

## Test-taking Strategies for the ACT Science Reasoning Test

The Science Reasoning portion of the ACT, tests your ability to interpret, analyze and evaluate science information. Some people refer to it as a science reading test as opposed to a science knowledge test. You will be given passages which contain a variety of scientific information (biology, chemistry, physics, geology, astronomy, etc.) which you will have to understand and interpret to answer the questions which follow each passage.

You will have 35 minutes to answer 40 questions; this equates to approximately 50 seconds per question. This time estimate includes reading all of the materials, and understanding the charts and graphs. There will be seven "passages" to read with up to 6 questions each. Some questions may include some math, but as a calculator can not be used on the Science ACT, it will be paper/pencil math.

### General Things to Consider:

1. All passages will be one of three kinds.
  - a. Data Representation (approx 38%)
  - b. Research Summaries/Experiments (approx 45%)
  - c. Conflicting Viewpoints (approx 17%)
2. All questions will fall into one of three categories.
  - a. Look it up/understanding (answer will be in the reading passage)
  - b. Why?/analysis
  - c. What if?/generalization (look for words like suppose, what if,)
3. Determine which passages will be the easiest for you to do and do those first. Remember time is always a factor when taking the ACT.
4. Scan the passage to determine what type it is. You will approach each passage type differently. Is the passage charts and graphs, experiments or fighting scientist?
5. Determine what type of question you are attempting to answer. Knowing into which category the question falls will help you eliminate distracters and eliminate obviously incorrect answers.
6. Guesstimate - use estimation. Much of the math involved is simple calculation.
7. Make sure that your answer choice is in the correct units...minutes vs. hours etc.
8. Don't panic if you don't understand the content of a graph or chart. The important thing is using it to answer the related questions. If you can read the chart or graph correctly, then often you can determine the correct answer without totally understanding the content.
9. All of the information needed to answer the questions will be included in the graph or reading passage. It is your prior knowledge of science content which will make understanding the passages easier. Remember though, that there will be inference questions which will require you to interpret and make predictions based on the reading.

## Content Tips:

### Graphs and Charts

1. Be able to read and interpret a variety of graph types - bar, linear, scatter diagrams, flat lines and graphs with curves.
2. When reading the graphs and charts, do four things: determine what's being represented, determine what each axis is representing, take note of the units of measurement used, and look for trends.
3. When reading data, look for three patterns or trends: extremes (maximums and minimums), critical points (or points of change), and direct or inverse variation. Be aware of what's changing and how.
4. Be able to identify independent and dependent variables.
5. Know how to interpolate and extrapolate - this is necessary for questions which require you to make a prediction or develop a hypothesis.

### Research Summaries/Experiments

1. Look for these things in a research summary passage and underline them when you find them: identify the objective or purpose, identify the variables and how they are controlled, identify if there is a control group, identify the method of research and identify the results.
2. Understand what assumptions are and be able to identify them in experiments.
3. Understand what a control is and be able to identify it in an experiment. Ask yourself, how does the measured variable depend on the controlled variable?

### Conflicting Viewpoints:

1. Pay attention to the introductory question. It sets the stage for your reading.
2. When reading the conflicting viewpoint passages, don't get hung up on determining which scientist is "right." You need to focus on understanding the different viewpoints. The questions are not going to focus on rightness of an opinion, but on distinguishing between the two.
3. When reading a conflicting viewpoint passage (there will be one), make sure you can identify the **similarities and differences** between the views being presented and the information used to support those viewpoints. Underline this as you read.
4. Pay attention to when a viewpoint is being supported by facts as opposed to opinion. Don't confuse the two. Answers that seem correct are frequently based on opinions.

### Multiple Choice Tips

1. Circle or underline key words in the passages
2. Cross out clearly incorrect choices
3. Beware of distracters
4. Make sure you understand what is being asked
5. Watch out for absolute statements
6. Answer the easiest questions first

All information taken from:  
Martz, Geoff, Kim Magliore, and Theodore Silver. *Cracking the ACT 2009*

*Edition*. New York: Random House, 2009. Print.

Stewart, Mark Allan. *ACT Assessment for Brainiacs*. Lawrenceville, NJ:

Thomson Peterson, 2005. Print.