The ACT

Why is the ACT Test important?

1. The ACT Test improves access and opportunity.
2. It accurately predicts performance. There is always a chance to improve after exposure to the ACT Test.
3. It verifies appropriate course placement in high school and college courses.
4. It exposes students to college and scholarship programs.
5. It helps you decide future college and/or career pathways according to your strengths.
6. It is a graduation requirement!

About the ACT Test

Let's Talk about ACT Math!

ACT math measures how quickly and accurately a student can recall a wide variety of surface level math skills that have been taught over a student's entire academic career. **Questions are multiple choice** and designed to assess specific mathematical skills. This is a **45-question, 50 minute test** designed to assess math skills students have typically acquired in courses taken up to the beginning of grade 12. In Tennessee, **a few standards from the fourth-grade math courses are on the ACT**. Students **may use a calculator on the entire math portion of the ACT**.

Let's Talk about ACT English!

For the English section, students have **35 minutes to answer 50 questions**, including usage/mechanics (**punctuation, grammar and usage, sentence structure**) and rhetorical skills (**strategy, organization, and style**).

Let's Talk about ACT Reading!

For the reading section, students **have 40 minutes to read four complex passages and answer 36 questions.** The reading test is made up of **four sections**, each containing **one long or two shorter prose passages** that are representative of the level and kinds of text commonly encountered in first-year college curricula. Passages are on topics in **social studies, natural sciences, literary narrative (including prose fiction), and the humanities (fine arts, philosophy**).

Let's Talk about ACT Science!

The science subtest of the ACT **does not assess** specific understanding or comprehension of scientific topics (i.e., biology, chemistry, physics). **Instead, the ACT aims to measure a student's ability to solve problems and interpret information** under strict time constraints as a proxy for scientific reasoning. The test presents **several sets of scientific information**, each followed by **a number of multiple-choice test questions, including data representation, research summaries, and conflicting viewpoints**. This **subtest has 40 questions in 40 minutes**.

Key Strategies for Math

1. Make the most of your time!
2. It is vital that you read EVERY problem. Most students run out of time, so spend your time on those that you can work.
    a. If the problem is EASY, then work it.
    b. If the problem is HARD, then skip it.
    c. If the problem is IMPOSSIBLE, then guess and bookmark it
3. After working the EASY problems, come back to the HARD problems. Save IMPOSSIBLE problems for last.
4. All problems count the same. Spend time working those that you can get correct.
5. Guessing helps your score. Eliminate wrong answers if you can. Also, don't pick any choice that looks radically different from the others.
6. While a calculator is EXTREMELY helpful, the ACT does not require a calculator. In fact, every problem can be worked without a calculator—but we wouldn't recommend it!

Jane Ross TUTORING — Math Facts You Should Know

ACT Score Range	Algebra	Geometry	Trigonometry	Statistics & Probability
13-19	Adding terms: $x + x = 2x$ Multiplying terms: $x \cdot x = x^2$ Arithmetic sequence: 2, 4, 6, 8, 10, ___ Geometric sequence: 2, 4, 8, 16, 32, ___ Simple percent formula: $whole \times percent = part$	Congruent angles within two parallel lines cut by transversal Area of basic shapes: square, rectangle s^2 lw		Arithmetic average (mean): $\frac{sum\ of\ terms}{number\ of\ terms}$
20-27	FOIL method: $(x+y)(x+y) = x^2+xy+xy+y^2 = x^2+2xy+y^2$ Scientific notation: $a \times 10^n$, a must be between 0-10 Linear equation: $y = mx + b$, m is slope; b is y-intercept Solve quadratic equations by factoring: $x^2+7x+12=0$, $(x+3)(x+4)=0$, $x=-3,-4$ Rules of monomials: $(x^2)(x^3)=x^5$, $(x^2)^3=x^6$ and $\frac{x^3}{x^2}=x$, $\frac{x^2}{x^3}=x^{-1}=\frac{1}{x}$	triangle, parallelogram: $\frac{1}{2}bh$, bh circle: πr^2 Pythagorean Theorem: $a^2+b^2=c^2$ Pythagorean triples: 3, 4, 5 // 5, 12, 13 // 7, 24, 25 Slope of a line: $m=\frac{y_2-y_1}{x_2-x_1}$ Midpoint of a line: $M=\left(\frac{x_1+x_2}{2},\frac{y_1+y_2}{2}\right)$	hypotenuse, opposite, θ, adjacent $\sin\theta = \frac{opposite}{hypotenuse}$ $\cos\theta = \frac{adjacent}{hypotenuse}$ $\tan\theta = \frac{opposite}{adjacent}$ Many students use the memory trick "SOH-CAH-TOA"	Probability of a simple event: $\frac{\#\ of\ successes}{\#\ of\ possibilities}$ Basic Counting Principle: If an event can happen in N ways, and another, independent event can happen in M ways, then both events together can happen in $N \times M$ ways.
28-36	Percent change formula: $original\ amount \times percent\ change = amount\ changed$ Rational exponents: $x^{1/2}=\sqrt{x}$ and $x^{2/3}=\sqrt[3]{x^2}$ Logarithms: $\log_b y = x$ when $b^x = y$ Solving absolute equations: $\lvert x+3\rvert=8$, $x+3=8$ or $x+3=-8$, $x=5$ or $x=-11$	Volume of a cube/ rectangular solid: $V = l \cdot w \cdot h$ Special triangles: 45°-45°-90°, 30°-60°-90° Distance between 2 pts: $D=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$ Equation of a circle: $(x-h)^2+(y-k)^2=r^2$, (h,k) is center; r is radius	Law of Sines: $\frac{\sin A}{a}=\frac{\sin B}{b}=\frac{\sin C}{c}$ Law of Cosines: $a^2=b^2+c^2-2bc\cdot\cos A$, $b^2=a^2+c^2-2ac\cdot\cos B$, $c^2=a^2+b-2ab\cdot\cos C$	Weighted average Mean, median, mode given the set {2, 2, 5, 6, 8, 13}: Mean: 6 Median: 5.5 Mode: 2 Find a missing value given the mean

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Key Strategies for English

1. **Remember the 4 C's**

- Good writing should be in complete sentences.
- Everything should be consistent.
- The meaning should be clear .
- The best answer, free of any errors, will be the most concise.

Even when you can't figure out what type of error a question is really testing, apply the 4 C's, and you'll be able to eliminate answer choices.

2. **Know what ACT Grammar Rules to Expect**

You don't need to memorize your grammar textbook to prep for the ACT. But it's a smart move to review the most common grammar rules tested on the ACT English Test. You can expect to encounter grammar questions about the following topics (to name a few):

- subject-verb agreement
- pronoun agreement
- adjectives and adverbs
- comparisons and superlatives
- punctuation
- conjunctions

Nervous about the ACT English Test? Remember the 4 C's!

3. **Let the Answers Help You**

The answer choices are your clues to identifying what the question is really asking. Do any of the words or punctuation change? Pay attention to what changes versus what stays the same in the answers to figure out what the potential error is.

4. **Trust Your Ear (But Double-Check)**

Your ear is pretty reliable at raising the alarm for outright errors and clunky, awkward phrasing. Always verify what your ear is telling you by checking the answers to identify the topic and confirm there is no error. If something sounds off, investigate further, but remember to be careful for errors your ear *won't* catch.

5. **Cross Off Answers That Don't Fix the Error**

To go from good to great on the English test, you can't just fix a question in your head and then find an answer that matches. Instead, after you've identified what's wrong, eliminate all the choices that do not fix the error.

6. **Don't Change What Isn't Broken**

NO CHANGE is a legitimate answer choice. Don't make the mistake of assuming that all questions have an error that you just can't spot

Key Strategies for Reading

What's on the ACT Reading Test?

There are four ACT reading passages of about 800 words each, always in this order:

1. prose fiction
2. social science
3. humanities
4. natural science

After each passage, you'll answer 10 questions that test you on what was directly stated as well as what meanings were implied in the text.

	What it is	What you can expect
Prose Fiction	Excerpts from novels or short stories Most passages are contemporary, emphasize diversity, and often center on family relationships.	• Setting, atmosphere, and the relationships between characters are more important than facts • Questions likely to involve identifying the implied meanings vs. what was directly stated
Social Science	Topics: anthropology, archaeology, biography, business, economics, education, geography, history, political science, psychology, and sociology	• Organization flows logically with clear topic sentences and well-chosen transitions to develop the main idea • Author may have a point of view on the subject or may simply deliver informative facts in a neutral tone
Humanities	Nonfiction passages—usually memoirs or personal essays Topics: architecture, art, dance, ethics, film, language, literary criticism, music, philosophy, radio, television, and theater	• Narrative may use a more organic development instead of a linear one • Tone will be more personal and perhaps more emotional
Natural Science	Topics: anatomy, astronomy, biology, botany, chemistry, ecology, geology, medicine, meteorology, microbiology, natural history, physiology, physics, technology, and zoology	• Lots of details and sometimes very technical descriptions • Linear organization with clear topic sentences and transitions to develop the main idea • Author may or may not have an opinion on the topic • Questions usually track the text pretty closely and require you to make few inferences

How to Tackle the ACT Reading Test

Now that you know what to expect, here are six ACT reading strategies that will help you approach any passage:

1. **Choose Your Own Adventure**

On the ACT Reading Test, you only have 40 minutes to answer 36 questions. To earn your best possible reading score, you have to invest your time where it will do the most good. Always choose your own order, working first the passages that are easiest for you and leaving for last the most difficult.

2. **Get Plenty of ACT Reading Practice**

The best way to determine which categories you tend to ace is through repeated practice tests. Do you consistently do the best on social science? What types of questions do you find easy or difficult?

3. **Read the Questions First**

Reading actively means knowing in advance what you're going to read. So, before you start in on the passage, take a look at the questions. You'll know what important details to look for, and you won't waste time on details that never appear in a question.

4. **Keep Moving**

If you read something you don't understand, do not reread it. Just keep going, and worry about it later only if you have to.

Transition words are like road signs. They show you the route, direct you to a detour, and get you back on the path of the main idea.

6. **Don't Panic if You Don't Know the Word**

In some questions, you'll have to determine the meaning of a word or phrase as it's used in context. Most of these questions use relatively common words, but their meaning in the passage can be figurative more than literal. If the question asks you about an unfamiliar word, try to come up with your own word that fits the context, and then use process of elimination on the answers. If you can't eliminate three choices, guess from what's left and move on.

Key Strategies for Science

Know how to interpret graphs, charts, and tables!

The ACT Science section is not a test of scientific facts. It's a test of how well you look up and synthesize information from tables, graphs, illustrations, and passages. Our ACT Science tips will you help you prepare to score big on test day.

1**. Know What to Expect**

ACT Science prep begins with understanding what's on the ACT Science test.
Format: 40 multiple choice questions about 7 science passages
Topics: biology, chemistry, physics, and the Earth/space sciences such as astronomy, geology, and meteorology

Most of the questions can be answered from the information presented in the passages or figures, but be prepared for 3-4 questions that require outside knowledge. You should be able to:

- Look up data and trends
- Make predictions
- Synthesize information

2. **Understand the ACT Science Passage Types**

All the science passages fall within 3 categories.

Types of ACT Science Passages

The ACT Science section is not a test of scientific facts. It's a test of how well you look up and synthesize information from tables, graphs, illustrations, and passages. Our ACT Science tips will you help you prepare to score big on test day.

Types of ACT Science Passages

Charts and Graphs	5 questions each	• Always come with figures • Contain 1 or more charts, tables, graphs, or illustrations
Experiments	6 questions each	• Usually come with figures • Describe several experiments • Include more text than the Charts and Graphs passages do
Opposing Viewpoints	1 passage, 7 questions	• Sometimes come with figures • Feel more like the passages on ACT Reading Test • Ask you to compare, contrast, and synthesize different viewpoints

3**. Order the Passages**

ACT doesn't present the passages in order of difficulty. But on every exam, some are easier than others, while some are truly tough. Scan the passages and tackle the one that looks easiest, first. You don't want to spend too much time on the most difficult passages only to run out of time on questions you can answer more easily.

4. **Decide if you will do questions Now, Later, or Never**

Your goal with all the ACT science passages is to find the main point. You will spot the main point faster when those conclusions are presented in figures rather than in text. So, the easier the figures are to "read," the faster you'll crack the main point.

The best passages to do Now have the most obvious patterns as well as a few other common characteristics. Look for small graphs, easy-to-spot trends, and short answers (especially answers with numbers and relationship words like "increase" or "decrease").

5. **Be Flexible**

Always be prepared to adapt your order based on what you see, both in practice and on a real test. If you choose a passage that looked good and then find yourself struggling, leave it and find another.

6. **Stumped? Guess and move on.**

When you're stumped, your first instinct may be to go back and read the passage or stare at the figure again, waiting for a flash of inspirational genius to suddenly make everything clear. Instead, use process of elimination to get rid of answers that can't be right. Even if you can cross off only one answer, guess from what's left and move on.