A. 16 B. 18 C. 21 D. 25
4. Federalism is best described as A. rule by a single king B. power shared between national and state governments C. government run entirely by local councils D. the belief that the federal government should do everything
5. The U.S. Civil War was fought from 1861 to 1865 mainly over A. trade with Europe B. slavery and the power of the federal government C. the right to vote for women D. control of western railroads
6. The Great Depression began with A. the stock market crash of 1929 B. the end of World War II C. the invention of the automobile D. a major earthquake in California
7. The March on Washington in 1963, where Dr. Martin Luther King Jr. gave his "I Have a Dream" speech, was organized to demand A. lower taxes B. an end to segregation and discrimination C. the building of new highways D. American withdrawal from a war
8. The phrase "all men are created equal" comes from which document? A. The U.S. Constitution B. The Bill of Rights C. The Declaration of Independence D. The Articles of Confederation
9. If demand for a product rises but supply stays the same, the price will most likely A. fall B. stay exactly the same C. rise D. become zero
10. Inflation means that A. prices are falling and money buys more B. prices are rising and money buys less C. unemployment has disappeared D. taxes have been eliminated
11. Tax revenue collected by governments is mainly used to A. pay for public services like roads, schools, and defense B. fund private businesses directly C. give bonuses to elected officials D. purchase goods from other countries only

12. On a map, the legend (or key) is used to A. show which direction is north B. explain what the symbols on the map mean C. measure distances between cities D. list the population of each state
13. The Mississippi River flows south and empties into the A. Atlantic Ocean B. Pacific Ocean C. Gulf of Mexico D. Great Lakes

Study the chart and answer questions 14-15.

Voter turnout by age group in a recent election: ages 18-29: 35%, ages 30-44: 50%, ages 45-64: 62%, ages 65 and older: 70%.

14. Which age group had the highest voter turnout? A. 18-29 B. 30-44 C. 45-64 D. 65 and older
15. Which conclusion is best supported by the chart? A. Young people vote more than older people. B. Voter turnout increases with age. C. Everyone over 30 votes at the same rate. D. Turnout was the same across all age groups.

Answer Key

1. **C** - The judicial branch (the courts) interprets laws and rules on constitutionality.
2. **C** - The right to a speedy trial is in the Sixth Amendment, not the First.
3. **B** - The 26th Amendment (1971) lowered the voting age to 18.
4. **B** - Federalism divides power between the national government and the states.
5. **B** - The Civil War centered on slavery and disputes over federal versus state power.
6. **A** - The October 1929 stock market crash triggered the Great Depression.
7. **B** - The 1963 march demanded civil rights, jobs, and an end to segregation.
8. **C** - The phrase opens the Declaration of Independence (1776).
9. **C** - When demand rises and supply does not, competition for the product pushes prices up.
10. **B** - Inflation is a general rise in prices, so each dollar buys less.
11. **A** - Taxes fund public goods and services such as roads, schools, and national defense.
12. **B** - The legend explains the meaning of symbols used on the map.
13. **C** - The Mississippi River flows into the Gulf of Mexico.
14. **D** - The 65-and-older group turned out at 70%, the highest rate shown.
15. **B** - Turnout rises steadily across the age groups, from 35% to 70%.

Finished all four? Go back to any questions you missed and review those topics in the course modules. Practice is how passing scores are built - one question at a time.

APPENDIX G: 50 Extra Math Practice Problems

Answers at the end. No calculator for 1-25; calculator allowed for 26-50 (just like the real test).

Fractions, Decimals, Percents (1-15)

1. $\frac{2}{5} + \frac{1}{3} = ?$
2. $\frac{7}{8} - \frac{1}{4} = ?$
3. $\frac{3}{4} \times \frac{8}{9} = ?$
4. $\frac{5}{6}$ divided by $\frac{2}{3} = ?$
5. Write 0.65 as a fraction in lowest terms.
6. Write $\frac{7}{20}$ as a decimal.
7. What is 25% of 80?
8. What percent of 50 is 15?
9. 40 is 80% of what number?
10. A \$60 jacket is on sale for 30% off. What is the sale price?
11. A restaurant bill is \$48. You leave a 20% tip. How much is the tip?
12. Round 4.678 to the nearest hundredth.
13. Put in order from least to greatest: 0.4, $\frac{3}{8}$, 45%, 0.42
14. A car gets 28 miles per gallon. How far can it go on 12 gallons?
15. If 3 pounds of apples cost \$4.50, what is the price per pound?

Algebra (16-30)

16. Solve: $x + 9 = 21$
17. Solve: $5x = 45$
18. Solve: $2x - 6 = 14$
19. Solve: $\frac{x}{4} + 3 = 8$
20. Simplify: $3(x + 4) - 2x$
21. If $y = 2x + 1$, what is y when $x = 5$?
22. Solve: $4(x - 2) = 20$
23. What is the slope of the line through (1, 2) and (5, 10)?

24. Solve the inequality: $x + 5 > 12$
25. Evaluate: $3^2 + 4^2$
26. Solve: $0.5x + 1.5 = 7$
27. A phone plan costs \$30 plus \$0.10 per minute. Write an equation for the monthly cost C for m minutes.
28. If $f(x) = 3x - 2$, find $f(4)$.
29. Solve: $2x + 3 = x + 10$
30. The sum of two consecutive numbers is 31. What are the numbers?

Geometry (31-40)

31. A square has sides of 9 cm. What is its perimeter? Its area?
32. A triangle has base 10 and height 6. What is its area?
33. A circle has diameter 14. What is its circumference? (Use 3.14 for π .)
34. A rectangular box is $5 \times 3 \times 2$. What is its volume?
35. Find the missing side: a right triangle has legs 6 and 8. What is the hypotenuse?
36. A cylinder has radius 3 and height 10. What is its volume? (Use 3.14 for π .)
37. Two angles are supplementary. One is 65 degrees. What is the other?
38. A map scale is 1 inch = 25 miles. Two cities are 4.5 inches apart on the map. How far apart are they really?
39. A parallelogram has base 12 and height 7. What is its area?
40. The volume of a cube is 64 cubic inches. What is the length of one side?

Data and Probability (41-50)

41. Find the mean of: 12, 15, 10, 18, 5
42. Find the median of: 7, 3, 9, 1, 5
43. Find the mode of: 4, 6, 4, 9, 4, 2
44. Find the range of: 22, 35, 19, 41, 28
45. A coin is flipped twice. What is the probability of two heads?
46. A bag has 5 green and 15 yellow marbles. What is the probability of drawing green?
47. A spinner has 8 equal sections numbered 1-8. What is the probability of spinning an even number?

48. In a class of 30 students, 18 are women. What percent are women?
49. A bar graph shows sales: Mon \$200, Tue \$350, Wed \$300, Thu \$450, Fri \$500. What were total weekly sales?
50. If the probability of rain is 30%, what is the probability it does NOT rain?
-

Answer Key

1. $\frac{11}{15}$ | 2. $\frac{5}{8}$ | 3. $\frac{2}{3}$ | 4. $\frac{5}{4}$ (or $1\frac{1}{4}$) | 5. $\frac{13}{20}$ | 6. 0.35 | 7. 20 | 8. 30% | 9. 50 | 10. \$42 | 11. \$9.60 | 12. 4.68 | 13. $\frac{3}{8}$, 0.4, 0.42, 45% | 14. 336 miles | 15. \$1.50
2. 12 | 17. 9 | 18. 10 | 19. 20 | 20. $x + 12$ | 21. 11 | 22. 7 | 23. 2 | 24. $x > 7$ | 25. 25 | 26. 11 | 27. $C = 30 + 0.10m$ | 28. 10 | 29. 7 | 30. 15 and 16
3. $P = 36$ cm, $A = 81$ sq cm | 32. 30 | 33. 43.96 | 34. 30 | 35. 10 | 36. 282.6 | 37. 115 degrees | 38. 112.5 miles | 39. 84 | 40. 4 inches
4. 12 | 42. 5 | 43. 4 | 44. 22 | 45. $\frac{1}{4}$ | 46. $\frac{1}{4}$ ($\frac{5}{20}$) | 47. $\frac{1}{2}$ ($\frac{4}{8}$) | 48. 60% | 49. \$1,800 | 50. 70%
-

APPENDIX H: Essay Practice Prompts

Five extra extended-response prompts. For each: 10 minutes to plan, 30 minutes to write, 5 minutes to proofread. Then check yourself against the scoring traits in Appendix C.

Prompt 1: Passage A argues school should start later for teenagers' health. Passage B argues later starts disrupt bus schedules, sports, and parents' work. Which makes the stronger argument?

Prompt 2: Passage A argues cities should ban cars from downtown areas to cut pollution. Passage B argues bans hurt small businesses and people who cannot walk or bike easily. Which makes the stronger argument?

Prompt 3: Passage A argues voting should be required by law, like jury duty. Passage B argues forced voting produces uninformed votes and violates freedom. Which makes the stronger argument?

Prompt 4: Passage A argues college should be free for everyone. Passage B argues free college would lower quality and saddle taxpayers, and trade schools deserve equal support. Which makes the stronger argument?

Prompt 5: Passage A argues social media does more harm than good for teenagers. Passage B argues it connects isolated kids and builds digital skills they will need. Which makes the stronger argument?

Planning guide for each prompt: (1) Read both passages and underline each side's best 2-3 reasons. (2) Choose the side whose evidence is more specific and whose logic holds up better. (3) Write your position in one sentence — that is your thesis. (4) Build 2-3 body paragraphs, each with one reason plus a quote from the passages. (5) Conclude by restating your position and why the other side's best point still loses.

APPENDIX I: Rapid Review Sheets

Tear these out (mentally) and read them the week before each test. Everything below is the highest-yield material in this book.

RLA Rapid Review

Reading: Read the questions first, then the passage. Main idea = what the author most wants you to know. Inference = what must be true based on the text (never add outside opinions). Fact = can be proven; opinion = believes/feels/thinks language. Author's purpose: inform (facts), persuade (arguments), entertain (stories).

Comparing passages: Find where they agree and disagree. The stronger argument has more specific evidence, addresses the other side, and uses logic over emotion.

Editing: Subject-verb agreement (ignore phrases between them). Its/it's, their/they're/there, your/you're. No comma splices (two sentences need a period, semicolon, or comma + and/but/so). No fragments (needs subject + verb). Keep verb tenses consistent. Parallel structure in lists.

Essay (45 min): 10 min plan, 30 min write, 5 min proofread. State your position in paragraph 1. Each body paragraph = one reason + one quote from the passages. Address the other side's best point. Conclude clearly. Scorers want: clear argument, evidence from BOTH passages, organization, correct English.

Pacing: 150 minutes total. Don't spend more than 2 minutes on any one question — mark it, move on, come back.

Math Rapid Review

Order of operations: Parentheses, Exponents, Multiply/Divide (left to right), Add/Subtract (left to right).

Fractions: Add/subtract needs common denominators. Multiply straight across. Divide by flipping the second fraction.

Percents: % means "out of 100." To find x% of a number: multiply by $x/100$. Discount: multiply by $(1 - \text{discount})$. Tax/tip: multiply by $(1 + \text{rate})$. Percent change = $(\text{new} - \text{old}) / \text{old}$.

Proportions: $a/b = c/d$ — cross-multiply: $ad = bc$. Unit rate = price / quantity.

Equations: Do the same thing to both sides. Undo addition with subtraction, multiplication with division. Distribute first: $a(b + c) = ab + ac$. Check your answer by plugging it back in.

Slope: $(y_2 - y_1) / (x_2 - x_1)$. $y = mx + b$: m is slope, b is where the line crosses the y -axis.

Geometry: Rectangle $A = lw$, $P = 2l + 2w$. Triangle $A = (1/2)bh$. Circle $C = 2 \times \pi \times r$, $A = \pi \times r^2$. Box $V = lwh$. Cylinder $V = \pi \times r^2 \times h$. Pythagorean: $a^2 + b^2 = c^2$ (look for 3-4-5 and 5-12-13).

Data: Mean = average. Median = middle number (sort first). Mode = most frequent. Range = max - min. Probability = favorable outcomes / total outcomes.

Test tactics: Part 1 = no calculator (mental math). Part 2 = TI-30XS allowed. Formula sheet is given — know where each formula lives on it. Estimate before calculating to catch errors. Plug answer choices back into the problem when stuck.

Science Rapid Review

The GED tests reasoning, not memorization. Most answers are IN the passage, chart, or experiment description. Read those first.

Experiments: Independent variable = what the scientist changes. Dependent variable = what is measured. Control group = no treatment, for comparison. Constants = everything kept the same. Bigger sample = more reliable. Correlation is not causation.

Short answers (2 questions, ~10 min each): Structure = claim + evidence + reasoning. State your answer, cite data from the prompt, explain why the data supports your answer. 3-5 sentences is enough.

Life science: Photosynthesis (plants make food from sunlight, CO_2 , water; releases oxygen). Cells are the basic unit of life. Energy flows through food chains (producers to consumers). Ecosystems: changes to one part affect the whole.

Physical science: Newton's first law (objects resist changes in motion). Energy can't be created or destroyed, only converted. Matter: solid/liquid/gas; mass is conserved in reactions.

Earth science: Water cycle (evaporation, condensation, precipitation, collection). Weather = short-term; climate = long-term pattern. The tilt of Earth's axis causes seasons.

Data skills: Read axes and units first. Trend = overall direction. Outlier = point that doesn't fit. Range = max - min.

Social Studies Rapid Review

Civics: Three branches — Legislative (Congress: makes laws), Executive (President: enforces laws), Judicial (courts: interprets laws). Checks and balances. Bill of Rights = first 10 amendments (speech, religion, press, guns, due process...). Federalism = power shared between national and state governments.

Key amendments: 1st (speech/religion/press), 13th (ended slavery), 14th (citizenship, equal protection), 15th (voting regardless of race), 19th (women's vote), 26th (voting age 18).

U.S. history spine: Colonization -> Revolution (1776) -> Constitution (1787) -> westward expansion -> Civil War (1861-65, slavery ends) -> industrialization -> WWI -> Great Depression (1929) -> WWII -> Cold War -> Civil Rights Movement (1950s-60s) -> to today.

Economics: Supply and demand (more demand + same supply = higher prices). Inflation = prices rising, money worth less. Recession = economy shrinking, unemployment rising. Taxes fund government services.

Geography: Read the title, legend, and labels before answering. Scale converts map distance to real distance. Location shapes history (rivers, coasts, resources).

Document questions: The answer is almost always in the document. Read it twice. For cartoons: identify the symbols, then the message. For charts: check what is being compared and the time period.

Test-Day Reminders (All Subjects)

- No penalty for wrong answers — NEVER leave a question blank.
- Eliminate obviously wrong choices first; your odds jump from 25% to 33% or 50%.
- Mark hard questions and return to them; easy points first.
- Read every question twice — half of all errors come from misreading.
- Sleep beats cramming. Eat breakfast. Arrive 30 minutes early with photo ID.
- You can take subjects one at a time. Play to your strengths first — an early pass builds momentum.

INDEX

4-4-4 breath, 18 Absolute value, 61 Active reading, 24 Anecdote, 53 Annotating, 25 Antecedent, 44 Appositive, 48 Area, 60 Argument, 6 Assumption, 33 Author's purpose, 34 Banked subject, 14 Bill of Rights, 103 Cell, 32 CER, 6 Checks and balances, 104 Chunking, 26 Claim, 26 Cold War, 109 College Ready (165-174), 10 College Ready + Credit (175+), 10 College Ready + Credit (175-200), 136 Comma splice, 46 Common denominator, 62 Computer-based test, 16 Conclusion, 25 Conservation of energy/mass, 96 Consistency beats intensity, 12 Control group, 88 Control variables, 88 Controlled variables, 129 Correlation, 89 Counterargument, 37 Cross-multiplication, 67 Declaration of Independence (1776), 111 Dependent variable, 87 Diagnostic self-check, 11 Distributive property, 68 Ecosystem, 92 Elimination, 18 Emancipation Proclamation (1863), 112 Equation, 6 Erosion, 97 Estimate, 18 Evidence, 9 Evidence quality, 35 Explicit, 29 Exponent, 59 Expression, 59 Extended response, 51 Extended-response essay, 6 $f(x)$ notation, 76 Fact, 7 FANBOYS, 47 Federal Reserve, 113 Federalism, 104 Flag (a question), 20 Formula sheet, 6 Fragment, 46 Function, 72 GDP, 114 GED (General Educational Development), 10 GED Ready, 5 High school equivalency credential, 6 Homophones, 45 Hypotenuse, 78 Hypothesis, 87 Implicit, 29 Indefinite pronoun, 41 Independent variable, 87 Inequality, 73 Inference, 24 Inflation, 113 Integer, 61 Jim Crow laws, 109 Judicial review, 104 Kinetic / Potential energy, 96 Legend, 95 Like terms, 68 Live proctor, 7 Main idea, 25 Mean, 6 Median, 81 Mode, 35 New Deal, 109 No-penalty guessing, 20 Nonviolent resistance, 110 Numerator / denominator, 66 Opinion, 29 Parallel structure, 46 Parallelism, 48 Passing score, 3 PEMDAS, 59 Percent, 17 Percent change, 63 Perfect square, 60 Perimeter, 77 pH scale, 96 Photosynthesis, 93 Place value, 58 Plate tectonics, 97 Popular sovereignty, 103 Present perfect, 42 Previewing, 26 Probability, 81 Proctored, 10 Producer / Consumer / Decomposer, 96 Progress log, 13 Progressive Movement, 109 Pronoun agreement, 45 Proportion, 66 Pythagorean theorem, 78 Radius, 77 Range, 8 Ratio, 9 Recession, 113 Reciprocal, 66 Reconstruction Amendments, 111 Renewable / Nonrenewable resources, 100 Repeating decimal, 66 RLA (Reasoning Through Language Arts), 10 Rotation / Revolution, 100 Rule of law, 103 Run-on sentence, 50 Scale factor, 79 Scientific reasoning, 6 Second pass, 17 Semicolon, 47 Separation of powers, 103 Simplify (reduce), 66 Slope, 74 Square root, 61 Stimulus, 128 Subject-verb agreement, 41 Supply and demand, 113 Supporting detail, 25 Supporting details, 25 Supremacy Clause, 105 Taper, 132 Testing center, 7 The 90/4 rhythm, 12 The three traits, 54 Thesis, 52 TI-30XS MultiView, 124 Tone, 25 Tone words, 25 Transcript, 134 Transition, 25 Transition words, 29 Trend, 98 Triage, 118 Unemployment, 27 Unit rate, 67 Verb tense, 42 Volume, 72 Warm up, 12 Water cycle, 97 Weather / Climate, 100