

## ACT OVERVIEW

### 2023

#### Free ACT Prep Websites

[www.actstudent.org](http://www.actstudent.org)

[www.march2success.com](http://www.march2success.com)

[www.number2.com](http://www.number2.com)

#### Description of the ACT

The ACT (no writing) consists of four multiple-choice tests: English, Math, Reading, and Science. The ACT Plus Writing includes the four multiple-choice tests and a writing test.

Test	# of Questions	Time Allowed	Content
English	75	45 minutes	Measures standard written English and rhetorical skills.
Math	60	60 minutes	Measures mathematical skills students have typically acquired in courses taken up to the beginning of grade 12.
Reading	40	35 minutes	Measures reading comprehension.
Science	40	35 minutes	Measures interpretation, analysis, evaluation, reasoning, and problem-solving skills required in the natural sciences.
Optional Writing Test	1 prompt	30 minutes	Measures writing skills emphasized in high school English classes and in entry-level college composition courses.

\*Answer every question. There is no penalty for guessing.

## Scale Score Conversion Table

Scale Score	Raw Score				Scale Score
	English	Math	Reading	Science	
36	75	60	39-40	40	36
35	74	59	38	39	35
34	73	58	37	38	34
33	71-72	57	36	37	33
32	70	55-56	35	36	32
31	69	54	33-34	-	31
30	67-68	52-53	32	35	30
29	65-66	50-51	30-31	34	29
28	64	48-49	29	33	28
27	62-63	45-47	27-28	31-32	27
26	59-61	43-44	26	30	26
25	57-58	40-42	25	29	25
24	55-56	38-39	23-24	27-28	24
23	52-54	36-37	22	25-26	23
22	50-51	34-35	21	24	22
21	47-49	33	20	22-23	21
20	45-46	31-32	18-19	20-21	20
19	42-44	28-30	17	19	19
18	40-41	26-27	16	17-18	18
17	38-39	23-25	15	15-16	17
16	35-37	20-22	14	14	16
15	32-34	17-19	13	13	15
14	29-31	14-16	12	11-12	14
13	27-28	12-13	10-11	10	13
12	25-26	9-11	8-9	9	12
11	24	7-8	7	7-8	11
10	22-23	6	6	6	10
9	20-21	5	5	5	9
8	16-19	4	4	4	8
7	13-15	-	-	3	7
6	11-12	3	3	-	6
5	8-10	2	-	2	5
4	6-7	-	2	-	4
3	4-5	1	1	1	3
2	3	-	-	-	2
1	0-2	0	0	0	1

## **Overcoming Test Anxiety**

Test anxiety can manifest itself in various forms—from the common occurrences of “butterflies” in the stomach, mild sweating, or nervous laughter, to the more extreme occurrences of overwhelming fear, anxiety attacks, and unmanageable worry. It is quite normal for students to experience some mild anxiety before or during testing without being greatly affected. On the other hand, more intense worry, fear, and tension can prevent students from performing successfully on standardized tests. Some experts who study human performance propose that light stress may actually help to focus a person’s concentration on the task at hand. However, stress that reaches beyond minimum levels and remains for a long period of time can block a student’s ability to quickly recall facts, remember strategies, analyze complex problems, and creatively approach difficult items. When taking a test, being calm and collected promotes clear and logical thinking. Therefore, a relaxed state of mind is essential to you as a test-taker. The following strategies provide practical hints and methods to help alleviate debilitating test anxiety.

### **Plan – Have a Study Plan and Stick to It**

Putting off important test review assignments until the last minute naturally causes high stress for anyone who is seriously anxious about test day. Even the brightest student experiences nervousness when he or she walks into a test site without being fully prepared. Therefore, stress reduction methods should begin weeks or even months in advance. Prepared test-takers are more relaxed, confident, and focused, so you should begin to review materials earlier rather than later to reduce anxiety.

Be warned that it is almost impossible to successfully cram for standardized tests. Waiting until the day or week before the test to begin studying will only serve to elevate your anxiety level. While cramming at the last minute may have worked for you in the past with quizzes or less comprehensive tests, it will not work to prepare you for long, comprehensive, standardized tests. Such comprehensive tests require extended and intensive study methods. Trying to cram will leave you feeling frustrated, unprepared, overwhelmed, and nervous about the pending test day.

So, the key to combating test anxiety is to plan ahead so that you are not unprepared. Do not procrastinate—develop a study plan, start early, and stick to it. A study plan is a written set of daily goals that will help you track the content and the sequence of your test review. This plan will help you tell yourself what, when, where, and how much you will study.

#### *Record a Plan on Paper*

A written study plan is more concrete and dependable than one that simply rattles around your head. So, you should use a piece of paper and a pencil to write out a plan for reviewing all of the materials that are necessary to succeed on the test. Record important items and dates on your calendar, and post the study plan in a place where you will see it often (e.g. your bedroom door or refrigerator). When you accomplish one of the goals on your plan (e.g. taking a timed practice exam or reviewing a certain number of items), designate its completion with a checkmark. This system of recording your goals will give you a sense of achievement.

### *Break the Test into Pieces*

Standardized tests are segmented into multiple sections according to subject-area. However, you should not try to learn all of the material related to a particular subject-area in one sitting. The subject matter that is covered is far too broad to learn in a few short minutes, so you should not try to learn every test strategy at once or review the whole test in one day. Instead, you should break the test into smaller portions and then study a portion until you are confident that you can move on to another. You should also vary the sections that you study in order to ward off boredom. For example, on Monday, study a science reasoning section, and on Tuesday, study the reading section.

In addition to breaking the test into smaller portions, you should always remember to review sections that you have already studied. This review will keep all of the sections fresh in your mind for test day. No two students are capable of learning at an identical rate. Some students can learn huge chunks of information at once, while other students need to review smaller amounts of information over a greater period of time. Determine the amount of material that you can comfortably and adequately cover in one day; then, attack that amount of material each day.

For most students, the study plan is determined by the class schedule. The class schedule and sequence have been developed to help you improve your test score. So, follow the guidance of your class instructor and mold your personal study plan around the schedule.

### *Do Some Studying or Preparation Every Day*

Yes. It is very important that you study something every single day. Once you get the “study snowball” rolling, the momentum will help you overcome the temptation to quit. Be consistent. It is far better to study sixty minutes per day for seven straight days than to study seven straight hours only once per week.

### *Study at the Same Time and Place*

Find somewhere quiet to study, where there are few distractions, the lighting is good, and you feel comfortable. Avoid studying in bed or in a lounge chair; simulate the test conditions by studying at a desk or table. Turn off the television and the radio. Shut down the computer, unless of course you are using it as a study tool. Give yourself uninterrupted quality time to study. Find a consistent time when you can study and lock it into your schedule. Do not let yourself off the hook. Study each day at the same time and place so that you can become accustomed to your work environment.

### *Set Goals and Reward Yourself*

Set a weekly goal for the amount of time that you will study and the amount of material that you will review. When you meet these weekly goals, reward yourself. Offer yourself special incentives that will motivate you to reach your goal.

### *Find a Study Partner or Someone to Hold You Accountable for Your Progress*

There really is strength in numbers. Find at least one person who will help you stay on course with your goals. Have a person ask you, every few days, whether or not you are sticking to your plan. Consider finding a “study buddy.” Push each other to set and reach high test preparation goals.

Early and consistent test preparation means that you will walk calmly and confidently into the testing center on test day knowing that you have done your very best to prepare for the test.

### **Prepare Positively—Replace Anxiety with Positivity**

Positive thinking helps overcome test anxiety. For years, psychologists have studied how attitudes affect and alter achievement. These studies suggest that students with positive attitudes consistently score higher than students with negative attitudes.

Here are some practical ways to create a positive mindset:

#### *Talk Positively to Yourself*

Success comes in a “can,” not a “cannot.” So, learn to think positively by mentally replacing “cannot” with “can.” Negative statements such as “I will never pass this test,” “I know I can’t get this,” or “I’m not smart enough to get a good score,” are counterproductive, and they hinder both studying and the test-taking process. In order to eliminate negative thoughts, you must first take note of them when they occur and then take steps to remove them from your mind. As soon as you recognize a negative thought, immediately replace it with a positive thought. It is quite easy. Whenever you hear phrases such as “I can’t do this” or “I’m not smart enough,” think to yourself, “I can do this,” “I will understand this,” or “I am smart enough.” Furthermore, as you walk into the classroom on the day of the test, repeatedly say to yourself, “I have studied, I will do my best, and I will succeed.”

#### *Think Positively About Yourself*

Think positively with the help of visualization. Try this: while in a relaxed mood, close your eyes and envision yourself walking into the test room, perfectly calm and confident. Now, imagine yourself taking each section of the test without any difficulty and with great calmness. See yourself answering the items quickly and correctly. Watch yourself exiting the test area with confidence because you know that you performed extremely well. With these visualization techniques, you can mentally and emotionally practice taking the test in a confident and calm manner. You can practice visualizing yourself at any time and for any given situation. Many students find that it works well close to bedtime. Coaches encourage their peak performing athletes to use daily visualization exercises in order to increase their abilities in running, jumping, shooting, etc. Every single day, from now until the test day, practice visualization and picture yourself taking the test quickly, easily, confidently, and calmly. Visualization can help you exude a positive attitude and overcome test anxiety.

#### *Act Positively Toward Yourself*

On the day of the test, act positively. Even if you do not “feel” completely confident, you should stride into the test site with your head held high and a bounce in your step. Show both yourself and your peers

that you are at ease and in complete control of the situation. Present yourself as someone who knows that he or she will be successful. Acting confidently will actually help you feel confident.

Practice these strategies in order to instill a positive mental attitude. Positive thinking means believing in yourself. Believe that you can achieve your highest goal under any circumstances. Know that you can do it. Dare to try.

### **Put Away Negative Thoughts—They Fuel Test Anxiety**

Since you will be practicing positive thinking, you should also learn to recognize and eliminate distorted, or twisted, thinking. Avoid thinking any of the following distorted things about yourself:

*“I must always be perfect.”* The reality is that everyone makes mistakes. In testing situations, perfectionists mentally fuss and fume about a single mistake instead of celebrating all of the items that they answered correctly. Dwelling on mistakes wastes time and creates more tension. Push mistakes behind you and move forward to the next set of items. Remember that we all reserve the right to learn and grow.

*“I failed the last time, so I’ll fail this time.”* Past failure does not lead to future failure. People do get better the more that they practice. Because you did poorly on something in the past does not guarantee a poor performance either this time or in the future. Use this test as an opportunity for a fresh start. Forget yesterday’s failures and realize that today is a brand new beginning.

*“People won’t like me if I do poorly.”* It is preferable to have good relations with people and to have them approve of you or even to love you—but it is not necessary. You will not be unhappy unless you make yourself unhappy. Rely on self-approval, not the approval of others. Do your best because you want to and you can, not because you want to please someone else.

*“I have been anxious when taking tests before; therefore, I’ll always be anxious.”* This twisted logic implies that you have no control over your behavior; however, that is not the case. You can change and learn to control your anxiety. It might take time and hard work to build calmness and confidence, but it is certainly within your reach.

### **Power up Physically—Release Stress with Physical Exercise**

Physical exercise is an excellent way to both reduce anxiety levels and cope with the effects of stress. Start a regular program of physical fitness that includes stretching and cardiovascular activities. If necessary, check with a doctor or health professional in order to develop a customized fitness program.

### **Practice Being Calm—Learn to Mentally and Physically Relax**

You may not realize that mental and physical relaxation play significant parts in the studying process. By setting aside time for clearing your mind and body of stress and anxiety, you will refresh your mental and physical energy reserves. Spend quality time studying and reviewing for the test. Then, spend time relaxing you mind and body so that you are re-energized for your next study session.

Practice the following relaxation exercises to calm the body and mind:

#### *Physical Relaxation Exercise*

Pick a quiet room where there are few distractions. Shut off all intrusive lights. Sit in a chair or lie down in a bed. If you wear glasses, take them off. Get comfortable, loosening any tight or binding clothing. Close your eyes, and take a deep breath. Blow out all of the air in your lungs, and then breathe in deeply. Now, focus on your tense muscles and consciously relax them. Move upward through each muscle group in your body, up to and including your facial muscles. Continue to breathe slowly, steadily, and fully during this exercise. Repeat this process, while consciously relaxing tense muscles, until you relax your entire body. Then, rest in this state for a few minutes. When you are finished, open your eyes, and remain still for another minute or two before rising.

#### *Breathing Exercise*

Deep and relaxed breathing will calm your nerves and reduce stress. Whenever you start feeling anxious, take time to perform this simple breathing exercise. Place your hands upon your stomach and breathe in slowly and inhale through your nose, feeling your rib cage rise. Pause and hold your breath for a second, thinking to yourself, “I am calm.” Release your breath slowly and fully, blowing it out through your mouth. Repeat this exercise eight to ten times. Perform this exercise whenever you feel nervous or anxious.

#### *Mental Relaxation Exercise*

Meditation, in various forms, has been practiced to allow the mind to release stressful thoughts. Many types of meditation can be learned and then practiced on a regular basis. A popular type of meditation is the passive form. Begin meditation after your body is in a relaxed state. Concentrate on something monotonous until your mind becomes quiet. You may choose to concentrate on a sound, word, or object. Passively observe your thoughts when they come, then gently refocus back upon the sound, word, or object.

### **Prepare—Do Not Leave Important Items until the Last Minute**

You are going to want to remain as relaxed as possible on the day of the test. In order to eliminate the last-minute, frantic rush to find that “one thing” that you cannot locate, make a list of the items that you need for the day of the test. Set out those important items the night before in order to efficiently and effectively speed you on your way toward the testing center.

#### *Determine the Items That You Are Expected to Bring*

Carefully read the test materials so that you know exactly what you should and should not bring to the test center.

#### *Gather the Items That You Need*

On the night before the test, gather all of the necessary items so that you can avoid the anxiety of trying to find them at the last minute.

### *Know the Directions to the Test Center*

If you have not been to the test center before, make sure that you are provided with clear and specific directions as soon as possible. If you are at all confused about how to get to the test center, call the center immediately and clarify the directions.

### *Decide Whether to Study the Night Before the Test*

Should you study the night before the test? Well, as mentioned earlier, you certainly should not attempt to cram for the test. You may want to review a few strategies, but you do not want to attempt to learn large amounts of new material. Instead, take some time to review, and then find some entertaining activity to occupy your time. Go to the gym or see a movie with friends. Laughing is always a great way to reduce stress, so you may want to find something humorous to do or watch.

### *Sleep Well*

A good night of sleep will help reduce stress on the test day. Do not stay out late on the night before the test.

### *Get to the Test Site Early*

Your anxiety level will increase if you arrive at the test center late. So, arrive early. Take a few minutes to relax and compose yourself. You may also need time to locate the restrooms and drinking fountains. However, do not arrive at the test center too early. Students typically get nervous and anxious when they have to wait for a long period of time with nothing to do except think about the upcoming test. So, find the balance between “too early” and “too late” that works best for you.

### *Watch Your Diet*

What you choose to eat can be a physical cause of stress. Therefore, control your eating habits in order to maintain lower stress levels. Eat a healthy meal on the day of the test. Restrict your intake of sugar, salt, and caffeine. Remember that sugar and caffeine are found in cola, coffee, cocoa, and tea. These substances trigger a stress response in your body. High levels of sugar and caffeine are associated with nervousness, dizziness, irritability, headaches, and insomnia. Additionally, smoking has been found to decrease a person’s ability to handle stress. Cigarettes act as a stimulant because of their nicotine content and will serve to increase stress levels.

### *Dress Comfortably*

The good news is that you are going to a test, not a fashion show. So, wear comfortable clothes to the testing center, and choose clothes that are not binding or tight. Dressing in layers is always a good idea since testing rooms are notoriously either too hot or too cold.



### **Pause—Release Physical and Mental Anxiety Before the Test**

As already stated, relaxation allows you to focus your full attention and energy on the task at hand, rather than distracted by tension and stress. You must release as much tension and anxiety as possible right before taking the test.

#### *Release and Relax*

Having arrived early at the test site, take a few last minutes to relax. Do not attempt to study or review at this point. Instead, use a simple relaxation technique. Close your eyes, and breathe in deeply through your nose. Hold that breath for a few seconds. Next, release that breath through your mouth. Repeat this “in-and-out” breathing cycle. Try to gradually slow the pace of the “in-and-out” motion of your breathing. Visualize yourself at a place that you find peaceful and relaxing, such as the beach, the woods, or some other favorite spot. Continue this technique for a few minutes until you feel yourself becoming relaxed and calm.

#### *Do Some Low-Level Physical Exercise*

Take a brisk walk. For many people, walking helps lower high stress levels, while positively easing the mind from worrying about the upcoming test. Others find that stretching exercises help loosen tense muscles. Just be sure to be at the testing center in time.

#### *Massage Tension Away*

While waiting for the test, sit comfortably in your chair. Notice places in your body that feel tense—generally the shoulders, neck, or back. Gently massage tense areas for a few minutes.

### **Press On—Concentrate on the Current Item, Not the Last or Next One**

Dwelling on answers to previous items will only elevate test anxiety, so do not worry about those sections or items that you have finished.

#### *Focus on One Item at a Time*

Your task on any test is to correctly answer each item, one item at a time. Good test-takers focus only on the item with which they are currently working. Poor test-takers worry about items that they just completed or about items in the upcoming section. Try to stay “in the moment” by concentrating on one item at a time.

### **Proudly Depart—Walk Out with Your Head Held High**

#### *Know That You Have Done Your Best*

If you have followed the strategies listed in this section, attended test preparation classes, and spent time reviewing and studying on your own, you have most likely done your very best to prepare for the test. As you walk out of the test site, remind yourself that you have indeed put forth your best effort.

### *Watch the Labels*

After the test, never label yourself as a “failure,” “loser,” or “underachiever.” Instead, if you do not feel that you did as well as you expected, use the experience to learn about the test and about yourself. Students are able to retake standardized tests, so reflect upon what you can do better next time, not upon how poorly you think you did this time.

### **Perspective—Keep Life in Perspective**

Yes, the test you will take is important, but other things in life are important too. Remember that this test is a means to an end—getting into college—and not the end itself.

Note: Some test-takers, even after applying all of the above strategies, still experience debilitating stress. Intense anxiety or stress that causes nausea, headaches, overwhelming emotional fears, or other severe symptoms may need special attention and care that goes beyond the strategies in these pages. If you suffer from these debilitating stress symptoms, ask your counseling office about what resources are available to help overcome severe test anxiety.

## English Test Basics

It would not be too far wrong to say that the English Test is a test of your understanding of the rules of grammar, and that the announcement should be enough to strike dread into the hearts of most students: “You mean like ‘*i*’ before *e* except after *c*’?” No, that’s a rule of spelling, not grammar, and the English Test does not test spelling. Actually, the English Test doesn’t really test your knowledge of the formal rules of grammar either, though it does test your ability to correct sentences using those rules.

The items used by the English Test fall into one of two categories: Usage and Mechanics or Rhetorical Skills. The Usage and Mechanics category (UM) includes all of the items that you would normally associate with a writing test, such as choosing proper verb tense and pronoun usage, while the Rhetorical Skills category (RH) includes items that ask about the development of a selection, such as crafting topic sentences and selecting effective transitions.

## Pacing

The English Test consists of 5 passages, each approximately 300 words in length and with 15 corresponding items, for a total of 75 items. The time limit is 45 minutes. So, a fairly simple and easy-to-follow plan is to allocate 9 minutes to each of the 5 passages. This gives you approximately 1.5 minutes to read each of the passages and 30 seconds to answer each of the items.

However, this schedule describes what would happen in a perfect world; but, of course, the ACT test does not take place in a perfect world. Some items are going to take longer than others, particularly those that ask about the overall development of the passage. This means that you’ll need to spend less time on the simple grammar items, building up a time reserve for those more difficult items that are coming. The more difficult are usually placed at the end of a passage because that’s where it makes sense to ask, “What is the main idea?” and “How could the passage be improved?” This schedule would give you a feedback loop that lets you know whether you need to skip some items. If you get behind, skip any Rhetorical Skills items and go straight away to the next passage. The Rhetorical Skills items take longer, and there will be some simple grammar items waiting to be cherry-picked in the next passage.

## English Test Tips

### Don’t Read the Directions:

By the time you get to the test, you’ll know what to do when you see the English Test just by the way it looks. Do a quick preview and let the appearance of the items on the page be all the direction you need, and then get started immediately.

### Do the Passages in Order:

Unlike the Reading Test with passages that fall into categories such as Humanities and Natural Science, the passages on the English Test are not really about any particular subject-area. Of course, the passages do have a topic and some items do ask Reading-type questions, but the English items basically test

usage, not reading comprehension. In Reading, there is an advantage to predetermining an order for the passages; in English, however, you should just do them in the order presented.

### **Start Each Set of Items by Reading the Passage:**

You really need to read the passage before you can start answering questions because some items will not make sense without the proper context. Since the passages are about 300 words in length, you can finish a read-through in a little more than a minute. Read primarily for overall development so that you'll understand the logic in the author's presentation, and don't worry overly much about details. Later, you can study the specific parts of the passage in which the various items appear.

### **Read Any Items with Underlined Parts, Looking for Errors:**

When an item asks about rewriting an underlined part, begin by reading the sentence, looking for an error. If you can spot an error, then you're more than halfway home. Later in the English Review, you'll cover the important principles of writing and grammar that are tested.

### **Work Backwards from the Answer Choices:**

If you are having difficulty locating the right answer, use the answer choices to help you. Compare each answer choice with the original, and explain to yourself what the important difference is between the two of them. This can help you see an error that you may have overlooked. Additionally, you can compare choices to each other, asking yourself, in what way is this choice better or worse than the other one? Again, this technique can help you uncover a hidden error and make the right choice.

### **Don't Look for Spelling or Capitalization Errors:**

These topics are not tested, so don't waste your time looking for errors of this sort. Even if you think you've found a spelling mistake (and you're almost certain to be wrong anyway), there is nothing you can do with the information. The correct response is correct because it "follows the requirements of standard written English."

### **Make Educated Guesses:**

You should be able to eliminate some answer choices on most items because they introduce new errors that are not found in the original. Or, a choice may fail to correct an error that you know to be in the underlined part of the sentence. You should always guess, even if you are unable to eliminate an answer choice, because there is no penalty for guessing on the ACT. However, your chances improve if you are able to eliminate even one answer choice.

### **Don't Be Afraid to Pick "No Change":**

Choose (A), "No Change," if you think that the original is correct as written. Many students automatically refuse to pick "No Change" because they figure that there must be something wrong with the original—even if they are unable to say what. But this reasoning is faulty. "No Change," when it is an option, is statistically as likely to be correct as is one of the other three choices.

## English Test Strategy Summary Sheet

### General Strategies:

1. After you have memorized the directions, they can be safely ignored; therefore, do not waste valuable test time re-reading instructions.
2. Read the entire selection for comprehension of the overall meaning. Look for possible errors. Mentally note how to correct possible errors.
3. Study the answer choices, looking for one that matches your anticipated answer.
4. Compare the answer choices. What makes them different from one another?
5. Do not use answer choices that introduce new errors or change the meaning of the selection.
6. Use additional strategies presented below when searching for errors.

### Strategies for Usage and Mechanics Content Area:

1. Check for grammatical errors.
  - a. Look for obvious subject-verb agreement problems. The test-writers may try to obscure agreement by inserting material between the subject and verb, inverting the sentence structure so that the verb precedes the subject, or introducing compound subjects.
  - b. Check for proper pronoun usage. Remember that all pronouns must have antecedents. The pronouns clearly refer to the antecedent and must agree in case, number, and person.
  - c. Be alert to the proper usage of adjectives and adverbs. Note that adjectives modify nouns, while adverbs modify verbs. Also, adjectives, not adverbs, follow linking verbs. Lastly, watch out for adjectives posing as adverbs. Sometimes, adjectives can be transformed into adverbs by adding “ly,” so it is important to determine whether the modifier is an adjective or adverb.
  - d. Watch for double negatives. Even though double negatives are sometimes used colloquially, they aren’t grammatically correct.
  - e. Check for proper noun clause introductions. A noun clause is a group of words that functions as the subject of a sentence and must be introduced with “that.” Note that “because” and “why” should not be used to introduce noun clauses.
  - f. Watch for illogical comparisons. Comparisons can only be made between similar objects. Be alert to testing the comparative form of an adjective (for comparing two objects) and the superlative form of an adjective (comparing three or more objects). Remember that some adjectives and adverbs express the highest grammatical quality; therefore, they cannot be improved upon.
  - g. Check for improper verb and mood shifts. The same verb tense and mood should be used within a single paragraph unless there is a valid reason for a change. Also, be alert to the improper usage of verbs in general. Make sure that the verb tense within a sentence or a paragraph is logical.
  - h. Make sure that the choice of verb tense in a sentence reflects the sequence and the duration of the events described.

- i. Check for diction errors such as wrong prepositions, improper word choice, and gerund-infinitive switching.
- 2. Check for sentence structure errors.
  - a. Check to see if the sentence is a run-on.
  - b. Be aware of comma splice errors in sentences.
  - c. Check to see if the sentence is a fragment.
  - d. Make sure the sentence contains logical coordinating conjunctions.
  - e. Watch for faulty parallelism in a sentence. Note that whenever elements of a sentence perform similar or equal functions, they should have the same form.
  - f. Be alert for sentence structures in which a thought that is interrupted by intervening material is completed later in the sentence. Check that the interrupted thought is correctly completed. A simple way to check for this type of error is to read the sentence without the intervening material—the sentence should make sense, be grammatically correct, and represent a complete thought.
  - g. Look for misplaced modifiers. Modifiers should be placed as close as possible to what they modify. Errors in placement of modifiers create ambiguous and illogical constructions.
  - h. Be alert to misplacements or omissions of certain elements of a sentence. These errors lead to unintended meanings. Make sure the intended meaning of the sentence follows from its logical structure.
- 3. Check for punctuation errors
  - a. Check to see if the comma is used correctly in the sentence. The following list summarizes the most important misuses of commas:
    - i. Use a comma before a coordinating conjunction joining two clauses.
    - ii. Use commas for clarity.
    - iii. Use commas to separate words in a series.
    - iv. Use commas to mark the end of an introductory phrase.
    - v. Use pairs of commas to set off appositive, parenthetical, and non-restrictive elements.
    - vi. A comma should not be used to separate a subject from its verb.
    - vii. Commas should not be used to set off restrictive or necessary clauses or phrases.
    - viii. A comma should not be used in place of a conjunction.
  - b. Check for correct semicolon usage. The following list summarizes the appropriate uses of semicolons:
    - i. Use a semicolon to separate two complete ideas.
    - ii. Use a semicolon to separate a series of phrases with commas and a series of numbers.
    - iii. Use a semicolon to separate independent clauses.
    - iv. Do not use semicolons to separate dependent clauses.
  - c. Check for correct end-stop punctuation. Make sure that any material that has a period is a complete sentence.

- d. Check for correct usage of dashes. The following are the rules for situations requiring the use of a dash:
  - i. Use a dash for emphasis or to set off an explanatory group of words.
  - ii. Use a dash before a word or group of words that indicates a summation or reversal of what preceded it.
  - iii. Use a dash to mark a sudden break in thought that leaves a sentence unfinished.
- e. Check for correct apostrophe usage. Apostrophes are most commonly used to show possession. They are always used when a noun is used to modify another noun or gerund.
- f. Check to see if a punctuation mark is needed to clarify the selection.

Strategies for Rhetorical Skills Content Area:

- 1. Check to see if the strategy used by the writer is appropriate.
  - a. Make sure that all supporting material is appropriate to the selection.
  - b. Be alert to opening, transitional, and concluding sentences. Check to see if they are effective or if they need improvement.
  - c. Read the selection for the main ideas and identify the main purpose of the entire passage.
  - d. Look for diction, purpose, and tone clues that identify the writer's audience.
- 2. Check for organization errors.
  - a. Check the sentence-level structure. Sentences should be in logical and appropriate order within the paragraphs.
  - b. Check the paragraph-level structure. Paragraphs should be divided logically and unified around central themes.
  - c. Check the passage-level structure. Passages should follow an identifiable pattern of development with paragraphs appearing in logical order.
- 3. Check for stylistic problems.
  - a. Make sure that the sentences are concise and to the point.
    - i. Look for awkward sentences or weak passive verbs.
    - ii. Look for needlessly wordy sentences.
  - b. Check for ambiguous sentences. Such sentences run two or more ideas together and require clarification to separate and connect the disparate ideas.
  - c. Check for idiomatic usage.

## Math Test Basics

The ACT Math Test, according to the test-writers, presupposes a knowledge of pre-algebra and algebra, intermediate algebra and coordinate geometry, and geometry and trigonometry. The ACT Math Test items are pretty much the same kind of questions you'd see on a regular test—except that they are multiple-choice questions.

In reality, however, you do not have to know all of those topics to do pretty well on the test. Intermediate algebra, coordinate geometry, and trigonometry combined account for less than 40 percent of the test. Here is the breakdown of items by topic on the ACT Math Test.

<b>ACT Math Test</b> (60 items, 60 minutes)		
<i>Content</i>	<i>Approximate Number</i>	<i>Approximate Percent</i>
Pre-Algebra	14	23%
Elementary Algebra	10	17%
Intermediate Algebra	9	15%
Coordinate Geometry	9	15%
Plane Geometry	14	23%
Trigonometry	4	7%

This means that you could blow off all of the trigonometry items and the hardest half of the coordinate geometry and intermediate algebra items, miss another 9 questions, and still get a 24 on the ACT Math test. That's a pretty good score. For a very respectable score of 21 or so (above the average of everyone in the country who's serious about college), you need a raw score of about 33, which you can get if you blow off all the trigonometry, intermediate algebra, and coordinate geometry and keep your wrong answers down to five.

This is not a recommended strategy. You want to make sure that you answer any questions you know how to do. However, these little "thought experiments" show that you can do quite well on the math even if you're not exactly a math whiz.

## Pacing

The Math Test consists of 60 items. The time limit is 60 minutes. The items are arranged on a ladder of difficulty, so you'll need a pacing plan that helps you move more quickly through the easier items at the beginning of the test and allows you to build up a time reserve for the harder items that are toward the end.



## Math Test Strategy Summary Sheet

General Strategies: When approaching a Math item, there are several things to which you should pay careful attention:

1. **Figures:** Figures are usually, but not always, drawn to scale. When all other options for answering the item fail, use the strategy of assuming the figure is drawn to scale. Then, use the figure to help you answer the item.
2. **Answer Choices:** Most answer choices are arranged in order of ascending or descending value and many incorrect answer choices correspond to conceptual errors.
3. **“Signal” Words:** Typically, “signal” words are capitalized (e.g. thought-reversers, such as “not,” “cannot,” and “except”); however, they may sometimes be underlined or italicized (e.g. specified units). While specific formatting of these words may vary, they can be critical to correctly understanding the item. Pay close attention to thought-reversers, as they reverse the apparent meaning of an item.
4. **Ladder of Difficulty:** Difficult Math items tend to be clustered near the end of the section. When completing items that are high on the ladder of difficulty, be wary of simplistic answers and the “Cannot be determined” response. Remember to pace yourself—difficult, time-consuming items have the same value as the easy items.
5. **Preview Item Stems:** Read the item stem first. Only then should you read the details of the item, keeping the stem in mind.
6. **Confirm Solutions:** Double-check the solution by confirming that it answers the particular question that is asked. When applicable, this confirmation includes verifying that the solution is given in the units specific to the item stem.

If you are unable to either find an elegant (quick) solution or solve the item directly based on subject knowledge following alternative solutions strategies can be extremely helpful:

1. **“Test-the-Test” Strategy:** The correct answer to any item is always one of five given choices. Sometimes the easiest and quickest way to solve an item is to test each of the answer choices. The “test-the-test” strategy may mean plugging answer choices back into the item (starting with the middle answer choice) to test the validity of the expression, or it can mean checking each answer choice against any stated conditions. The “test-the-test” strategy is typically useful for items with numerical solutions or variables and values that meet stated conditions.
2. **“Plug-and-Chug” Strategy:** This strategy is similar to the “test-the-test” strategy in that the item stem choices (rather than direct mathematical solution strategies) are used to isolate the correct answer. The difference is that rather than testing the validity of each answer choice against the item stem conditions, the item stem answer choices are evaluated by plugging in chosen numbers: “plug-and-chug.” This strategy is especially useful when solving Algebra items.
3. **“Eliminate-and-Guess” Strategy:** If unable to determine the correct answer directly by using numerical methods or indirectly by using the “test-the-test” or “plug-and-chug” strategy, eliminate as many choices as possible and then guess from the remaining answer choices. For

difficult mathematics items, eliminate answer choices that can be reached either by a single step or by copying a number from the item.

#### Checklist of Skills and Concepts:

##### Arithmetic

Simplifying: Fractions, Collecting Terms

Factoring

Approximation

The “Flying-X” Method

Decimal/Fraction Equivalents

Properties of Numbers (Odd, Even, Negative, Positive, Consecutive)

Sets (Union, Intersection, Elements)

Absolute Value

Percents (Change, Original Amount, Price Increase)

Ratios (Two-Part, Three-Part, Weighted)

Proportions (Direct, Indirect)

##### Algebra

Evaluation of Expressions (Rational, Radical)

Exponents (Integer, Rational, Negative)

Factoring

Sequence

Solving Single Variable Equations and Inequalities

Absolute Value

Function (Picture) Math

Domain and Range

Solving Equations (Multi-variable, Linear, Quadratic, Simultaneous)

Story Problems: Work (Joint Effort), Averages

##### Coordinate Geometry

Coordinate Plane

Slope of a Line

Slope-Intercept Form of a Linear Equation

Distance Formula

Graphing Linear Equations

Graphing First-Degree Inequalities

Graphing Quadratic Equations

Permutations of Equations and Graphs

##### Geometry

Lines and Angles (Perpendicular, Parallel, Intersecting, Big Angle/Little Angle Theorem)

Triangles (Equilateral, Isosceles, Acute, Obtuse, Perimeter, Area, Altitudes, Angles, Bisectors, Pythagorean Theorem)

Quadrilaterals (Squares, Rectangles, Rhombuses, Parallelograms, Trapezoids, Perimeter, Area)

Polygons (Sum of Interior Angles)

Circles (Chords, Tangents, Radius, Diameter, Circumference, Area)

Solids (Cubes, Cylinders, Spheres, Volumes, Surface Areas)  
Complex Figures

Trigonometry

Trigonometric Functions  
Trigonometric Values  
Trigonometric Relationships

Statistics and Probability

Averages (Simple, Weighted), Median, and Mode  
Probability  
Graphs (Bar, Cumulative, Line)  
Pie Charts  
Tables (Matrices)  
Scatterplots

## **Reading Test Basics**

The Reading Test consists of four approximately 700-word reading selections, each followed by 10 items. You read a passage and answer the items based upon what is stated or implied in the reading selection.

You'll have one passage from each of the following four categories: Prose Fiction, Social Science, Humanities, and Natural Science. In most cases, the passage will be about a topic with which you are not familiar. The test-writers choose unusual topics so that the Reading Test will be one of reading skill and not of knowledge. Of course, you may find a topic that you know something about, but even so, your knowledge is probably not going to help you very much, though familiarity with a topic is a definite advantage.

The time limit for the 40 items on the Reading Test is 35 minutes. Given the time limit, you obviously need to work quickly. The exam, however, is not a test of "speed-reading." Instead, the exam is a test of reading comprehension.

## **Pacing**

The Reading Test has 40 items and a 35-minute time limit. The fact that there are 4 passages of approximately equal length, each with the same number of items, and a 35-minute time limit leads naturally to the conclusion that you should spend 8 minutes and 45 seconds on each passage—and that's a pretty good plan. This gives you about 2.5 minutes to read each passage and 37 seconds to answer each of the items.

## **Reading Test Tips**

### **Quickly Preview the Test, but Skip the Directions:**

Last-minute adjustments to the test format are theoretically (but not practically) possible, so check the subject test before you start to work, especially the number of passages, the number of items, and the time limit. And yes, the test-writers always tell you to "read the directions carefully." But they don't tell you that you have to read them during the test. Instead, become familiar with them before the test day. That way, you won't waste 30 seconds or more (enough time to answer an item) re-reading directions you are already familiar with.

### **Personalize the Passage Order**

Remember that you don't have to do the items in the order in which they are presented in the booklet. For some sections, like the math section, doing problems in order (more or less) makes good sense. But in Reading, it is a sound strategy to make a choice about the order in which you're going to work through the section. You may decide to do the passages in the order presented, or you may want to change the order.

What factors should you consider? First, you may find a topic that seems familiar to you. Of course, you can't expect that you'll already know the answers to the items, but familiarity is a definite advantage. Second, you'll feel more comfortable with some topics than with others. Do you like biology but hate literature or like social science but hate art? Then do the passages with topics that you like first.

This sets up the following personalized order for completion of the passages:

1. Choose familiar topics to do first
2. Otherwise, choose your favorite topics to do first
3. Choose your second favorite topic to do second, and so on.

When you choose your passages, you should number them in the margin of your test booklet. Put a big "1" by the passage you'll do first, and so on.

### **Read Any Introductory Notes:**

Most passages on the Reading Test will include an introductory note telling you where the passage comes from and maybe some other information. Sometimes, this information is useful for getting a better understanding of the passage. Therefore, before starting on a passage and items, always read any introductory notes.

### **Preview the passage:**

Before you begin reading a particular passage, take 15 to 30 seconds to preview key sentences. Key sentences are first and last sentences of the passage and the first sentence of each paragraph. Why preview? First sentences are often topic sentences, so reading a series of topic sentences will tell you what the author is trying to say, and it can give you an outline of the development of the passage. Sometimes, though not always, the last sentence is a conclusion.

### **Preview the Item Stems:**

Additionally, before reading a particular passage, you may find it helpful to preview the item stems, which are presented either as questions or incomplete statements. If a stem mentions a key word or phrase, make a mental note and look for it as you read the selection.

### **Read the Passage:**

Keep the following in mind when reading a passage:

- Read the passage quickly but carefully. You'll probably need about two to three minutes to read a passage. This is about 300 to 350 words a minute.
- Read the passage for important themes. Many of the items will ask about important themes of the passage, such as the main point, the purpose of a particular paragraph, or the author's intention.
- Do not try to memorize details. If you need a detail, you can always go back to the passage to find it. This is an "open-book" test.

- Pause at the end to summarize your reading. One of the most helpful reading techniques is to summarize in your own words what you have just read. What is the main point? What did the author do in the first paragraph? In the second paragraph? What did the author prove?

### **Answer the Items:**

Keep the following points in mind when answering the accompanying items:

- Identify the question being asked. Reading items fall into one of seven categories such as “Main Point,” “Explicit Detail,” and “Vocabulary.” Specific item-types have characteristic kinds of answers. If you determine the category first, it will be easier to find the right answer.
- Answer the question being asked. One of the most common mistakes made by examinees is to read an item stem carelessly and then answer the “wrong” question. That is, they respond to what they think they read rather than what is actually on the page. Since wrong answers often sound plausible, if you make this mistake you’re probably going to find a pretty good answer—to the wrong question.
- Read the answer choices carefully. You’ll learn how to recognize the seven Reading item-types and what a correct answer to each should look like. Do this experiment: estimate how many words are in the passage and then how many are in the answer choices. The answer choices are just about as long as the passage, which means the reading comprehension doesn’t stop at the end of the last sentence of the passage. It continues its way through to the last word of the last answer choice to the last item.
- Pay attention to thought-reversers. “Thought-reversers” are words in the item stem like “NOT,” “BUT,” and “EXCEPT.” These words turn the question upside down. What is normally the right answer is not the answer, and what is normally a wrong answer is the right answer. Circle the words or put stars beside them so that they get your attention again.
- Do not spend too much time on any one item. Remember you get +1 for the hardest question and the easiest. With Reading items, the easiest ones can theoretically be the last in the group and the hardest can be the first. So, if you sense that you’re spinning your wheels, make a guess and then move on. You should always guess, even if you are unable to eliminate any answer choices, because there is no penalty for guessing on the ACT. However, your chances improve if you are able to eliminate even one answer choice.

## Reading Test Strategy Summary Sheet

Reading Strategies: Understanding the three levels of reading comprehension and how they relate to the seven Reading item-types will help you to identify quickly the question that is being asked by a particular item.

1. *Level 1 – General Theme:* The first level of reading, appreciation of the general theme, is the most basic. Main Idea items test whether you understand the passage at the most general level. The first sentence of a paragraph—often the topic sentence—may provide a summary of the content of that paragraph. Also, the last sentence of a paragraph usually provides concluding material that may also be helpful in understanding the general theme of the passage.

**Main Idea** items ask about the central theme that unifies the passage(s):

- Which of the following is the main point of the passage?
  - The primary purpose of the passage is to...
2. *Level 2 – Specific Points:* The second level of reading, understanding of specific points, takes you deeper into the selection. Explicit Detail, Vocabulary, and Development items all test your ability to read carefully. Since this is an “open-book” test, you can always return to the selection. Therefore, if something is highly technical or difficult to understand, do not dwell on it for too long—come back later if necessary.

**Explicit Detail** items ask about details that are specifically mentioned in the passage. This type of item differs from a Main Idea item in that explicit details are points provided by the author in developing the main idea of the passage. Explicit Detail items provide “locator words” that identify the required information in the passage.

- The author mentions which of the following?
- According to the passage...

**Vocabulary** items test the understanding of a word or phrase in context. The nature of the Vocabulary items indicates two points. First, the correct answer choice will make sense when it is substituted for the referenced word. Second, the correct answer choice may not be the most commonly used meaning of the word; in fact, if it were, then what would be the point of including the item on the test? Thus, the general strategy for this type of item is to favor the less commonly used meaning.

- The word ----- in line ## means...
- In line ##, what is the best definition of the word -----?

**Development** items ask about the overall structure of the passage or about the logical role played by a specific part of the passage.

- The author develops the passage primarily by...
  - The author mentions ...in order to...
3. *Level 3 – Evaluation:* The third level of reading, evaluation of the text, takes you even deeper into the selection. Implied Idea, Application, and Voice items ask not just for understanding, but require judgment or an evaluation of what you have read. This is why these items are usually the most difficult.

**Implied Idea** items don't ask about what is specifically stated in the passage: rather, Implied Idea items ask about what can be logically inferred from what is stated in the passage. For example, the passage might explain that a certain organism (X) is found only in the presence of another organism (Y). An accompanying Implied Idea item might ask the following question: "If organism Y is not present, what can be inferred?" Since the passage states that in the absence of Y, X cannot be present, the answer would be "X is not present." Since this type generally builds on a specific detail, "locator words" for identifying information in the passage are often in the item stem.

- The passage implies that...
- The author uses the phrase "... " to mean...

**Application** items are similar to Implied Idea items, but they go one step further: Examinees must apply what they have learned from the passage to a new situation.

- With which of the following statements would the author most likely agree?
- The passage is most probably taken from which of the following sources?

**Voice** items ask about the author's attitude toward a specific detail or the overall tone of the passage.

- The tone of the passage can best be described as...
- The author regards...as...

**General Strategies:** Reading strategies are not an exact science. Practice is essential to mastering the following techniques:

1. Read the first sentence of each passage in the Reading Test. After reading the first sentence of each passage, mark each passage as either "Easy" or "Hard" based on your initial understanding of the material and your interest. Analyze the easier passages first.
2. Preview the first and last sentences of each paragraph. There is usually an introductory paragraph to passages that identifies the author and provides a brief description of the selection. First, read this material to gain clues as to the author's point of view. Then, preview the first and last sentence of each paragraph, as they often provide paragraph summaries.



3. Preview the item stems for a given passage. Code each item stem as one of the following three levels of comprehension: GT (Level 1 – General Theme; SP (Level 2 – Specific Points); or E (Level 3 – Evaluation).
4. Read the passage. Ask what the author is attempting to describe, especially in the case of Evaluation. You may want to read the first sentence in each paragraph prior to reading the entire selection. This step is optional, based upon the ease of the selection, your personal preference, and the time available. Bracket difficult sections mentally or with some sort of mark, and then simply revisit if necessary or if time permits. When re-reading, attempt to understand the context in which the author introduces a particular conclusion.
5. Circle the answers to the items in the test booklet, and transcribe the answers to all the items for each passage to the answer sheet after finishing each passage. This approach helps increase accuracy and makes checking easier and more efficient. For each selection, transcribe the answers to the answer sheet together, but when the time limit approaches you should transcribe each answer individually.

## **Science Test Basics**

The Science Test consists of 40 multiple-choice items divided into 7 groups. Each group of items is based on a report of data findings, a description of an experiment, or the presentation of a debate on different scientific theories. The time limit for the Science Test is 35 minutes.

We'll call the initial presentation a "passage," whether it is a report of data (Data Representation), a description of an experiment (Research Summary), or a debate of a theory (Conflicting Viewpoints). So, just as the English and Reading Tests have passages with associated items, the Science Test has passages (of the three types) with associated items. We'll use this terminology even though "passage" doesn't quite fit here since the Science Test uses a lot of diagrams, pictures, tables, and graphs.

The Science Test roughly follows the content of science courses taught in grades 7 through 12. Passages use content from the following areas:

- Biology: botany, cellular biology, ecology, evolution, genetics, microbiology, zoology
- Chemistry: biochemistry, organic chemistry, nuclear chemistry, thermo-chemistry, acids and bases, kinetics and equilibria, properties of matter
- Earth/Space Sciences: astronomy, environmental science, geology, meteorology, oceanography
- Physics: mechanics, thermodynamics, fluids, solids, electromagnetism, optics

Although these are obviously "science" subjects, you don't really need to know any science—beyond some basic concepts—to do well on this part of the exam. In fact, the ACT Science Test would be more accurately labeled "Science Reasoning" Test because that phrase would emphasize that the items test reasoning ability and not the mastery of some specific body of scientific knowledge.

## **Pacing**

The Science Test presents 7 passages, with a total of 40 items, to be completed in 35 minutes. You should begin work on each passage by reading the passage itself and familiarizing yourself with the main purpose of the data reports or experiments or the focus of debate. This should be an overview of the information, not a detailed study. You are reading primarily to learn where information is located so that you can retrieve it—if an item asks about it.

If you allow yourself 1 minute to learn about the passage, then you have 4 minutes left to answer the 5 or 6 items, which is somewhere between 40 and 50 seconds per item. So, on the Science Test (perhaps more so than on any other test) time is of the essence.

## **Science Test Tips**

### **Quickly Preview the Test, but Skip the Directions:**

Last-minute adjustments to the test format are theoretically (but not practically) possible, so check the subject test before you start to work, especially the number of passages, the number of items, and the time limit. And yes, the test-writers always tell you to "read the directions carefully." But they don't tell

you that you have to read them during the test. Instead, become familiar with them before the test day. That way, you won't waste 30 seconds or more (enough time to answer an item) re-reading directions you are already familiar with.

### **Personalize the Passage Order:**

You are not required to do the passages in the order in which they appear in the test booklet. You can do the first passage second, or fourth, or last; and you can do the last passage first or third. So, you have the flexibility of choosing which ones you will do before the others, and you'll want to do first those passages that seem easier. "Easier," in context, is really a subjective matter; it means the ones with which you are most comfortable, either because of the type of presentation or the subject matter.

- First, do the passage formats that you find easiest to handle.
- Then, of the remaining passages, do the familiar ones.
- Finally, do the rest of the passages, from the simplest to the most complicated.

Put large numbers in the margins of the test booklet beside each passage to indicate where the passage comes in your order.

### **Read the Passage:**

For the Science Test, "reading the passage" means "reading through" the passage. You can't afford to study the passage and don't forget that this is an "open-book" test. So, learn generally what is going on and where things are located. Then, let the items tell you where to look more carefully.

- Read any introductory paragraph(s). Not only does this material usually explain why an experiment is conducted or data are being collected, but it often defines a key term that is essential to understanding connections of the various parts of the passage.
- Examine any diagrams or schematics. The focus of the passage is often a device that includes beakers, tubing, switches, pulleys, test tubes, and other paraphernalia associated with science. Try to understand what the device is designed to accomplish and how the various parts work together.
- Look at the various subparts of the passage. The subparts are things such as experiments that change initial conditions, tables of data, and graphs. Do not try to fully understand these. Just get a general notion of what they do. For example, for a graph, read the title and the labels of the x- and y-axis. For tables, read the column heads and the titles of the rows. Do not, however, read specific values on a graph or in a table. There are too many of them, and only one or two are likely to be relevant to answering one of the few items based on that passage (compared to all the different questions that the test-writers could have chosen).

### **Answer the Items:**

Answer the question being asked. One of the most common mistakes made by examinees is to read an item stem carelessly and then answer the "wrong" question. That is, they respond to what they think

they read rather than what is actually on the page. Since wrong answers often sound plausible, if you make this mistake you're probably going to find a pretty good answer—to the wrong question.

Pay attention to thought-reversers. “Thought-reversers” are words in the item stem like “NOT,” “BUT,” and “EXCEPT.” These words turn the question upside down. What is normally the right answer is not the answer, and what is normally a wrong answer is the right answer. Circle the words or put stars beside them so that they get your attention again.

Locate the relevant information. The first and often last step in answering an item is to locate the information you need. Most item stems use a key word or phrase to tell you where to look. For example, “in Table 2” tells you that the information you need is located in Table 2; “the troposphere...” tells you that you need the graph, table, or description that supplies information about the troposphere; and “lowering the temperature” indicates that the answer is in the subpart of the passage that provides information about temperature.

### **Use the Answer Choices:**

Study the answer choices for guidance. The answer choices, like an item stem, can direct you to the subpart of the passage that contains the information you need. The choices will also give you guidance as to what degree of precision is required by the item. Often, the choices are ranges of values, such as 0.015w to 0.018w, rather than specific values, such as simply 0.015w. Do not look for more precision than the choices allow.

Read the answer choices carefully. The test-writers love to put in wrong answers that look right. For example, a particular value doubles with a decrease in temperature from 40 degrees to 20 degrees, a question might ask: “Assuming the temperature rises from 20 degrees to 40 degrees, what happens to the value?” The correct answer is, of course: “The value is reduced by half.” But you can bet that the wrong answers include ideas like “doubles,” “increases by one-fourth,” and “decreases by four” —or some other variation of the ideas.

### **Eliminate Choices, Guess (If Necessary), and Move On:**

Do NOT spend too much time on any one item. Remember you get +1 for the hardest question and the easiest. The items that correspond to a Science passage tend to be arranged from the easiest to the most difficult. (This is not an absolute rule; it is just a useful tool.) The first item may ask you to find a single number in a table. The second item may ask for a value that is the largest or smallest in a series. The third item may require you to interpolate a value, and the going might get considerably more difficult. So, try the next item, and if it is completely whack, blow off that question and go to the next passage where the difficulty resets to the lowest setting. And don't forget: the ACT test doesn't penalize you for guessing. If you find yourself stuck on a difficult item, eliminate as many choices as possible, guess and move on!

## Science Test Strategy Summary Sheet

General Strategies: Science items test your reasoning skills, not your scientific knowledge. So, most passages have all of the information that you will need to answer the items. In some cases, background information at the level of your high school general science courses is required, but do not assume data that is not given. The following are general strategies for the Science Test:

1. Before reading any Science passage, quickly glance over all of the passages and code them according to type in order to determine the order in which you will attack them. Identifying and coding the passages should take no more than 5 seconds each.
2. Do NOT preview the item stems. Since the Science item stems tend to be confusing without having first corresponding passage, previewing them will only confuse you and slow you down.
3. It is important to only read the passage thoroughly once, rather than to skim over it several times. They can be difficult to understand; thus, it is important to read thoughtfully and carefully. Be an active reader and use your pencil to underline key words and points of information. That way, you will be able to locate them when answering the items.
4. When a Science passage includes tables or graphs, make sure that you read and understand the labels, columns, and rows. You need to know what information is being presented and what units of measure are used.
5. Many passages will contain much more information than you need to answer a particular item. Don't be misled by data that does not relate to the item at hand.
6. In Data Representation passages, tables and graphs present results, often of observations or experiments. Corresponding items will usually ask you to spot patterns in the data, so look for trends, such as upward movement, downward movement, inverse variation, etc.
7. The experiments described in Research Summary passages are based on scientific assumptions. However, if an assumption is faulty, the experiment may not prove what it claims, and conclusions drawn from it may be invalid. So, for items that ask about the validity of a scientific conclusion, consider the validity of underlying assumptions.
8. The arguments presented in Conflicting Viewpoints passages are also based on scientific assumptions. So, if the assumption is wrong, the entire argument is open to challenge. Assumptions that are based on scientific facts add strength to an argument; faulty assumptions weaken an argument.
9. Offering the assumptions that you started with as proof of your argument is called circular reasoning, and this type of proof is not acceptable. For that reason, any conclusions discussed in Science passages or offered as choices must be based on additional evidence (e.g. experiments) to be valid. Beware of any conclusions that are nothing more than a restatement of an underlying premise.
10. All of the information that you need to answer the items is provided in the passage—do not infer anything that is not given or relate any previous experience to the passage.
11. Transcribe your answers from the test booklet to the answer sheet in groups (by passage). However, when you arrive at the last passage, transcribe each answer as it is determined.

### **Strategies for Each Passage Type:**

- **Data Representation Passages:** When given data in the form of a graph or a chart, pay particular attention to the scale, units, legend, and other noted information.
- **Research Summary Passages:** When given multiple experiments, identify the controls and variables. Note that the controls must remain the same and that variables can only change one at a time in all experiments.
- **Conflicting Viewpoints Passages:** When given two points of view on a topic, identify the main points of difference and the logical value of each argument. After you understand the nature of the passage, attack the items.

### **Strategies for Each Item-Type:**

**Comprehension Items:** Recognize basic concepts. Read carefully. Make sure that your answers consider the appropriate scales and units. Also, note the difference between absolute and percentage changes.

**Analysis Items:** Identify relationships and trends. Pay particular attention to direct and inverse relationships.

**Application Items:** Draw conclusions, predict outcomes, and synthesize new information. In answering Application items, beware of the following terms: “all,” “none,” “always,” and “never.” Remember that a single case of contradictory evidence is all that is necessary to disprove absolute theory.