



**Chemistry Syllabus
CHS Science Department**

Contact Information: Parents may contact me by phone, email, or visiting the school.

Teacher: Mrs. Lori Mathis

Email Address: lori.mathis@ccsd.us

Phone Number: (740) 702-2287 ext. 16272

Online: <http://www.ccsd.us/1/Home>

CCSD Vision Statement: The Chillicothe City School District will provide tomorrow's leaders with a high quality education by developing high expectations and positive personal relationships among students, staff, and community members.

CCSD Mission Statement: The Chillicothe City School District empowers students to learn, to lead, and to serve.

Course Description and Prerequisite(s) from Course Handbook:

Chemistry - 320

State Course #: 130301 (Level I)

Prerequisite: "C" average or better in Algebra I and Physical Science.

Elective

Grade: 10-12

Graded Conventionally

Credit: 1

Course Description:

This is a traditional chemistry course designed to help meet the needs of students who expect to take chemistry or related sciences at the college level. The course also meets the needs of the student who has an interest in general science topics who may not wish to pursue a science career. This course will include the study of the structure, properties, and composition of matter. Course content will include physical and chemical changes, formula writing, atomic theory and phases of matter. Exercises include a variety of laboratory activities and meet a lab course requirement for physical science for graduation. **There is a \$15 lab fee.**

Learning Targets: Defined below for clarity are the Unit Titles, Big Ideas of every Unit taught during this course, and the Essential Questions to be answered to better understand the Big Ideas. A student's ability to grasp and answer the Essential Questions will define whether or not he or she adequately learns and can apply the skills found in Big Ideas. This will ultimately define whether or not a student scores well on assessments administered for this course.

• **1st Quarter**

○ **Unit I Title: Chemical Foundations**

- **Big Idea #1:** I can construct atomic models to explain experimental evidence and make predictions.
 - *Essential Question #1: How do I diagram, label, and identify the parts of the atom?*
 - *Essential Question #2: What scientists are associated with the development of the modern atomic theory?*

- **Unit IV Title: Scientific Measurement**
 - **Big Idea #1:** I can use the metric system, significant digits, scientific notation, density, and factor label in chemistry.
 - *Essential Question #1: How do I identify significant digits and proper scientific notation in calculations?*
 - *Essential Question #2: How do I calculate using factor label?*
 - *Essential Question #3: What is density and how do I solve for density?*
 - **Big Idea #2:** I can use chemical quantities and the mole.
 - *Essential Question #1: How do I convert from moles to grams?*
 - *Essential Question #2: How do I convert from moles to particles?*
 - *Essential Question #3: How do I convert from grams to particles?*
- **MID-TERM EXAM**
- **3rd Quarter**
 - **Unit V Title: Chemical Reactions**
 - **Big Idea #1:** I can use patterns to classify chemical reactions.
 - *Essential Question #1: How do I classify and balance the 5 main types of chemical reactions?*
 - *Essential Question #2: How do I identify oxidation and reduction in a chemical equation?*
 - *Essential Question #3: What situations affect the rates of chemical reactions?*
 - **Big Idea #2:** I can distinguish different types of energy.
 - *Essential Question #1: How is energy transferred from one form to another?*
 - *Essential Question #2: How do reactions proceed and what is dynamic equilibrium?*
 - **Big Idea #3:** I can use the pH scale.
 - *Essential Question #1: How do I classify acids and bases?*
 - *Essential Question #2: How do I use the pH scale to identify acids and bases?*
 - **Unit VI Title: Gas Laws**
 - **Big Idea #1:** I can use the kinetic molecular theory to explain properties of gases (pressure, temperature, and volume) through the motion and interaction of particles.
 - *Essential Question #1: What are the factors that affect gases and how?*
 - *Essential Question #2: What is Kelvin temperature and how do I convert from Celsius to Kelvin?*
 - *Essential Question #3: How do I solve problems using Boyle's, Charles', and Gay-Lussac's Laws?*
 - **Big Idea #2:** I can solve problems for an unchanging gaseous system using the ideal gas equation. ($PV=nRT$)
 - *Essential Question #1: What is the ideal gas equation and what units do I use in this law?*
 - *Essential Question #2: How do I derive pressure, volume, number of moles, and temperature from the ideal gas equation?*
- **4th Quarter**
 - **Unit VII Title: Stoichiometry**
 - **Big Idea #1:** I can convert from one substance to another substance using a stoichiometric calculation.

- *Essential Question #1: How do I determine molar relationships?*
- *Essential Question #2: How do I convert from moles of one substance to moles of another using factor label?*
- *Essential Question #3: How do I convert between grams/particles of one substance to grams/particles of another using factor label?*
- **Big Idea #2:** I can prepare solutions.
 - *Essential Question #1: What is a solution?*
 - *Essential Question #2: How do I calculate molarity?*
- **Unit VIII Title: Nuclear Reactions.**
 - **Big Idea #1:** I can predict types of radioactive decay.
 - *Essential Question #1: What are the differences between alpha, beta, and gamma particles and positrons?*
 - *Essential Question #2: How do I calculate half-life?*
 - *Essential Question #3: What is the difference between fission and fusion?*
 - **Big Idea #2:** I can explain ways that radiation can affect the average person.
 - *Essential Question #1: How is radiation detected?*
 - *Essential Question #2: What types of things produce radiation?*
 - *Essential Question #3: Is radiation always harmful?*
- **END OF COURSE EXAM**

Course Materials:

- Google Chromebook
- Pens/pencils
- Notebook or binder
- Earbuds/headphones

Textbook:

TBA

Electronic Resources:

Scientific calculator

Course Expectations:

Students will be expected to attend class, participate in class discussions and note-taking, read all assignments, complete assignments for each unit, participate in lab activities, and write lab reports. Students will be expected to be active learners. Students will use quantitative information and algebra to analyze matter and understand the physical world.

Grading:

Unit Exams	50%
Assessments (Including: Quizzes, Essays, Labs, and Projects)	30%
Class work/Homework	20%

- Each nine week's grade comprises 20% of a student's final grade.
- The Mid-Term Exam and End of Course Exam each comprise 10% of a student's final grade.

Grading Scale:

The grading scale for Chillicothe High School can be found in the student handbook or online at <http://www.chillicothe.k12.oh.us/1/Content2/studenthandbook>.

Late Work: Late work will be subject to the Board-adopted policy on assignments that are submitted late (to be reviewed in class).

- Regardless of the absence type (excused or unexcused), students will be expected to make up work and be held accountable for learning all material they missed.
- Any student who is absent from school (excused or unexcused) will have one (1) additional day for every day they missed, to make up his/her work for full credit (100%).
- Any student who exceeds the allotted time to turn in an assignment for full credit may still turn in late work for partial credit.
 - Any student who turns in work up to 1 week late must at least be given the opportunity to earn 75% on that assignment.
 - Any student who turns in work between 1 and 2 weeks late must at least be given the opportunity to earn 60% on that assignment.
- The end of the 9 weeks is the cut off point for teachers to accept late work from students for full or partial credit, unless the teacher decides to give the student an incomplete for the 9 weeks due to extenuating circumstances.

Performance Based Section: Writing Assignments/Exams/Presentations/Technology

One or more of the End of Unit Exams may be Performance Based. According to the Ohio Department of Education, “Performance Based Assessments (PBA) provides authentic ways for students to demonstrate and apply their understanding of the content and skills within the standards. The performance based assessments will provide formative and summative information to inform instructional decision-making and help students move forward on their trajectory of learning.” Some examples of Performance Based Assessments include but are not limited to portfolios, experiments, group projects, demonstrations, essays, and presentations.

CHS Chemistry Course Syllabus

After you have reviewed the preceding packet of information with your parent(s) or guardian(s), please sign this sheet and return it to me so that I can verify you understand what I expect out of each and every one of my students.

Student Name (please print): _____

Student Signature: _____

Parent/Guardian Name (please print): _____

Parent/Guardian Signature: _____

Date: _____