Course Syllabus

Franklin High School	2020-2021
DIRECTIONS: For each course, complete the syllabus and share with your evaluating/supervising administrator **as a pdf** ("File-download-PDF document") by 9/28/20. Syllabi will be posted on the FHS website under your name for the public to view.	
Course Overview	
NOTE: For core classes, all elements of this section (except for name and contact information) are the same.	
Course Title: NGSS Chemistry	
Instructor Name: Britney Verissimo	Contact Info: bverissimo@pps.net
Grade Level(s): 10th	
Credit Type: science	# of credits per semester: 0.5
Prerequisites (if applicable): NGSS Physics	

General Course Description

This course is an introductory level chemistry course based on the Next Generation Science Standards (NGSS). The course is framed around the themes of patterns as well as energy and matter. In addition to the focus on the NGSS chemistry science content, scientific practices, engineering design, and social justice are emphasized throughout the course. Course content will include the structures of atoms and compounds, the Periodic Table of the Elements, chemical reactions and physical changes, gases, solutions, acids and bases, chemical quantities, kinetic theory, thermodynamics, and climate justice. The length and exact order of these units will shift over this semester due to timing factors. Content and skills learned in NGSS Physics is built upon during the course. Critical thinking, data analysis, and argumentation from evidence are also emphasized.

Prioritized National/State Standards:

Unit 1: Kinetic Molecular Theory
HS-PS3-2. Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects).

Unit 2: Periodic Table and Atomic Theory
HS-PS1-1. Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

Unit 3: Nuclear Chemistry
HS-PS1-8. Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.
HS-ESS1-1. Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy in the form of radiation.
HS-ESS1-3. Communicate scientific ideas about the way stars, over their life cycle, produce elements.

Unit 4: Bonding and Intermolecular Forces
HS-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.
HS-PS2-6. Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.
HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.

Unit 5: Chemical Reactions
HS-PS1-2. Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-7. Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 6: Stoichiometry
HS-PS1-2. Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.
HS-PS1-7. Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

Unit 7: Thermodynamics
HS-PS1-5. Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.
HS-PS1-6. Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.
HS-PS3-4. Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperatures are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).
HS-ESS3-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.

Course Details

Learning Expectations

Materials/Texts: N/A
The curriculum referenced for this course was created by a district team that follows the NGSS standards.

Course Content and Schedule:
Unit 1: Kinetic Molecular Theory
Unit 2: Periodic Table and Atomic Structure
Unit 3: Nuclear Chemistry
Unit 4: Bonding and Intermolecular Forces
Unit 5: Chemical Reactions
Unit 6: Stoichiometry
Unit 7: Thermodynamics

Due to the nature of distance learning in contrast with in-person schooling, the schedule of these units is still to be determined.

Differentiation/accessibility strategies and supports (TAG, ELL, SpEd, other): SpEd: Students with this designation will have assignments altered or lessened in accordance with their IEPs. Students' SpEd case managers will also be communicated with regularly to ensure the student's needs and accommodations are being met. Students will also be given the option to verbally complete assignments and assessments. ELL: Students who are English Language Learners will be given additional supports for learning, including but not limited to, access to teacher notes and sentence frames. Students will also be given the option to verbally complete assignments and assessments. TAG: Students with this designation will be given relevant extension and challenge activities that coordinate with concepts covered in each unit. These activities may include, but are not limited to, additional experiments to run at home, extension math concepts and activities to study and complete, and deeper thinking questions. Other: Students with other designations will be assessed as needs arise.
Safety issues and requirements (if applicable): Students may have the opportunity to conduct experiments in their home, with prior parental approval and with supervision. The students will complete a Safety in the Lab module before they are permitted to conduct any experiments at home. If/when we return to the classroom, students will be required to review the safety module and will be required to sign a Safety Contract, in accordance with district guidelines, before beginning any experiments in the classroom.
Classroom norms and expectations: This is a demanding science class which will require dedication to the classwork and participating. I expect students to be in class on time each day, participate in class discussions, small group work, and labs, and turn in completed assignments. However, especially given the nature of online learning, I understand that life happens and students may have to miss part or all of a class for various reasons. Please communicate with me if anything is going on that will keep you from coming to class. If part of a class or an entire class is missed, it is the student's responsibility to check Canvas, and then come meet with me during an asynchronous or tutorial session to get caught up. As a science classroom and community, we must all agree to and follow certain online norms and expectations. The norms and expectations that my chemistry classes came up with with the Soft Start weeks are: 1. Be respectful of classmates in online class sessions. This includes during video, in the chat box, in discussions and small groups. 2. Keep your mic muted when others are talking. Do not interrupt peers when they are talking. 3. Listen to peers without judgement. 4. Encourage and support classmates. Help people out who have questions. 5. Show up to class prepared and ready to participate. And don't give up!

Evidence of Course Completion

Assessment of Progress and Achievement:

The skills and knowledge you gain in chemistry over the course of the semester will be assessed in many different ways. For each category of assignments listed below, there will be a standard, or standards that you will be assessed on.
Some of the ways in which you will be assessed will include, but aren't limited to, the following: 1) classwork and daily participation (this may include warm-ups, discussions and small group work); 2) assessments (formative and summative); 3) projects (these may be individual or group); and 4) labs and lab reports (this is still "to be determined" since we are in an online-only setting right now).

Progress Reports/Report Cards (what a grade means):

Grades will be given based on proficiency scoring. The score given will state a student’s progress on a particular standard that is addressed in as assessment or other assignment.

4= highly proficient. This means the student has gone beyond the skills or knowledge that the standard has asked them to show or demonstrate.

3= proficient. The student has met the standard that is being graded.

2= close to proficient. The student is close to meeting the standard, but has not quite reached it.

1= developing proficiency/did not turn in. This means the student has not begun or turned in the assignment or assessment. There is no work completed, or not enough completed, to show any level of proficiency.

At the grading terms, the average proficiency score will be translated to a letter grade based on the following. This is the grade that will show on the student’s transcript.

A= 4.0-3.6

B= 3.5-3.0

C= 2.9-2.5

D= 2.4-2.0

F= <2.0

Career Related Learning Experience (CRLEs) and Essential Skills:
-Students will be able to develop models in which they identify and describe the relevant components, and will be able to describe the relationships between components in their models.
-Students will be able to develop an investigation plan and describe the data that will be collected and the evidence to be derived from the data. Students will also be able to describe the purpose of their investigations.
-Students will be able to collect and record data that can be used for various calculations, depending on the investigation.
-Students will be able to predict the patterns of behavior of different elements in the periodic table.

-Students will be able to describe how electronegativity produces different kinds of bonds.They will also be able to use atomic models to show how ionic compounds are formed. -Students will be able to explain and contrast the different kinds of bonds and molecules. -Students will be able to use stoichiometry to explain how atoms are rearranged during chemical reactions, and they will be able to use this to explain what atoms do in different chemical reactions. -Students will be able to use chemical reactions to design a solution to a real world problem. -Students will be able to read and analyze informational texts, graphs and data.
Communication with Parent/Guardian
What methods are used to communicate curriculum, successes, concerns, etc.? Email communication is the best way to reach me during distance learning (bverissimo@pps.net). I can also be reached via the Remind App. If you prefer phone communication, I am at Franklin for at least the morning synchronous classes. You may be able to reach me at my office number- my extension is x84328.
Personal Statement and other needed info
This will be my fifth year working in Portland Public Schools. I have held various roles, including paraeducator, student teacher, and now licensed teacher. This is my second year at Franklin, and I am so happy to be back! This 202-2021 school year I will be teaching Chemistry and Biology. I received my Bachelor of Science in Evolution and Ecology, with a minor in Environmental Policy, from the University of California, Davis in 2011. I attended Portland State University for graduate school and received my Master of Education in 2019. I love the outdoors and challenging myself athletically. I played soccer and basketball growing up, and in college I was on the rugby team at UCD. I mostly enjoy hiking and playing soccer these days. I also enjoy going to the beach to enjoy the peace that the ocean and sand gives me. During my free time, I love to read, cook and garden. My two cats, Willy (pictured above) and Donnie also keep me entertained! During school breaks, I love to travel and I also work for my aunt and uncle who own a farm in Aurora.