

CHEMISTRY



Image credit: Monkey Business Images, Shutterstock.com

Welcome to Chemistry! Our goal is to help you understand the ways your child will engage in science in this course. This letter will help you better understand the science expectations for chemistry and the supporting resources to provide ideas of how to work with your child at home throughout the course. For additional support and questions, please contact your child's chemistry teacher.

In the chemistry course, there are six content standards designed to engage your child in student-centered instruction to make sense of phenomena and design solutions to problems focused on chemistry concepts and principles. Your child will use science and engineering practices and crosscutting concepts to explore and explain the structure, properties, and conservation of matter. Your child will develop an understanding of how these practices, concepts, and principles can be used to make sense of new phenomena and solve new problems.

SCIENCE CONCEPTS

CHEMISTRY

Evaluate and develop models and construct explanations and arguments about the atom, an element's identity, nuclear fusion, isotopes and atomic mass, light emissions, and periodic trends and electron configurations to predict an element's properties.

Ask questions, plan investigations, develop models, and construct explanations and arguments to compare the types of bonds within and amongst compounds, the properties, naming system, and formulas of compounds, the structure and function of designed materials, and the thermal energy of a system as it relates to chemical bonds reacting.

Plan investigations, use mathematics and computational thinking, and construct explanations of limiting reactants, identify indicators and predict products of a chemical reaction, balance a chemical equation, and solve stoichiometry problems.

Plan and refine investigations and construct explanations and arguments about factors that affect the rate of a chemical reaction and the directional effect if those factors are altered.

Plan investigations, develop models, and construct explanations about kinetic molecular theory and molecular motion in chemical and physical processes.

Ask questions, plan investigations, develop and evaluate models, use mathematical and computational thinking, and communicate information about solutions in terms of factors that affect a solute's dissolving rate and concentration, compare solvation and dissociation, compare acids and bases, and acid-base neutralization.

How will your child be engaged in learning science?

Science and Engineering Practices

Students will engage in the following practices of scientific inquiry and engineering design to make sense of phenomena and solve problems in chemistry: asking questions and defining problems, developing and using models, constructing explanations and designing solutions, planning and carrying out investigations, engaging in argument from evidence, using mathematics and computational thinking, and obtaining, evaluating, and communicating information.

Crosscutting Concepts

Students will explore patterns, cause and effect, and systems and system models while examining chemistry ideas. Students will explore energy and matter, stability and change, and structure and function between energy and matter in Earth's systems.

Phenomena

Phenomena are the real-world observable events to which students can apply the science ideas, concepts, and practices. Some examples of phenomena include fireworks are not all the same color, instructions for baking a cake can differ depending on where you live, and colors of flowers can change from one season the next.

Getting to know your child's teacher is important, and communication with the teacher throughout the year will support your child's individual growth while learning chemistry. The resource links below are provided to help support learning at home as you engage your child in meaningful work while learning chemistry. If at any time you have additional questions or need to request additional support, please reach out to your child's chemistry teacher.



[GaDOE Inspire](#)



[Georgia Classroom](#)



[Georgia Standards](#)