



# Tips and Techniques

## Designing Test Items

Scripture Verse: " 'Because you have kept the word of My perseverance, I also will keep you from the hour of testing, that hour which is about to come upon the whole world, to test those who dwell on the earth.'"  
(Revelation 3:10)

### Construction Objective Test Items - True/False or Alternative Response Items

Give each student a scoring rubric prior to the exam.

1 **Avoid broad general statements** if they are to be judged true or false. (Most broad generalizations are false unless qualified, and the use of qualifiers provides clues to the answer).

*Poor:* T F The president of the United States is elected to that office.

*Poor:* T F The president of the United States is usually elected to that office.

2 **Avoid trivial statements.** (Trivial statements indirectly train students to memorize minutiae at the expense of more general knowledge and understanding.)

*Poor:* T F Harry S Truman was the thirty-third president of the United States.

*Poor:* F F The United States declared war on Japan on December 7, 1941.

3 **Avoid the use of negative statements**, especially double negatives. (Students tend to overlook negative words such as no or not. If you have to use a double negative, underline it or put it in italics.)

*Poor:* T F None of the steps in the experiment was unnecessary.

*Better:* T F All of the steps in the experiment were necessary.

4 **Avoid long, complex statements.**

*Poor:* T F Despite the theoretical and experimental difficulties of determining the exact *pH* value of a solution, it is possible to determine whether a solution is acid by the red color formed on litmus paper when it is inserted into the solution.

*Better:* T F Litmus paper turns red in an acid solution.

5 **Avoid including two ideas in one statement**, unless cause-effect relationships are

being measured.

*Poor:* T F A worm cannot see because it has simple eyes.

**6 If opinion is used, attribute it to some source**, unless the ability to identify opinion is being specifically measured.

*Poor:* T F Adequate medical care can best be provided through socialized medicine.

*Better:* T F The American Medical Association favors socialized medicine as the best means of providing adequate medical care.

7 True statements and false statements should be approximately equal in length. (There is a natural tendency for true statements to be longer.)

8 The number of true and false statements should be approximately equal.

### Short Answer

Give the students a scoring rubric prior to the exam. If using a word bank, include extra words, and consider answers for partial credit.

1 Word the items so that the required answer is both brief and specific. (Answer should be a word, phrase, number or symbol.)

*Poor:* An animal that eats the flesh of other animals is (carnivorous).

*Better:* An animal that eats the flesh of other animals is classified as (carnivorous).

2 Do not take statements directly from textbooks to use as test items. (Textbook statements often are too general and only measure a student's ability to memorize textbook statements; there is little opportunity to develop verbal associations.)

*Poor:* Chlorine is a (halogen).

*Better:* Chlorine belongs to a group of elements that combine with metals to form salt; it is therefore called a (halogen).

3 A direct question is generally more desirable than an incomplete statement. (This is a more natural response mode for students, and it reduces ambiguity.)

*Poor:* John Glenn made his first orbital flight around the earth in (1962).

*Better:* When did John Glenn make his first orbital flight around the earth? (1962).

*Best:* In what year did John Glenn make his first orbital flight around the earth? (1962).

4 If the answer is to be expressed in numerical units, indicate the type of answer wanted. (This will simplify scoring.)

*Poor:* If oranges weigh  $5 \frac{2}{3}$  oz. Each, how much will a dozen oranges weigh? Answer: (4 lb. 4 oz.).

*Better:* If oranges weigh  $5 \frac{2}{3}$  oz. Each, how much will a dozen oranges weigh? Answer: (4) lb. (4) oz.

5 Blanks for answers should be equal in length and in a column to the right of the question. (The length should not supply a clue. Scoring is quicker and more accurate when placed at the end. Students are presented with the entire problem before they have to respond.)

*Better:* What is the name of the part of speech that connects words, clauses, and sentences? (Conjunction)

What is the name of the part of speech that declares, asserts, or predicts something? (Verb)

6 When completion items are used, do not include too many blanks. (The more blanks, the more the student will resort to guessing.)

*Poor:* (Warm-blooded) animals that are born (alive) and (suckle) their young are called (mammals).

*Better:* Warm-blooded animals that are born alive and suckle their young are called (mammals).

### Matching Exercises

Give the students a scoring rubric prior to the exam

1 Use only homogeneous material in a single matching exercise. (Rather than mixing inventors, explorers, and presidents together, do an exercise for each group. This will reduce irrelevant clues.)

2 Include an unequal number of responses and premises, and instruct the pupil that responses may be used once, more than once, or not at all. (This will greatly reduce guessing. The odds for correct guessing increases as the list of responses decreases.)

3 Keep the list of items to be matched brief, and place the shorter responses to the right. (It is easier to maintain homogeneity when the list is shorter. Responses are read quicker and without confusion. 4-7 items per column is best. Items placed to the right which are shorter contributes to more efficient test taking by the student reading the longer premise first and then scanning rapidly the list of responses.)

4 Arrange the list of responses in logical order. (Place words in alphabetical order and numbers in sequence. This will help scanning ease and deleting possible clues from the arrangement of the responses.)

*Directions:* On the line to the left of each historical event in Column A, write the letter from Column B that identifies the time period when the event occurred. Each date in Column B may be used once, more than once, or not at all.

		Ans		Column A
	<i>Column B</i>			
(B)1.	Boston Tea Party		A	1765-1769
(A)2.	Repeal of the Stamp Act		B	1770-1774
(E)3.	Enactment of the Northwest Ordinance		C	1775-1779
(C)4.	Battle of Lexington		D	1780-1784
(A)5.	Enactment of Townsend Acts		E	1785-1789
(B)6.	First Continental Congress			
(E)7.	United States Constitution drawn up			

5 Indicate in the directions the basis for matching the response and premises. (This will avoid confusion, and testing time will be saved. Keep directions as short as possible.)

6 Place all of the items for one matching exercise on the same page. (This will reduce the disturbance of students flipping pages and student confusion on test items.)

### Essay Questions

Give the students a scoring rubric prior to the exam. (You can find many examples on line.)

1 **Construct the question.** An all-encompassing essay question can be used effectively to measure the several abilities developed in a course, and to identify these measured abilities. This requires more structuring of the question than is customarily given, however, and more complete directions to guide the student in his answers. The teacher, in constructing this general type of essay question, should list in rather complete form, at the time of test construction, the major points that he wants the student to bring out in his answer, as well as the abilities which he wants demonstrated. Having thereby clarified his objectives for the test, he is better able to provide the student with a guiding framework for his replies.

If the objective of the test item is not clear to the instructor, it is almost certain to be confusing to the student. A clear conception of measurement goals not only helps the instructor in the construction and scoring of effective and reliable test items, but also helps the student to understand what is expected of him.

2 **Grading.** Consistency of grading from paper to paper is often improved by reading one question through the entire set of papers. That is, instead of reading each test paper completely through (assuming that more than one questions is involved), the first question should be read on the first paper, then on the second paper, and so forth until this question has been read on the last paper. Then question #2 is read through the entire set of papers. Some readers go a step farther and reverse the order of reading, i.e., read the papers in reverse order for question #2. An added advantage of this method is that, if the number of papers is large, all of the answers to one question may be read at one sitting, a second question at a second sitting, etc.; thus uniformity of grading is enhanced for each question and hence for the total test.

3 **Sorting.** Another device used to improve uniformity in grading involves a general sorting process. The papers are read through and sorted into four or five piles according to degree of quality. The papers in each pile are then re-read and if there are any which should be reclassified, they are re-sorted into the other piles. After the instructor feels that he has several different levels of quality differentiated, he assigns scores to the papers within each pile. If the test consists of several questions, the test papers are reshuffled and the sorting process is repeated for each question.