Table of Contents

This document contains information that will help teachers administer Cumulative Assesslets and interpret results. Please note you will need to reference the student Cumulative Assesslet as you review this guide. Teachers can decide how to best utilize the Cumulative Assesslets to inform instruction. Suggestions are provided in each Administration section.

Background Information ................................................................................................................................................. 3
  Purpose of the Cumulative Assesslets .......................................................................................................................... 3
  Development of Cumulative Assesslets ........................................................................................................................... 3
  Types of Items ................................................................................................................................................................ 4
  Blueprint ......................................................................................................................................................................... 5

Online Cumulative Assesslet Administration ................................................................................................................................ 6
  Prior to Administration ................................................................................................................................................... 6
  Navigating Lennections Practice Tests (OPTIONAL) ........................................................................................................... 6
  Scheduling .................................................................................................................................................................... 6
  Materials ........................................................................................................................................................................ 6

Online Administration of Cumulative Assesslets .................................................................................................................. 7
  Teacher Directions for Online Administration .................................................................................................................. 8
  Results .......................................................................................................................................................................... 9

Paper Cumulative Assesslet Administration .................................................................................................................................. 10
  Prior to Administration ................................................................................................................................................ 10
  Scheduling .................................................................................................................................................................. 10
  Materials .................................................................................................................................................................... 10

Paper Administration of Cumulative Assesslets ................................................................................................................... 11
  Teacher Directions for Paper Administration ................................................................................................................ 12

Returning Materials for Scoring ............................................................................................................................................ 14
  Shipping Materials ........................................................................................................................................................ 16
  Results ....................................................................................................................................................................... 16

Learning Supports Science .................................................................................................................................................. 17

Scoring ........................................................................................................................................................................... 18
  Scoring Process ........................................................................................................................................................... 18
  Scoring Guide ............................................................................................................................................................... 19
Background Information

**Purpose of the Cumulative Assesslets**

Cumulative Assesslets are formative tools for teachers to assess student learning and guide instruction. This Science Cumulative Assesslet is intended to provide instructional information for teachers and is designed to assess curriculum for a particular grade level. Each item within the Cumulative Assesslet is designed to require extended reasoning and critical thinking. Because of the state’s recent adoption of the new curriculum, Cumulative Assesslets in Science are aligned to both the Georgia Standards of Excellence (GSE) and the Georgia Performance Standards (GPS). This Cumulative Assesslet is intended to provide information on student learning within a particular grade level so that teachers can target instruction.

GCA offers professional learning sessions to assist with understanding results and next steps for instruction. If you have questions regarding the results, please contact the GCA help desk at 888-392-8977.

**Development of Cumulative Assesslets**

Cumulative Assesslets are developed using information available through the Georgia Department of Education (GaDOE). Documents, such as the *Georgia Milestones EOG Assessment Guides* and the *Georgia Milestones Content Weights* were used to develop the Cumulative Assesslets and are available on the GaDOE website for use by teachers. All Cumulative Assesslets are reviewed by Georgia classroom teachers during the development process.
Types of Items

Selected-Response (SR) Items

A selected-response item, sometimes called a multiple-choice item, is defined as a question, problem, or statement that appears on a test followed by several answer choices. The incorrect choices, called distractors, usually reflect common errors. The student’s task is to choose the best answer to the question posed in the stem (the question). The selected-response items for grades 1 and 2 have three answer choices and four answer choices for grades 3-HS.

Constructed-Response (CR) Items

A constructed-response item asks the student to provide a response that he or she constructs on his or her own, rather than selecting from choices provided. On Cumulative Assesslets, full credit (two points) is given for a complete response, but partial credit may be awarded if part of the response is correct.

Extended Response (ER) Items

An extended response item is a specific type of constructed-response item that requires a longer, more detailed response from the student than a two-point constructed-response item. The extended response item is worth four points. Partial credit may be awarded if part of the response is correct.
Blueprint

An assessment blueprint outlines the concepts and skills measured on an assessment. Cumulative Assesslet blueprints include standards assessed, item types, and depth of knowledge (DOK) for each item.

Standards: All items are aligned with the Georgia Standards of Excellence (GSE).

Item Types: Items can either be selected-response (SR), constructed-response (CR), or extended-response (ER).

Depth of Knowledge (DOK): DOK levels reflect the complexity or the cognitive demand required to successfully respond to an item. Most items on Cumulative Assesslets are either DOK 2 or 3.

The following table provides the blueprint for this Cumulative Assesslet.

<table>
<thead>
<tr>
<th>GSE Standard(s)</th>
<th>GPS Standard(s)</th>
<th>Item Type</th>
<th>DOK</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>S3E1a</td>
<td>S3E1b</td>
<td>SR</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>S3E1b</td>
<td>S3E1c</td>
<td>SR</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>S3E1b</td>
<td>S3E1c</td>
<td>SR</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>S3E1c</td>
<td>S3E1d</td>
<td>SR</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>S3E2a</td>
<td>S3E2a</td>
<td>SR</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>S3E2a</td>
<td>S3E2a</td>
<td>SR</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>S3E2b</td>
<td>S3E2b</td>
<td>SR</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>S3E2b</td>
<td>S3E2b</td>
<td>SR</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>S3P1a</td>
<td>S3P1a</td>
<td>SR</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>S3P1a</td>
<td>S3P1a</td>
<td>SR</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>S3P1b</td>
<td>S3P1d</td>
<td>SR</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>S3P1b</td>
<td>S3P1d</td>
<td>SR</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>S3P1c</td>
<td>S3P1b, S3P1c</td>
<td>SR</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>S3P1c</td>
<td>S3P1b, S3P1c</td>
<td>SR</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>S3L2a</td>
<td>S3L2a</td>
<td>SR</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>S3L1a</td>
<td>S3L1a</td>
<td>SR</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>S3L1a</td>
<td>S3L1a</td>
<td>SR</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>S3L1b</td>
<td>S3L1c</td>
<td>SR</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>S3L1b</td>
<td>S3L1c</td>
<td>SR</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>S3L1c</td>
<td>S3L1a, S3L1b, S3L1d</td>
<td>SR</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>S3L2a</td>
<td>S3L2a</td>
<td>SR</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>S3L2b</td>
<td>S3L2b</td>
<td>SR</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>S3E1b</td>
<td>S3E1c</td>
<td>CR</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>S3L1b</td>
<td>S3L1c</td>
<td>CR</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>S3E2b</td>
<td>S3E2b</td>
<td>ER</td>
<td>3</td>
<td>25</td>
</tr>
</tbody>
</table>
Online Cumulative Assesslet Administration

Cumulative Assesslets are formative in nature, and teachers are encouraged to adapt this guide as appropriate to meet the specific needs of their classroom. This section provides information to those administering Cumulative Assesslets online to students.

**Prior to Administration**

Prior to the administration of the Cumulative Assesslet in the Lnenctions online platform, teachers must use the access code provided by an administrator to assign the Cumulative Assesslet to students. Teachers need to have a list of student logins and passwords accessible before and during testing. These will be provided in the Lnenctions platform once the students have been entered by the designee at the local school.

Note: Reference the provided *Quick Start Guide* for specific instructions on how to assign the Cumulative Assesslet to students.

**Navigating Lnenctions Practice Tests (OPTIONAL)**

There are practice tests available for use prior to the administration of the Cumulative Assesslet. The purpose of the practice test is to allow students time to acclimate themselves to the online testing platform, Lnenctions.

If interested, please call GCA help desk at 888-392-8977 and we will provide an access code for the practice test. Within the practice test in Lnenctions, there is a Test Script for you to use to administer the practice test.

**Scheduling**

Cumulative Assesslets are formative so there is flexibility with how much time to provide for administration. The schedule may be adjusted to allow for availability of computers for administration, shorter class periods, or using the Cumulative Assesslet as an instructional tool. Cumulative Assesslets may be administered over multiple class periods if needed to accommodate schedules.

**Materials**

The following materials are needed to administer the Cumulative Assesslet:

- Scratch paper for the Cumulative Assesslet may be provided to students. You may provide students with 1-2 sheets of scratch paper.
Online Administration of Cumulative Assesslets

Using Assesslets as an Instructional Tool

- Teachers may decide their students would benefit from administering Cumulative Assesslets in a small group or classroom setting. Teachers may provide guidance on how to approach items and may discuss strategies and concepts with the students.
- Teachers may work with students, providing strategies on how to address types of items on the Cumulative Assesslet.
  - Modeling how to manage time while taking the test is important for students to experience prior to the assessments.
  - Modeling how to read questions carefully so students understand what the question is asking will benefit students in all test-taking experiences.
- Each Cumulative Assesslet was developed for a specific grade level. The items are aligned to grade level standards. However, teachers may elect to use Cumulative Assesslets from other grade levels to inform instruction for specific groups of students.

Note: If the Cumulative Assesslet is used for instructional purposes, student results will need to be evaluated differently than if it is administered independently to students. Teachers need to evaluate student results based on the type of administration.
Teacher Directions for Online Administration

Cumulative Assesslets are formative so there is flexibility with how much time to provide for administration. You may adjust the directions based on the time allotted.

If you are reading items aloud to students, you will need to do the following:

- Login to your teacher account.
- Click on ‘GCA Activities’ on the left.
- Click on the Assesslet you are administering.
- Click on the blue ‘Preview Activity’ button.

This will allow you to see the items to read to the students. Read only the words on the test.

Read aloud text in **bold**:

The purpose of today’s activity is to provide you with an opportunity to practice items similar to the kind you see in class and could see on assessments. Try your best to answer each question.

Each of you received a username and password to take the test. Enter your username in the space provided.

Enter your password in the space provided.

Provide assistance to those students who need help entering the username and password. For students having trouble logging in, check that the cursor is in the correct field and caps lock is not on.

Complete the following statement based on the title of the Cumulative Assesslet that you will administer:

Click on the Cumulative Assesslet titled “______________.”

You will be asked to answer twenty-five questions. For the first twenty-two questions, choose the one BEST answer and mark it on the response card. Then, for the final three questions, type your answer in the appropriate box on your response card.

Click on the “Directions” tab and read the directions silently while I read them aloud.

- Read all the directions for each question carefully and think about the answer.
- This Assesslet contains several items. Some questions are selected-response items where you choose the one BEST answer. Answer each question by choosing the correct answer and marking it on your response card on the right side of your screen.
- Two questions are constructed-response items. Use the scratch paper provided as needed. Type your answer(s) in the box provided on the right side of the screen.
One question is an extended-response item. Use the scratch paper provided as needed. Type your answer(s) in the box provided on the right side of the screen.

Be sure to answer all of the questions on the Assesslet. When you are finished, click the green “Finish” button to submit your answers for scoring.

If you finish before time is called, you may go back and review your answers before you click “Finish.”

Are there any questions? You may begin.

At the end of the administration period, say:

Please stop working. Click the green “Finish” button and submit your answers for scoring.

Note: If students close the web browser before clicking the green “Finish” button, their responses will not be submitted for scoring.

Results

Once the Cumulative Assesslet has been scored by GCA, results will be available through the results tab in Lennections.
Paper Cumulative Assesslet Administration

Prior to Administration

Prior to the administration of the Cumulative Assesslet, complete the following:

- Schedule sufficient time to administer the Cumulative Assesslet based on the administration option selected (refer to the Scheduling section below).
- Using the .pdf file provided by GCA, either copy the Cumulative Assesslet for each student or copy a class set and reuse them. Be sure to staple all pages together. Ensure that you have one Cumulative Assesslet and one answer document per student taking the Cumulative Assesslet.
- Ensure that you have a separate header for each grade and Cumulative Assesslet.

Scheduling

Cumulative Assesslets are formative so there is flexibility with how much time to provide for administration. However, the schedule may be adjusted to allow for shorter class periods or for using the Assesslet as an instructional tool. Cumulative Assesslets may be administered over multiple class periods if needed to accommodate schedules.

Materials

You will need to have one Cumulative Assesslet and one answer document per student taking the test.

- Students must use a #2 pencil to complete all sections of the Cumulative Assesslet. Have extra pencils available for students.
- Scratch paper for the Cumulative Assesslet may be provided to students. You may provide students with 1-2 sheets of scratch paper.

Note: You will return only completed student answer documents to GCA for scoring. The completed answer documents will be returned to you, along with the student scores, once scoring has been completed.
Paper Administration of Cumulative Assesslets

Using Cumulative Assesslets as an Instructional Tool

- Teachers may decide their students would benefit from administering Cumulative Assesslets in a small group or classroom setting. Teachers may provide guidance on how to approach items and may discuss strategies and concepts with the students.
- Teachers may work with students, providing strategies on how to address each type of item on the Cumulative Assesslet.
  - Modeling how to manage time while taking the test is important for students to experience prior to the assessments.
  - Modeling how to read questions carefully so students understand what the question is asking will benefit students in all test-taking experiences.
- Each Cumulative Assesslet was developed for a specific grade level. The items are aligned to grade level standards. However, teachers may elect to use Cumulative Assesslets from other grade levels to inform instruction for specific groups of students.

Note: If the Cumulative Assesslet is used for instructional purposes, student results will need to be evaluated differently than if it is administered independently to students. Teachers need to evaluate student results based on the type of administration.
Teacher Directions for Paper Administration

Cumulative Assesslets are formative so there is flexibility with how much time to provide for administration. You may adjust the directions based on the time allotted for the Cumulative Assesslet.

If you are reading items aloud to students, you will need a copy of the student booklet. Read only the words on the test.

Read aloud text in bold:

The purpose of today’s activity is to provide you with an opportunity to practice items similar to the kind you do in class and that you may see on assessments. Make sure you answer each question to the best of your ability.

Each of you received a Cumulative Assesslet booklet and an answer document. You must write using a #2 pencil.

Please look at your answer document. Complete the information in Section 1 (Student Name, Grade, Teacher, School, and System) at the top of the page.

Next, write your Last Name, First Name and Middle Initial in the blanks provided in Section 2. Then, bubble in the circles that correspond to the letters in your name.

You will be asked to answer twenty-five questions. For the first twenty-two questions, choose the one BEST answer by bubbling in the circle for the appropriate choice on your answer document. Then, for the final three questions, write your response on the lines provided in your answer document.

Turn to the “Directions” page in your booklet and read the directions silently while I read them aloud.

- Read all the directions for each question carefully and think about the answer.

- This Assesslet contains several items. Some questions are selected-response items where you choose the one BEST answer. Answer each question by choosing the correct answer and marking it on your answer document.

- Two questions are constructed-response items. Use the scratch paper provided as needed. Write your answer on the lines provided on your answer document labeled CR-1 and CR-2.

- One question is an extended-response item. Use the scratch paper provided as needed. Write your answer on the lines provided on your answer document labeled ER.

- Be sure to answer all of the questions on the Assesslet in the spaces provided on your answer document.
If you finish before time is called, you may go back and review your answers.

Are there any questions? You may begin.

At the end of the administration, say:

**Please stop working. Close your booklet.**

*Follow the directions provided by your administrator for the return of materials.*
Returning Materials for Scoring

- Transfer any typed responses to a student answer document.
- Remove all scratch paper, sticky notes, etc. from the student answer documents.
- Check that all answer documents have been correctly and completely bubbled with student information.
- Complete your Class / Teacher Header Form provided by GCA and bundle answer documents by class.
  - For the Class / Teacher Header Form include:
    - State System Code
    - State School Code
    - Grade
    - Subject
    - Test Code
  - You do **NOT** need to complete the sections for Unit/Quarter or Semester (see page 15 for an example of a completed header form).
  - The Test Code is unique to each Cumulative Assesslet. The Test Code for this Cumulative Assesslet is: [Redacted]
  - Ask your school test coordinator for the state system code and state school code if you are unsure.
- Send back ONLY completed answer documents and headers. Do **NOT** send back Cumulative Assesslet booklets, unused/blank answer documents, or scratch paper.
- Use **ONLY** paper bands to bind documents together, with Class / Teacher Header Forms on top, banded with answer documents.
- Do **NOT** use clips, rubber bands, or any fasteners as this could interfere with proper machine scoring.
- If materials are returned differently than what is specified in the return directions, it could delay scoring.
Shipping Materials

- Please return all completed Cumulative Assesslet answer documents to GCA, using the following address:

  Georgia Center for Assessment  
  1985 New Jimmy Daniel Road  
  Athens, GA 30606

- If you have any questions about administering the Cumulative Assesslet or returning materials for scoring, please feel free to call the GCA help desk at 888-392-8977.
- All scored Cumulative Assesslets will be returned to schools within ten business days of receipt at GCA.

Results

Data files will be provided electronically both at the school and teacher level by your administrator.
Learning Supports Science

The following science instructional practices and strategies will support student learning at each grade level. These strategies align with the Characteristics of Science relevant to all grade levels.

1. Model an openness and curiosity related to science in an effort to understand how the world works.
2. Model and practice the computation and estimation skills relative to analyzing data.
3. Model and practice using the tools and instruments required for observing, measuring, and manipulating the items used in scientific experiments and activities.
4. Model and practice the ideas of systems, models, changes, and scales as students explore scientific and technological matters.
5. Use a variety of texts to model asking and answering questions related to science.
6. Practice and model the communication of scientific ideas through the use of science vocabulary, procedures, and information.
7. Model and practice how to locate scientific information in a variety of reference sources (i.e. newspapers, magazines, and computer databases).
8. Model and practice how to question scientific claims and arguments effectively.
9. Model and practice how scientific knowledge is obtained and how to evaluate the information.
10. Model and practice formulating appropriate research questions and the scientific process.
11. Model and practice information specific to various areas of science (earth science, physical science, and life science).
12. Practice analyzing artifacts.
13. Have group discussions to engage in conversations about drawing conclusions and making generalizations about scientific information.
14. Model and practice determining the accuracy, relevancy, and consistency of a text to the specific purpose for science.
15. Model and practice how to cite and document source material.
Scoring

Scoring Process

All Cumulative Assesslets are scored by a trained GCA evaluator. Evaluators are trained to interpret each grade-level Cumulative Assesslet based on content, grade-level vocabulary, and exemplars developed by GCA staff. GCA scoring supervisors review a sample of all evaluators’ papers to ensure accuracy. The scoring rubrics used by the evaluators are intended to guide teachers as they interpret student responses and scores.

Each Cumulative Assesslet contains information regarding scoring and interpretation of student responses. Each Cumulative Assesslet has the following features: twenty-two selected-response items, two constructed-response items and one extended-response item.

If the Cumulative Assesslet was administered in a small group or classroom setting with support from the teacher to help students better understand how to approach the items in the Cumulative Assesslet, the individual results must be interpreted with caution. Since students received guidance, the results may not be a true indication of an individual student’s achievement. The information included may inform teachers in several ways:

- how individual students performed on the Cumulative Assesslet
- whether students were able to follow the format of the Cumulative Assesslet
- which item types and/or domains were most difficult for students

If the Cumulative Assesslet was administered following the GCA recommended timeline (i.e., a class period) and with the scripted directions, be aware that, while this may be similar to the format of the state assessment, it will not be exactly the same. The Cumulative Assesslet is not intended to predict performance on the EOG test. It is intended to provide information on student learning so that teachers can better target instruction.

The following section, Scoring Guide, provides scoring details about each item of the Cumulative Assesslet.
### Scoring Guide

Student scores are reported in the student data file (provided in Lennexctions for online administration or from your administrator for paper administrations). Additional information is provided for each item of the Cumulative Assesslet.

### Selected-Response Items

Each selected-response item is associate with an answer key. The answer keys provide the correct answer for each selected-response item, as well as rationales which contain explanations for the incorrect choices.

<table>
<thead>
<tr>
<th>Item</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The student may not understand that the age of a landform does not indicate whether it was created by a constructive or destructive force. The student may think that all destructive forces occur over millions of years. The student may assume that the age of a landform indicates its creation by a glacier millions of years ago.</td>
<td>The student may not understand that the height of a landform does not indicate whether it was created by a constructive or destructive force.</td>
<td>Correct Answer: The student understands that moving water can be a powerful destructive force. The student recognizes that moving water can carve a canyon.</td>
<td>The student may not understand that the presence of rock pieces does not always indicate a destructive force. The rocks could have been deposited by a constructive force or an organism.</td>
</tr>
<tr>
<td>Item</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>2</td>
<td>The student may be having difficulty analyzing why dunes or sand dunes are created by wind or wind erosion. Sand dunes, beaches, and dunes are all created by constructive processes that build up these land formations. The student may be confused because the sediment used to create these landforms may have been eroded from another location, but the actual landforms themselves were created when the sediment was deposited.</td>
<td>Correct Answer: The student understands that deposition is a constructive force. The student accurately identified that sand dunes, beaches, and dunes are all created by the deposition of sand by various forces.</td>
<td>The student may be having difficulty analyzing why dunes or sand dunes are created by wind or wind erosion. Sand dunes, beaches, and dunes are all created by constructive processes that build up these land formations. The student may be confused because the sediment used to create these landforms may have been eroded from another location, but the actual landforms themselves were created when the sediment was deposited.</td>
<td>The student may not be familiar with prominent landforms or the vocabulary relating to constructive and destructive forces. The student may not have attended to the fact that the sand was sorted by method of creation and assumed that the commonality was that all of the landforms could be altered by human or plant interventions.</td>
</tr>
<tr>
<td>3</td>
<td>Correct Answer: The student understands that valleys are created when water flows quickly down the landscape.</td>
<td>The student may not understand that Henry's model is interactive and will actively carve its own valley as the water travels downhill. A pre-made valley would defeat the purpose of the model.</td>
<td>The student may have misconceptions about the time it takes for large scale erosion to occur. The student may understand the make-up of the Earth's crust, but does not understand that it takes a long time to actually erode a rocky surface. This would not be reasonable for an interactive model.</td>
<td>The student may not understand that Henry's model is interactive and will actively carve its own valley as the water travels downhill making a spoon unnecessary.</td>
</tr>
<tr>
<td>Item</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>The student may not understand how to use an interactive model to collect data about how changes in surface features are caused by constructive forces. The student draws a conclusion based on background knowledge without considering all of the parts of the demonstration model.</td>
<td>The student may not understand how to use an interactive model to collect data about how changes in surface features are caused by constructive forces. The student is attending to the objects in the model instead of the actual demonstration. The student may not be comfortable drawing conclusions based on a demonstration.</td>
<td>The student may be having difficulty deciphering between data collected and interventions taken to prevent flooding. The student may have confused studying the role of constructive forces with altering its interaction during periods of heavy rain.</td>
<td><strong>Correct Answer:</strong> The student understands how to use an interactive model to draw conclusions based on a scientific demonstration. The student accurately observed the model and assessed the demonstration to determine that the model was demonstrating a constructive force.</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td><strong>Correct answer:</strong> The student understands that levees are a human intervention intended to prevent flooding.</td>
<td>The student may be having difficulty deciphering between data collected and interventions taken to prevent flooding. The student may have confused studying the role of constructive forces with altering its interaction during periods of heavy rain.</td>
<td>The student may not understand that beach nourishment addresses written issues. The student may have been confused because the ocean is a large body of water.</td>
<td><strong>Correct Answer:</strong> The student understands that levees are a human intervention intended to prevent flooding.</td>
</tr>
<tr>
<td>Item</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 6    | The student may not understand the data produced by a seismograph and how it is used by seismologists. The student may not understand that a seismograph is used to measure the vibrations of an actively occurring earthquake and cannot predict future earthquakes. While this is a goal of seismologists, the data from this tool would not answer this question. | The student may not understand the data produced by a seismograph and how it is used by seismologists. The student may not understand that a seismograph is used to measure the vibrations of an actively occurring earthquake or does not understand that earthquakes cannot yet be predicted. The student does not understand how an earthquake happens. | The student may not understand that a seismograph can be used to answer questions relating to the force of an earthquake. The student understands that it is unclear of what measurements it is taking. Correct Answer: The student understands that data collected from a seismograph can be used to help prepare for a future earthquake in a variety of ways but not predict its occurrence. |}
<p>| 7    | The student may not have experience conducting or drawing conclusion from scientific experiments. The student did not attend to the nature of the data being collected to determine the most logical conclusion. | The student may not understand that a physical change does not always require an active stimulus. The student may assume that the addition of heat or other active stimulus would yield no change. | The student may not be familiar with the ways in which water molecules experience physical change or has confused the terms increase and decrease. Correct Answer: The student understands that some physical changes happen naturally over time. The student understands the ways in which water molecules experience physical change. |</p>
<table>
<thead>
<tr>
<th>Item</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>The student may not be familiar with using scientific data to draw a conclusion or construct an argument. The student has drawn a conclusion that is beyond the scope of Victor’s data. While it is logical that the water from the cup would have evaporated, there is no data to support that conclusion from Victor’s work.</td>
<td>The student may not be familiar with using scientific data to draw a conclusion or construct an argument. The student may have based their answer on personal experience or the misconception that a larger piece of ice would take more time to melt than a smaller piece. The student is not attending to the nature of Victor’s experiment and the data he collected. Victor’s data did not measure melting time against size.</td>
<td>Correct Answer: The student understands how to review and evaluate experiment data to draw a conclusion or construct an argument about why water changes state.</td>
<td>The student may have some misconceptions about heat. The student may think the concept of heat applies only to temperatures that feel “hot.” Any temperature above absolute zero is a measurement of heat.</td>
</tr>
<tr>
<td>9</td>
<td>The student may not be comfortable interpreting data from a scientific experiment or is unclear of the differences between a chemical and physical change. The student has chosen an observation that could indicate either type of change but has not been able to accurately determine that a chemical change occurred.</td>
<td>The student may not be comfortable interpreting data from a scientific experiment or is unclear of the differences between a chemical and physical change. The student has identified stretching as a way in which the balloon can be changed but did not attend to the request for a chemical change. The student may not be attending to precision.</td>
<td>Correct Answer: The student correctly identified an observation that indicates a chemical change. The presence of bubbles and the change in the balloon’s shape indicate that a new substance was formed.</td>
<td>The student may not be comfortable interpreting data from a scientific experiment or is unclear of the differences between a chemical and physical change. The student has identified a way in which the water changed physically. The student may not be attending to precision.</td>
</tr>
<tr>
<td>Item</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>10</td>
<td>The student may not understand the ways in which static and current electricity are different. The student may have been misled by the picture of the girl with her hair sticking up in the air. The student may have experience generating static electricity by rubbing objects with wax.</td>
<td>Correct Answer: The student understands that one of the key differences between static and current electricity is the ability to harness current electricity.</td>
<td>The student may not understand the ways in which static and current electricity are different. The student may incorrectly think that current electricity is more powerful because it is used in homes.</td>
<td>The student may not understand the basic principles of electricity. The student may think that static electricity is more dangerous because of the lightning photograph, but both forms of electricity are equally dangerous.</td>
</tr>
<tr>
<td>11</td>
<td>Correct Answer: The student understands that the switch controls the flow of electricity by opening and/or closing the circuit.</td>
<td>The student may not understand how electricity flows through a basic circuit or may not be familiar with the components of a basic circuit. The student may think that the wrong controls the flow because it provides a path for the electricity to travel through the circuit.</td>
<td>The student may not understand how electricity flows through a basic circuit or may not be familiar with the components of a basic circuit. The student may think that the battery controls the flow because it is the power source. The student may not realize that a battery can’t vary its power output or turn itself on and off.</td>
<td>The student may not understand how electricity flows through a basic circuit or may not be familiar with the components of a basic circuit. The student may think that the bulb controls the power flow because it is frequently used as the tool for identifying if a circuit is working properly.</td>
</tr>
<tr>
<td>Item</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>12</td>
<td>The student may not understand the basic requirements to build a circuit. The student may not have been noted because the wire appears to create a complete loop. The student may not understand that all of the components of the path must be conductors to complete the circuit.</td>
<td>The student may not understand the basic requirements to build a circuit. The student may not have been noted because the wire appears to create a complete loop. The student may not understand that all of the components of the path must be conductors, and that the path must connect to both the positive and negative ends of the battery to complete the circuit.</td>
<td>Correct Answer: The student understands the necessary elements to create a simple series circuit.</td>
<td>The student may not understand the basic requirements to build a circuit. The student may have been noted because the wire appears to create a complete loop. The student may not understand that the path must connect to both the positive and negative ends of the battery to complete the circuit.</td>
</tr>
<tr>
<td>13</td>
<td>The student may not know which materials are conductors and which are insulators. The student may have assumed that if the switch was closed, the bulb would light. However, Samuel’s switch is made from rubber (an insulator), so it would not light the bulb whether it was open or closed. The student may not be attending to precision.</td>
<td>The student may not understand the basic elements of a circuit or may not be attending to precision. The student may have been noted by the fact that copper is a conductor. Moreover, the presence of the rubber case would break the circuit and not allow the bulb to light.</td>
<td>The student may not be attending to precision. The stimulus stated that the items given to the students were new, so it is unlikely that the battery would not be working.</td>
<td>Correct Answer: The student understands that insulators block the flow of electricity. The presence of a rubber switch would make the circuit unable to light the bulb.</td>
</tr>
<tr>
<td>Item</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>14</td>
<td>The student may not understand that bar magnets are permanent magnets and electromagnets are temporary because they are only magnets when connected to an electrical source.</td>
<td>Correct Answer: The student understands that bar magnets are permanent magnets and electromagnets are temporary because they are only magnets when connected to an electrical source.</td>
<td>The student may not understand that bar magnets cannot be strengthened and that electromagnets can be strengthened by increasing the number of coils or voltage.</td>
<td>The student may not understand that electromagnets also have a north and south pole.</td>
</tr>
<tr>
<td>15</td>
<td>The student may not understand that birds do not give live birth and do not live in water.</td>
<td>The student may not understand that fish do not live on land, do not give live birth, and are not warm-blooded.</td>
<td>Correct Answer: The student understands characteristics of mammals.</td>
<td>The student may not understand that reptiles do not live in water, are not warm-blooded, and do not give live birth.</td>
</tr>
<tr>
<td>16</td>
<td>The student may understand that snails and ants are invertebrates but may not understand that fish have a skeletal body and a backbone.</td>
<td>The student may understand that snails are invertebrates but may not understand that snakes and fish have a skeletal body and a backbone.</td>
<td>Correct Answer: The student understands that all three animals lack a skeletal body and a backbone.</td>
<td>The student may not understand that reptiles do not live in water, are not warm-blooded, and do not give live birth.</td>
</tr>
<tr>
<td>17</td>
<td>Correct Answer: The student understands how to ask questions to focus their scientific study. The student asked a question that would generate a comparison and contrast of all human behaviors.</td>
<td>The student may not be comfortable using questions to guide scientific study. The student may have been misled by the nature of contrasting evidence in the vis. diagram. However, the diagram shows more than just contrasting information so it is not the BEST choice for the essential question/refer.</td>
<td>The student may not be comfortable using questions to guide scientific study. The student may be focusing more on questions that could be answered by the diagram versus acting as the essential question/refer.</td>
<td>The student may not be comfortable using questions to guide scientific study or may not be attempting to mainstream. The student may have been focusing on questions that could be answered by the diagram versus acting as the essential question/refer. The diagram shows more than just contrasting information so it is not the BEST choice for the essential question/refer.</td>
</tr>
<tr>
<td>Item</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>18</td>
<td>The student may not understand an apple tree has seeds and is a flowering plant.</td>
<td>The student may not understand an apple tree is a flowering plant.</td>
<td>Correct Answer: The student understands characteristics of an apple tree.</td>
<td>The student may not understand that an apple tree is a vascular, has seeds, and is a flowering plant.</td>
</tr>
<tr>
<td>19</td>
<td>The student may not understand that although the hand lens does allow an object to be magnified, it does not produce the same details as a seen when using a microscope.</td>
<td>The student may not understand that a hand lens is not powerful enough to view the tiny details of the cell samples since they are not visible to the naked eye.</td>
<td>The student may not understand that a hand lens is not powerful enough to enhance objects that are not visible to the naked eye.</td>
<td>Correct Answer: The student understands that a hand lens is better for viewing a solid, opaque object like a stone since it does not allow light to pass through it. The student also understands that hand lenses are not powerful enough to view the tiny details of cells since they are not visible to the naked eye.</td>
</tr>
<tr>
<td>20</td>
<td>The student may understand many living things are not identical but may not understand that the skin cells look different because the organelles move around within the cell. The movement will cause the cells to not look identical.</td>
<td>The student may understand that materials travels in and out of the cell membrane but may not understand that the movement is not organelles and that is not the cause of cells to not appear identical.</td>
<td>The student may understand that organelles are constantly moving around but may not understand that the organelles are not located within the nucleus of the cell but rather the membrane.</td>
<td>Correct Answer: The student understands that the cells don’t appear identical because of the constant movement of organelles within the cytoplasm of the cells.</td>
</tr>
<tr>
<td>Item</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>21</td>
<td>The student understands that plants have chloroplasts, but may not understand that it doesn’t produce protein.</td>
<td>The student may understand that plant cells have cell walls and organelles to help produce food for the plant, but may not understand why cells help protect the plant and where it does not produce food.</td>
<td>The student may understand that plant cells have cell walls that help support and protect the cell, but may not understand that it is a cell wall and not a cell membrane.</td>
<td>Correct Answer: The student understands that plant cells have chloroplasts to help produce food for the plant and animal cells do not.</td>
</tr>
<tr>
<td>22</td>
<td>Correct Answer: The student understands that the production of yogurt and bread are two ways microorganisms are beneficial.</td>
<td>The student may understand that algae is beneficial but may not understand that amoeba contaminates food.</td>
<td>The student may understand that algae can produce oxygen but may not understand that this helps disperse organisms of oxygen. The student may understand that microorganisms are beneficial when used to produce cheese.</td>
<td>The student may understand that the production of oxygen is beneficial, but may not understand that the production of yeast in the body is not beneficial like the yeast used to make bread.</td>
</tr>
</tbody>
</table>
**Constructed-Response Items**

The Georgia standard(s) and depth of knowledge (DOK level) are provided for each item. An exemplar is provided, which contains a sample of an ideal response, indicative of the highest point designation. While the exemplars represent ideal responses, student responses will vary greatly. Also included is a sample of the rubric used by the evaluators to score the student responses. The 2-point rubric was used for Items 23 and 24 on this Cumulative Assesslet.

### Scoring Rubric and Exemplar – Item 23

<table>
<thead>
<tr>
<th>Point</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2     | *Response demonstrates a complete understanding of the standard.*  
Student earns 2 points for all parts correct and complete.  
**Exemplar Response**  
**Part A:** The student should identify bacteria, viruses, and/or fungi as types of microorganisms.  
**Part B:** The student should explain how, or describe a situation where, the bacteria, virus, and/or fungi they named in Part A have a negative effect on people or the environment.  
*Descriptions could include, but are not limited to:*  
- Bacteria can grow on food and when you eat it, it will make you sick.  
- Bacteria can grow almost anywhere. Many bacteria are poisonous and can make people or animals sick.  
- Bacteria can enter your body through your mouth, nose, or an open cut. It can cause you to get sick or create an infection.  
- Viruses are like germs. They can be spread by touching other people or in the air. They enter your body and make you sick.  
- You can catch a virus from other people. It attacks your body and you get a fever and don’t feel well. Like when you have the flu.  
- Fungi can grow on your body, like athlete’s foot, and hurt your skin.  
- strep throat is caused by the streptococcus bacteria. It makes your throat hurt and gives you a fever.  
- The flu is caused by the influenza virus. It will make you run a fever and feel achy.  
- Fungi can grow on plants and kill them. Lots of farmers lose crops this way. |
<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1     | *Response demonstrates a partial understanding of the standard.*  
Student earns 1 points for 1 part correct and complete.  
*OR*  
Student earns 1 point for 2 parts partially correct and partially complete. |
| 0     | *Response demonstrates a limited or no understanding of the standard.*  
Student earns 0 points for not meeting any of the requirements for score point 1. |
<table>
<thead>
<tr>
<th>Point</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2     | *Response demonstrates a complete understanding of the standard.*  
Student earns 2 points for all parts correct and complete.  
**Exemplar Response**  
**Part A:**  
[Sample text for Part A]  
*AND*  
**Part B:**  
[Sample text for Part B] |
| 1     | *Response demonstrates a partial understanding of the standard.*  
Student earns 1 points for 1 part correct and complete.  
**OR**  
Student earns 1 point for 2 parts partially correct and partially complete. |
| 0     | *Response demonstrates a limited or no understanding of the standard.*  
Student earns 0 points for not meeting any of the requirements for score point 1. |
Extended Response Item

The Georgia standard(s) and depth of knowledge (DOK level) are provided for this item. Also provided is an exemplar, which contains a sample of an ideal response, indicative of the highest point designation. While the exemplars represent ideal responses, student responses will vary greatly. Also included is a sample of the rubric used by the evaluators to score the student responses. The 4-point rubric below was used to score Item 25 on this Cumulative Asseslet.

<table>
<thead>
<tr>
<th>Point</th>
<th>Description</th>
</tr>
</thead>
</table>
| 4     | *Response demonstrates a complete understanding of the standard. Student earns 4 points for all parts correct and complete.*  

**Exemplar Response**  
**Part A:**  
*Current electricity is used to power homes and electronic devices AND*  
**Part B:**  
*Current electricity is used to power our homes and electronic devices because it is more dependable and easily controlled.*  
*Explanations could include, but are not limited to:*  
*Static electricity is too unpredictable and cannot be controlled by humans. When static electricity releases a current it is powerful but very short in duration, it would not last long enough to keep the power in our homes on.*  
*Current electricity can be easily controlled by humans. Since it requires a circuit, we can decide where it goes and how much power it holds. It also can flow for an unlimited amount of time where static electricity only has a quick burst of current. This way we can power things in our homes all day long.*  
*AND*  
**Part C:**  
*Would need to develop a way to predict, control, and extend the discharge of static electricity.*
<table>
<thead>
<tr>
<th>Score</th>
<th>Response demonstrates a sufficient understanding of the standard.</th>
<th>Response demonstrates a partial understanding of the standard.</th>
<th>Response demonstrates a limited understanding of the standard.</th>
<th>Response demonstrates a limited or no understanding of the standard.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Student earns 3 points for 2 parts correct and complete AND 1 part with either a correct answer or a correct process shown. OR Student earns 3 points for 2 parts correct and complete AND 1 part partially correct and partially complete.</td>
<td>Student earns 2 points for 2 parts correct and complete. OR Student earns 2 points for 1 part correct and complete AND 1 part with either a correct answer or a correct explanation shown AND 1 part partially correct and partially complete.</td>
<td>Student earns 1 point for 1 part correct and complete. OR Student earns 1 point for 1 part partially correct and partially complete AND 1 part with either a correct answer or a correct explanation shown.</td>
<td>Student earns 0 points for not meeting any of the requirements for score point 1.</td>
</tr>
</tbody>
</table>
Comment Codes

Comment codes are included for the constructed-response and extended-response items. The comments are shown in the tables below with full text.

The following comment codes are used when scoring Items 23 and 24 of this Cumulative Assesslet.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>You did not answer either part of the question correctly. Make sure you review all your answers before you finish.</td>
<td>You did not attempt all parts of the question. Make sure you try to provide an answer to all parts of the question.</td>
<td>You partially answered the question, but you did not fully answer either part. Make sure you try to fully answer all parts of the question.</td>
<td>You may not have understood the question. Make sure you read each question carefully.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>You fully answered one part correctly, but you made a mistake on the other part of the question. Make sure you review all your answers before you finish.</td>
<td>You fully answered one part correctly, but you did not attempt the other part of the question. Make sure you try to provide an answer to all parts of the question.</td>
<td>You partially answered both parts correctly, but you did not fully answer any part of the question. Make sure you try to fully answer all parts of the question.</td>
<td>You provided either a correct answer(s) or correct explanation(s) for both parts, but you did not fully answer any part of the question. Next time, be sure to provide a correct answer(s) AND explanation(s) for all parts of the question.</td>
<td>You provided either a correct answer(s) or correct explanation(s) for one part and partially answered another part. Make sure you try to fully answer all parts of the question.</td>
<td>You partially answered the question correctly, but your answer was not fully correct and complete. Make sure you try to fully answer each question.</td>
</tr>
<tr>
<td>2</td>
<td>You fully answered both parts of the question correctly. Great job!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The following comment codes are used when scoring Item 25 of this Cumulative Assesslet.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>You did not answer any part of the question correctly. Make sure you review all your answers before you finish.</td>
<td>You did not attempt all parts of the question. Make sure you try to provide an answer to each part of the question.</td>
<td>You partially answered the question, but you did not fully answer any part. Make sure you try to fully answer all parts of the question.</td>
<td>You may not have understood the question. Make sure you read each question carefully.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>You fully answered one part correctly, but you made a mistake on one or more of the other parts of the question. Make sure you review all your answers before you finish.</td>
<td>You fully answered one part correctly, but you did not attempt the other parts of the question. Make sure you try to provide an answer to all parts of the question.</td>
<td>You partially answered two parts correctly, but you did not fully answer any part of the question. Make sure you try to fully answer all parts of the question.</td>
<td>You provided either a correct answer(s) or correct explanation(s) for two parts, but you did not fully answer any part of the question. Next time, be sure to provide a correct answer(s) AND explanation(s) for all parts of the question.</td>
<td>You provided either a correct answer(s) or correct explanation(s) for one part and partially answered another part. Make sure you try to fully answer the question.</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2</td>
<td>You fully answered two parts correctly, but you made a mistake on the other part of the question. Make sure you review all your answers before you finish.</td>
<td>You fully answered two parts correctly, but you did not attempt the other part of the question. Make sure you try to provide an answer to all parts of the question.</td>
<td>You fully answered one part correctly, but you only partially answered the other parts of the question. Make sure you try to fully answer all parts of the question.</td>
<td>You fully answered one part correctly, but you provided either a correct answer(s) or explanation(s) for the other parts without fully completing those parts of the question. Make sure you try to fully answer all parts of the question.</td>
<td>You fully answered one part correctly and you provided either a correct answer(s) or explanation(s) and/or partially answered two other parts. Make sure you try to fully answer all parts of the question.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>You fully answered two parts correctly, and you partially answered one part correctly. Make sure you try to fully answer all parts of the question. Nice work!</td>
<td>You fully answered two parts correctly, and you provided either a correct answer(s) or explanation(s) for one part without fully completing that part of the question. Make sure you try to fully answer all parts of the question. Nice work!</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>You fully answered all parts of the question correctly. Great job!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>