

ACT PREPARATION: SCIENCE REASONING

I. General testing skills:

A. READ CAREFULLY

- underline important information
- pay attention to information in parentheses ()
- as you read, summarize to yourself
- reread parts as necessary

B. Draw a picture in your test book to help visualize the problem

C. Read each question and determine what is being asked

D. Skip less familiar passages which may take longer and do them last...do try to complete all the questions in a section you have started before going on.

II. Science Reasoning: you should be familiar with the following:

A. Hypothesis: statement that explains or predicts what will happen.

B. Independent variable-variable that the study is testing....the “thing” you change.

C. Dependent variable-variable that changes as a result of what you did...the effects you are testing for.

D. Control-does not get the treatment of the independent variable...shows the results are due to what you changed and would not have happened anyway.

E. Constants-parts of the experiment that are held constant so you know the results are due to the independent variable.

III. Types of Test Questions:

A. Data Representation (3 of the 7 passages)

You will interpret the data table or diagram and draw conclusions

- determine if....
- predict...
- could....
- which can be correct

Strategies:

- * don't get bogged down in a hard question...they often ask easy questions about hard diagrams
- * key questions they might ask about graphs include info on titles/labels/units and how to compare variables

B. Research Summaries (3 of the 7 passages)

You will be asked about how the experiment was done and if the methods/conclusions are valid.

- if this had been done differently....
- can you draw this conclusion
- would it be more accurate to....
- which part involves an assumption
- what supports this conclusion
- this information was necessary because...

Strategies:

- * try to determine the object/purpose of the study
- * determine which variables changed and what was measured (check units)
- * look for trends in data

C. **Conflicting Viewpoints (1 of the 7)**

You will compare and contrast 2 view points and the validity of each.

- According to.....
- Which is supported by.....
- Which is not consistent with.....
- If this happens then which is supported...

Strategies:

- summarize the first viewpoint before reading the second
- as you read the second note which aspects are like/not like the first
- neither viewpoint will be “right”
- look for data or assumptions that support each
- read carefully...if it says “according to view 1”; only consider view one

IV. **Other Skills**

A. **Determining relationships between variables**

* positive or direct= as one does up the other goes up OR as one goes down the other goes down

* negative or inverse= as one goes up the other goes down OR as one goes down the other goes up

B. **Reading Data**

*interpolate: “read between the lines” You may have info about values at 10 and twenty but the question asks for 15.

*extrapolate: “read beyond” You may have info to 100 but they ask you to continue the trend to 150.