



## SECTION 5

### TEST II 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.

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## 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.

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## CONSTRUCTED-RESPONSE ASSIGNMENT ONE

### ■ Sample Constructed-Response Assignment One

Use the information below to complete the assignment that follows.

An ecologist studying a temperate deciduous forest ecosystem observes that a species of mushroom is distributed unevenly in the ecosystem. There are clusters of the mushroom species in some locations, while other nearby areas have few or no mushrooms.

- Identify an abiotic (physical) factor in a temperate deciduous forest ecosystem that is likely to have a significant effect on the mushroom species; and
- describe how this abiotic factor is likely to affect the mushroom species and would explain its uneven distribution in this ecosystem.



**Strong Response to Sample Constructed-Response Assignment One**

The distribution of nonliving organic matter in general, and of dead wood in particular, is an abiotic factor that is likely to have a significant effect on mushroom species in a temperate deciduous forest. This is because mushrooms are the reproductive structures of a group of heterotrophic fungi that are known for their ability to break down nonliving organic materials and use them as an energy source. They secrete enzymes that digest food externally, and then absorb the nutrients.

A deciduous forest has two excellent sources of food for mushrooms. There is a top layer of humus, which is composed of dead leaves and branches that have fallen to the forest floor from the trees and other plants found in the forest. These decay and provide a rich source of minerals and organic nutrients. However, humus can be unevenly distributed depending on local conditions; for example, the amount of direct sunlight, temperature, terrain, and drainage conditions affect the rate at which organic material decomposes or is lost to erosion.

Another nutrient-rich, nonliving food source is the fallen tree trunks that are strewn around the forest floor. Many mushrooms grow in and around these fallen tree trunks, which may be randomly distributed or result from logging operations, fires, and storm damage.

To the extent that mushroom growth is limited by nutrient availability, the distribution of these sources of nutrition will limit the places mushrooms can be found in a deciduous forest. This would explain why mushroom populations are unevenly distributed throughout the area of a deciduous forest.

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## CONSTRUCTED-RESPONSE ASSIGNMENT TWO

### ■ Sample Constructed-Response Assignment Two

Read the information below; then complete the assignment that follows.

A biologist has developed a granulated plant fertilizer that is designed to be dissolved in water and then applied to the soil during daily watering. The biologist wants to determine the minimum concentration of fertilizer that needs to be applied daily to a particular variety of tomato plant to maximize the number of tomatoes produced per plant.

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



## Section 5: Test II Sample Constructed-Response Assignments

### ■ Strong Response to Sample Constructed-Response Assignment Two

A biologist needs to establish an experimental design in which tomato plants are grown under conditions that are uniform in every way except for the concentration of the liquid fertilizer that will be applied.

Thirty tomato plants of the variety to be used will be chosen. They should be healthy plants that are genetically similar, comparable in age, size, and general appearance, and should not yet have any flowers. The greenhouse space to be used is divided into six sections of sufficient size as to allow each plant to grow without crowding its neighbors. Environmental conditions such as light, temperature, and soil type should be uniform in all six experimental plots. Five plants are transplanted to each section and allowed sufficient time to establish themselves.

Solutions of 0%, 1%, 5%, 10%, 15%, and 20% fertilizer are prepared using distilled water. The six groups of plants will be watered at the same time every day, with each group receiving the same quantity of one of the fertilizer solutions. The plants receiving only distilled water with no fertilizer are the control group. All plants will be inspected daily and records kept for each plant noting its general appearance and any evidence of abnormal growth or disease that might have an effect on the results of the experiment. The tomatoes produced by each plant will be counted, measured, weighed, and described with respect to color, firmness, and overall appearance.

An appropriate statistical analysis will be done to determine the effect of the different fertilizer concentrations on fruit development.

## CRITERIA FOR SCORING YOUR RESPONSE

Each response will be evaluated based on the following criteria.

<b>PURPOSE</b>	The extent to which the response fulfills the purpose of the assignment in relation to relevant GACE framework objectives
<b>APPLICATION OF CONTENT KNOWLEDGE AND SKILLS</b>	The extent to which the response accurately and effectively applies content knowledge and skills in relation to relevant GACE framework objectives
<b>SUPPORTING EVIDENCE</b>	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.

<b>Score</b>	<b>Description</b>
<b>3</b>	<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"> <li>• The response fully achieves the purpose of the assignment.</li> <li>• The response demonstrates an accurate and effective application of relevant content knowledge and skills.</li> <li>• The response provides appropriate, specific supporting evidence of relevant content knowledge and skills.</li> </ul>
<b>2</b>	<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"> <li>• The response largely achieves the purpose of the assignment.</li> <li>• The response demonstrates a generally accurate, generally effective application of relevant content knowledge and skills.</li> <li>• The response provides some appropriate and general supporting evidence of relevant content knowledge and skills.</li> </ul>
<b>1</b>	<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"> <li>• The response partially achieves or fails to achieve the purpose of the assignment.</li> <li>• The response demonstrates limited, inaccurate, and/or ineffective application of relevant content knowledge and skills.</li> <li>• The response provides limited or no appropriate, specific supporting evidence of relevant content knowledge and skills.</li> </ul>

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**.