**Affordable Learning Georgia Affordable Materials Grants  
Continuous Improvement Grants Final Report**

*(or Mini-Grants, for R17 and earlier)*

# General Information

Date: 5/12/2025

Grant Round: 25

Grant Number: M285

Institution Name(s): University of Georgia

Team Members (Name, Title, Department, Institutions if different, and email address for each): Sara Blankenship, Senior Lecturer, Chemistry, [sara.blankenship@uga.edu](mailto:sara.blankenship@uga.edu); Jessica Jensen, Lecturer, Chemistry, [jmjensen@uga.edu](mailto:jmjensen@uga.edu)

Project Lead: Sara Blankenship

Course Name(s) and Course Numbers: Basics of Chemistry, CHEM 1210

Final Semester of Project: Spring 2025

***If applicable to your project:***

Average Number of Students Per Course Section: 45 in the fall, 20-24 in the spring

Number of Course Sections Affected by Implementation of Revised Resources: 3-4 in the fall, 1 in the spring

Total Number of Students Affected by Implementation of Revised Resources: 150 in the fall, 20-24 in the spring

# Project Narrative

*Describe the course of your revision or ancillary creation project, including*

* *A summary of your project’s purpose, plan, and timeline.*
  + The goals of this project were to create multiple-choice homework and new recitation assignments for Chemistry 1210, Basics of Chemistry. The questions on the homework assignments were statistically analyzed by Gradescope’s Cronbach’s alpha and discriminatory index to determine if the difficulty level was appropriate. Qualtrics surveys asked students about if they felt the assignments helped them learn the material. The assignments were created in the summer and fall of 2024 and adjusted in spring 2025.
* *The original works which were revised or added to, with links. For example, if you revised an open textbook, give the title, author, and link.* 
  + N/A
* *A narrative description of how the project’s plan was carried out.*
  + I created the multiple-choice worksheets, assigned them to Chemistry 1210, and used the statistics to update them with advisement from Dr. Jensen. We met informally regularly to discuss questions and improvements. Dr. Jensen and I also discussed recitation ideas. She was send copies of recitations to read and edit, and the assignments were given to Chemistry 1210 students. The survey data from the first cohort suggested that they enjoyed and felt they learned more from real-world scenarios, so a couple more recitations that included safe experiments using common household items were created. The spring 2025 survey also reflected this, providing more information for future material revisions. Dr. Jensen and I met more than the two proposed times, and she was an instrumental part in finalizing the assignments.
* *Lessons learned, including anything you would do differently next time.*
  + It’s best to focus on one assignment type. I mentioned virtual labs in the form of videos, and I wasn’t able to acquire the reagents and space in times that worked with my schedule. It would be best to have several lab-based videos scripted to record at one time. I would also ask more specific survey questions to have qualitative information about what types of questions students thought helped them the most on the multiple-choice assignments.

# Materials Description

*Describe all the materials you have created or revised as part of this project. These descriptions may be used in the* [OpenALG](https://alg.manifoldapp.org/) *repository description field. Include the* [*open license your materials will be shared under*](https://creativecommons.org/share-your-work/)*—for most materials, this will be an Attribution 4.0 License (CC BY) as required in the Grants Request for Proposals.*

The multiple-choice worksheets cover specific chemistry topics. These worksheets are appropriate for a one-semester chemistry course or the first half of a one-year sequence and can be used as homework or in-class assignments. Attribution 4.0 License (CC BY)

Simulation-based activities and learning games cover several topics in an inquiry-based format to increase student engagement and are best used in an introductory, one-semester chemistry course. They can either be instructor or student-led, based on course format. Attribution 4.0 License (CC BY)

# Materials Links

*If you are hosting your materials in places other than OpenALG, please provide these links in this section. Otherwise, leave blank. Note: we cannot access D2L or Canvas links.*

# Future Plans

* *Describe any planned or actual papers, presentations, publications, or other professional activities that you expect to produce that reflect your work on this project.*

N/A

* *Describe any plans to revise or add to these materials in the future.*

The worksheets will be updated based on content changes or changing student needs. For example, CHEM 1210 students need more practice with ratios, so worksheets with more computational problems will be updated to reflect this. I also plan to create more recitation activities that explore chemistry concepts using common household items so they can explore ideas and learn how to gather data.