

# STRATEGY SUMMARY

## SCIENCE STRATEGIES

## My Notes

Science items test your reasoning skills, not your scientific knowledge. So, most of the 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 passage-type* in order to determine the order in which you will attack them. Identifying and coding the passages should take no more than five seconds each.
2. *Do NOT preview the item stems.* Since the Science item stems tend to be confusing without having first read the 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. The material can be difficult to understand; thus, it is important to read thoughtfully and carefully. *Be an active reader.* Use your pencil to underline key words and points of information. That way, you will be able to locate them easily when answering the items.
4. When a Science passage includes tables or graphs, make sure that you *read and understand the labels* on axes, columns, and rows. You need to know what information is being presented and what units of measure are being used.
5. Many passages will contain much more information than you need to answer a particular item. In your search for a logical conclusion, *do not 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

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assumption is faulty, the experiment may not prove what it claims, and conclusions drawn from it may therefore be invalid. So, for items that ask about the validity of a scientific conclusion, *consider the validity of any underlying assumptions.*

8. The arguments presented in Conflicting Viewpoints passages are also based on scientific assumptions. Again, *if the assumption is wrong, the entire argument is open to challenge.* Assumptions that are based on scientific fact 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 answer 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 any information that is not given or relate any previous experience to the passage. *Pay attention to material noted with an asterisk.*
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.

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### 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 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 an absolute theory.

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