ACT Science Test Tips

1. The ACT Science Tests the student's ability to read, understand, and interpret scientific data. It is not as much about scientific knowledge as it is about understanding how the Scientific Method works and how to interpret scientific data.
2. Because the test doesn't really require you to actually have a lot of scientific knowledge, but instead to be able to understand information you are given, it is very possible to make a top score on this test that will serve to pull up other subject test scores and increase your overall composite score.
3. Don't waste time reading the directions. This is true for every section on the test. The directions do not change. Read them once when you take a practice test and then know that they will always be the same.
4. Always read the questions very carefully. Passages and graphics will often give you information that you do not need. Be sure you answer the question that was asked.
5. Always read the labels on figures, charts, graphs, etc. Labels are very important. Be sure to identify what is on both axis on all graphs and identify the relationship going on between the two variables.
6. Always answer the Conflicting Viewpoints questions LAST. These passages take a lot of time. Go pick up your easy points first.
7. Strategies for Data Representation and Research Summary questions:
    a. Do NOT read the passage first – in fact, you should never need to carefully read these passages. Doing so will cost you valuable time and points on the test.
    b. Look through the questions and try to answer them using ONLY the visuals provided. If you can't do that, make a note a move on. You can come back to them later.
    c. Read all the labels on the figures and identify the main point of the figure provided. Look at the axis on the graphs and identify what the relationship is between the two variables. Look at charts, bar graphs, and figures to understand what the point of the visual is. Ask yourself these questions:
        i. What does each axis on the graph represent?
        ii. What does the graph show?
    d. We you return to the passage that could not be answered using solely the visual info provided, try skimming the passage instead of reading it.
    e. Introductions to passages often contain golden nuggets of info that can help you understand and interpret the data.
    f. When you skim the passage, only look for the specific info the question is asking about. Do not pay any attention to unnecessary information. There will be a lot of it.
    g. When skimming a passage, try to identify what the main point of the passage is.
    h. Data Representation questions will be asked as:
        i. Factual questions – these questions ask you to read graphics, tables, or other visuals and to pull out specific data points. These are fast and easy

questions to answer and evaluate your ability to identify factual information. Make sure to read the question carefully to identify what information actually matters and what doesn't. There will be a lot of information on the page that does not matter.

ii. Interpreting Data questions – these questions want you to evaluate graphs, tables and other visuals to see if there is a relationship. For example, does a rise in temperature affect the pressure recorded? Do the values increase or decrease? Is the relationship direct or inverse?

iii. Calculation questions – these questions want you to take the data that is given and figure out where it may be going. You may be asked to extrapolate (project something based on current data) or interpolate (make an estimate based on 2 known observations) in these questions.

8. Strategies for Conflicting Viewpoints questions:
    a. There will only be 1 of these passages on the test.
    b. Save this passage for last.
    c. You DO need to read the entire passage and you will need to be very careful and attentive while you do it. It will take you proportionately more time to complete these questions.
    d. If you are short on time, try skimming the passage to pick up a few points.
    e. When you read, be sure to identify the main point of the passage and each figure.
    f. Make notes in your test book.
    g. When reading these passages, ask yourself the following questions and make notes in your test booklet:
        i. What does scientist/student 1 believe?
        ii. What does scientist/student 2 believe?
        iii. How are the 2 viewpoints similar?
        iv. How are the 2 viewpoints different?
9. Do NOT leave any answers blank. Use your Lucky Letter and move on if needed. Remember to use the same letter every time, so that probabilities will work in your favor and you will pick up extra points.
10. To improve your scientific reasoning skills, try reading science journals and articles. The will help you become more familiar with the scientific method and how to read scientific data. When reading scientific articles ask yourself:
    a. What is the point of the experiment?
    b. What was the hypothesis?
    c. How is the experiment supposed to validate the hypothesis?
    d. What is shown in the visuals included with the article?
11. Another way to prepare for the ACT Science Test is to do your best in your science classes. This will help you understand the more basic science terms and that will make the science test easier for you. Paying attention in your science classes will also help familiarize you with the scientific method and help you learn how to interpret scientific data.

12. Practice, practice, practice! Keep taking practice tests. Use official ACT study materials whenever possible. Free ACT practice science test questions can be found at https://www.act.org/content/act/en/products-and-services/the-act/test-preparation/free-act-test-prep.html Taking practice tests will be especially helpful in familiarizing yourself with the types of visuals the ACT uses on exams. When you are studying, always follow the same technique:
    a. If you aren't 100% sure about an answer, read the answer explanation and go back and study the concept that you were not sure about. This will help boost your confidence and keep you from missing these questions in the future.
    b. If you miss a question during your practice, really investigate WHY you missed it. This is where you really need to be a detective.
        i. Did you not understand the content? If that was the case, be sure to go back and review that subject matter.
        ii. Did you not understand the proper way to approach and answer the question? For example, if you don't know how to extrapolated data, go back and review that.
        iii. Did you make careless mistakes? Figure out how you can avoid doing that in the future.
        iv. If you miss you question, do not just skip it and go on. Resolve for yourself why you missed it.
13. There are only about 4 questions on the test that require you to have specific scientific knowledge. In this case, you won't be able to answer the question solely based on the visuals that are provided. If you have time in your prep schedule or are striving for a perfect or top score on the Science Test, you can study these subjects to be sure you are ready for these questions:

- Biology
    a. Cell Biology
    b. DNA, RNA, and Ribosomes
    c. Natural Selection
    d. Greenhouse Gases
    e. Photosynthesis and Respiration
    f. Taxonomic Rank
    g. Genetics

- Chemistry
    a. Basic Molecule Structure
    b. Freezing/Boiling Point of Water in Celsius
    c. pH Scale
    d. Molar Mass Concepts
    e. How Charges Interact
    f. Phase Changes

- Physics
    a. Gravity

b. Density Formula
c. Density Rules
d. Kinetic vs Potential Energy