The mission of Hermon High School is to prepare students for personal success in college, work, and community.

Bridge Year Chemistry

Instructors:
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This course introduces students to basic concepts of chemistry. In addition, the course provides a good background for those planning to take a major's level chemistry course such as CHY 115 (General Chemistry). Some topics studied include the periodic table, chemical reactions, phases of matter, and acids and bases. Labs will include practicing proper techniques and analyzing data by providing students with the opportunity to actively investigate scientific problems.
This is a lab-based course that will form an important background for all students to be further developed at the college level. Emphasis is placed on classroom participation, laboratory techniques, technical writing and problem solving.

Graduation Standards (the number of the standard is referenced in the performance indicators listed in each unit)

PHYSICAL SCIENCES STANDARD:
1: STRUCTURE, PROPERTIES AND INTERACTIONS OF MATTER

Unit 1	**Measurements and Calculations**
Summary	• Understand the scientific process and know the different parts of experimental design • Know the necessary units needed in measurement and how to convert such units when necessary.
Performance Indicators Assessed in Unit	8- (A-H) Engineering, Technology, and Application of Science Practices
Unit 2	**Matter**
Summary	• Understand the physical and chemical properties of matter. • Explain how different types of matter are characterized (elements, compounds, mixtures, etc.) • Understand different techniques to separate different mixtures.
Performance Indicators Assessed in Unit	1-A. Understand various patterns of the periodic table and use knowledge of these patterns to predict chemical and physical properties. 8- (A-H) Engineering, Technology, and Application of Science Practices
Unit 3	**Elements, atoms, and ions**
Summary	• Know the structure of an atom and the history of the structure

	● Understand the properties of different elements and how to find the information using the periodic table. ● Understand the different patterns in the periodic table ● Understand how electrons play a role in creating ions.
Performance Indicators Assessed in Unit	1-A. Understand various patterns of the periodic table and use knowledge of these patterns to predict chemical and physical properties. 8- (A-H) Engineering, Technology, and Application of Science Practices
Unit 4	**Chemical Bonds**
Summary	● Understand the different types of bonds and how each of them are created ● Be able to represent chemical bonds through Lewis dots ● Understand how to name such compounds and chemical bonds ● Understand electronegativity and how that places a role in bond polarity and dipole forces
Performance Indicators Assessed in Unit	1-A. Understand various patterns of the periodic table and use knowledge of these patterns to predict chemical and physical properties. 1-B. Understand that chemical and physical properties of matter result from the atoms and their interactions. 8- (A-H) Engineering, Technology, and Application of Science Practices
Unit 5	**Chemical Reactions**
Summary	● Understand the evidence that shows a chemical reaction ● Be able to determine different types of chemical reactions ● Be able to balance chemical reactions ● Be able to predict products of different chemical reactions
Performance Indicators Assessed in Unit	1-A. Understand various patterns of the periodic table and use knowledge of these patterns to predict chemical and physical properties. 1-B. Understand that chemical and physical properties of matter result from the atoms and their interactions. 1-C. Understand and apply the Law of Conservation of Mass. 8- (A-H) Engineering, Technology, and Application of Science Practices
Unit 6	**Modern Atomic Theory**
Summary	● Understand the history of the structure of the atom ● Understand the current structure of the atom as a wave model ● Understand how the atom has different energy levels and what happens to electrons when energy is absorbed or emitted ● Be able to explain the arrangement of electrons through electron configuration
Performance Indicators Assessed	1-A. Understand various patterns of the periodic table and use knowledge of these patterns to predict chemical and physical properties.

in Unit	1-B. Understand that chemical and physical properties of matter result from the atoms and their interactions. 8- (A-H) Engineering, Technology, and Application of Science Practices
Unit 7	**Reactions in Aqueous Solutions**
Summary	• Determine reactions that will form solids • Determine the reactions that will form water (acids and bases) • Determine reactions with metals and non-metals (oxidation-reduction)
Performance Indicators Assessed in Unit	1-B. Understand that chemical and physical properties of matter result from the atoms and their interactions. 8- (A-H) Engineering, Technology, and Application of Science Practices
Unit 8	**Liquids and Solids**
Summary	• Understand the different phase changes of water • Understand the energy required to change the different phases of matter • Explain how intermolecular forces play a role in phase changes
Performance Indicators Assessed in Unit	1-A. Understand various patterns of the periodic table and use knowledge of these patterns to predict chemical and physical properties. 1-B. Understand that chemical and physical properties of matter result from the atoms and their interactions. 8- (A-H) Engineering, Technology, and Application of Science Practices

Summative Assessments Retake

- Students have the opportunity to retake summative assessments.
- The student must submit a retake form to the teacher within five (5) school days of the date that the summative assessment score is reported to the student.
- The highest score a student can receive on a retake or late assessment is a 75.
- The score achieved on a retake will replace the current score (even if the score is lower).
- If a student is making up a test from an absence, that assessment will be graded up to 100.

Grading of Formative Assessments

- Formative assessments will count as 20% of the grade.
- Formative assessments may be scored on either a 0-100 scale or a 0-4 scale.
- The 0-4 scale will be represented in Power School as 4=100, 3=87, 2=77, and 1=67.

- The method of scoring of formative assessments will be determined by assignment.