



SECTION 3

SAMPLE CONSTRUCTED-RESPONSE ASSIGNMENTS

This section of the Georgia Assessments for the Certification of Educators® (GACE™) Preparation Guide is designed to assist you in responding to the constructed-response assignments on the test. Included in this section are:

- ▶ Constructed-response assignment directions
- ▶ Sample constructed-response assignments
- ▶ Assignment response sheets
- ▶ An example of a strong response to each sample assignment
- ▶ Scoring criteria that will be used in evaluating your response to each assignment

For each sample assignment, you may want to take the following steps to prepare for the test:

- Review the constructed-response assignment directions.
- Print the assignment and the assignment response sheet.
- Use scrap paper to make notes, write an outline, or otherwise prepare your response.
- Use the assignment response sheet to record your response. The assignment response sheet reflects the amount of space available on an actual test.
- After you complete the assignment, review the sample strong response, your response, and the scoring criteria.

Please note that a periodic table and a set of definitions and physical constants are provided for this test. Please refer to these materials as needed in responding to the sample test questions and assignments. These materials are located in the Assessment Reference Materials section at the end of this preparation guide.

A scientific calculator may be used for this test as needed in responding to the sample test questions and assignments. Please refer to the current GACE registration bulletin for information about the use of calculators at the test administration.

CONSTRUCTED-RESPONSE ASSIGNMENT DIRECTIONS

A sample of the directions for the constructed-response assignments is shown in the box below.

CONSTRUCTED-RESPONSE ASSIGNMENT DIRECTIONS

For each constructed-response assignment in this section, you are to prepare a written response of up to one page and record it in the area provided on the appropriate Assignment Response Sheet in your answer document.

Read each assignment carefully before you begin to write. Think about how you will organize what you plan to write. You may use any blank space provided in this test booklet following each assignment to make notes, write an outline, or otherwise prepare your response. *However, each of your final responses must be written on the appropriate Assignment Response Sheet in your answer document.*

Your responses will be evaluated based on the following criteria:

- **Purpose:** The extent to which the response fulfills the purpose of the assignment in relation to relevant GACE framework objectives
- **Application of Content Knowledge and Skills:** The extent to which the response accurately and effectively applies content knowledge and skills in relation to relevant GACE framework objectives
- **Supporting Evidence:** The extent to which the response includes appropriate, specific supporting evidence of content knowledge and skills in relation to relevant GACE framework objectives

Evaluation of each response will be based on the criteria above, not on your writing ability. However, your response must be communicated clearly enough to permit a valid judgment of your knowledge and skills. Your responses should be written for an audience of educators in the field.

Your responses should be your original work, written in your own words, and not copied or paraphrased from some other work. Please write legibly. You may not use any reference materials during the test. Remember to review your work and make any changes you think will improve your responses.

The selected-response section of the answer document containing your name will be removed from your written responses to maintain your anonymity during the scoring process. Do not write your name on any other portion of the answer document, and do not separate any of the sheets from the document.

Please turn the page and begin the constructed-response assignment section of the test.

CONSTRUCTED-RESPONSE ASSIGNMENT ONE

■ Sample Constructed-Response Assignment One

Use the information below to complete the assignment that follows.

Water evaporating from the surface of an object lowers the temperature of the object.

- Describe why the evaporation of water from the surface of an object lowers the temperature of the object; and
- explain the changes that occur at the atomic or molecular level as water evaporates from the surface of the object, causing the temperature of the object to decrease.

■ Strong Response to Sample Constructed-Response Assignment One

To change phase from a liquid to a gas requires an input of energy because the average kinetic energy of the water molecules in a gas is greater than the average kinetic energy of water molecules in the liquid state. Energy is conserved during evaporation. This means that if the water on the surface of an object loses some energy to the atmosphere as water molecules evaporate, the atmosphere will get warmer, while the water left behind will get cooler.

The temperature of the water is a measure of the average kinetic energy of the water molecules in the water. The evaporation of water occurs as the fastest moving water molecules in the water break free of the surface and enter the overlying atmosphere. When these molecules leave the damp surface of an object, the average kinetic energy of the remaining water molecules is lower than it was, lowering the temperature of the remaining water. The cooler water then cools the object it is in contact with by conducting heat from the object. As the last bit of water evaporates from the surface of an object, it takes energy with it, cooling the object. The chill that a person experiences upon stepping out of the shower is a familiar example of this phenomenon.

During the change of phase from a liquid to a gas, water molecules become less organized, but do not change their molecular structure. A phase change is a physical change not a chemical change because the bonds between the hydrogen and oxygen atoms that water molecules are composed of do not break to form new substances.

CONSTRUCTED-RESPONSE ASSIGNMENT TWO

■ Sample Constructed-Response Assignment Two

Use the information below to complete the assignment that follows.

A student wants to determine the size of a population of grasshoppers in a field.

- Describe an appropriate investigative design that would allow a valid scientific conclusion to be drawn about this topic.

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■ Strong Response to Sample Constructed-Response Assignment Two

The student should first measure the area of the field to be studied. Then five one-meter square plots should be marked off with string and stakes. Presuming the field has relatively uniform characteristics (e.g., vegetation type, sunlight, and moisture), the plots should be placed randomly in different parts of the field. The student should then count the number of grasshoppers in each of the plots and then add up the total number of grasshoppers in the five plots and divide by five to get an average number of grasshoppers per square meter. This number can then be multiplied by the total number of square meters in the field to estimate the grasshopper population in the whole field. The procedure should then be repeated two more times using different plots. The three estimates of the field's grasshopper population can then be averaged.

An important reason to conduct three separate trials is that it can alert the researcher to problems in his or her methodology. For example, if the population estimates for the whole field are very different from the three different trials, it might suggest that there are differences in the field that need to be accounted for in the placement of plots. Since the weather conditions and time of day might affect the number of grasshoppers that are in the field (or their visibility), the activity should be carried out over the course of a single afternoon when conditions for grasshoppers are optimal. These procedures should provide a valid estimate of the grasshopper population. Ideally, the whole experiment would be repeated on a different day and the results compared.

CRITERIA FOR SCORING YOUR RESPONSE

Each response will be evaluated based on the following criteria.

PURPOSE	The extent to which the response fulfills the purpose of the assignment in relation to relevant GACE framework objectives
APPLICATION OF CONTENT KNOWLEDGE AND SKILLS	The extent to which the response accurately and effectively applies content knowledge and skills in relation to relevant GACE framework objectives
SUPPORTING EVIDENCE	The extent to which the response includes appropriate, specific supporting evidence of content knowledge and skills in relation to relevant GACE framework objectives

Each response is rated on a three-point scale. The three score points of the score scale correspond to varying degrees of performance that are related to the above criteria.

Score	Description
3	<p>The "3" response reflects thorough understanding of relevant content knowledge and skills as defined in relevant GACE framework objectives.</p> <ul style="list-style-type: none"> • The response fully achieves the purpose of the assignment. • The response demonstrates an accurate and effective application of relevant content knowledge and skills. • The response provides appropriate, specific supporting evidence of relevant content knowledge and skills.
2	<p>The "2" response reflects general understanding of relevant content knowledge and skills as defined in relevant GACE framework objectives.</p> <ul style="list-style-type: none"> • The response largely achieves the purpose of the assignment. • The response demonstrates a generally accurate, generally effective application of relevant content knowledge and skills. • The response provides some appropriate and general supporting evidence of relevant content knowledge and skills.
1	<p>The "1" response reflects limited or no understanding of relevant content knowledge and skills as defined in relevant GACE framework objectives.</p> <ul style="list-style-type: none"> • The response partially achieves or fails to achieve the purpose of the assignment. • The response demonstrates limited, inaccurate, and/or ineffective application of relevant content knowledge and skills. • The response provides limited or no appropriate, specific supporting evidence of relevant content knowledge and skills.

Please note: A response that is unrelated to the assigned topic, illegible, not primarily in the target language, or lacking a sufficient amount of original work to score will be considered **unscorable**. If there is no response to the assignment, then the response will be considered **blank**.