# Adult Basic Education Center
# High School Referral Program Science Laboratory Information

**Program Goal:** To offer students the full laboratory component of a life or physical science in order to meet A-G requirements necessary for acceptance into the California State University and University of California systems.

## Attendance:

- Lab hours are 4pm – 8pm on Tuesdays during the spring semester (March 1st-May 24th).
- You must arrive at the laboratory no later than 4pm to begin a lab. You might not finish all required labs and thus not complete the course if you fail to attend all four hours of laboratory on Tuesdays.
- You are required to complete all labs assigned during the semester(s) you are attending in order to receive credit for the course.
- Once you have completed the laboratory work you can spend the remainder of the time completing your science curriculum.

## Location:

- Building 11 Room 2304
- Park in **Lots B or D**. A valid student parking permit must be purchased and displayed in order to use student parking lots.

## Guidelines:

- Only 30 students can be in the lab at any given time; priority is given on a first come first serve basis.
- Use of the laboratory is a privilege and requires that your attitude is serious and mature at all times.
- You must follow all safety rules and scientific procedures at all times when using the laboratory (see attached safety rules).
- You will be asked to leave the lab if you do not adhere to all lab requirements. In order to return and complete the course you will need to schedule a parent teacher conference. If you are asked to leave a second time you will no longer be allowed to use the science lab and will not be able to complete the course.

## Schedule:

- Below is the lab schedule for the semester.
- You need to choose only one of the dates listed for each lab.
- These are the only dates the labs will be offered.
- Completing each lab on the earlier date is highly recommended to ensure you will be able to use the lab facility and finish your course.

| | **March 1 or April 12** | **March 8 or April 19** | **March 15 or April 26** | **March 22 or May 3** | **March 29 or May 10** | **April 5 or May 17** | **May 24** |
|---|---|---|---|---|---|---|---|
| **Chemistry A** | Physical/Chemical Properties/Changes and Now What Do I Do? | Flame Tests | Periodic Properties | Molecular Models | Types of Chemical Reactions | Counting by Measuring Mass | Flame Tests |
| **Chemistry B** | Balanced Chemical Equations | Molar Volume of a Gas | Solutions | Specific Heat of a Metal | Titration | Hydrocarbons | Balanced Chemical Equations |
| **Biology A** | Using a Compound Light Microscope and Modeling Natural Selection | Mitosis | Identifying Organic Compounds | Observing Osmosis and DNA Fingerprinting | Photosynthesis | Investigating Inherited Traits | Mitosis |
| **Biology B** | Fetal Pig Dissection | Particulates and Observing Nervous Responses | Breathing and Holding Your Breath | Fetal Pig Dissection | Investigating Bacterial Fermentation | Yeast Fermentation | Particulates and Observing Nervous Responses |

# 2011

# Science Schedule of Classes
## Winter-Spring

### JANUARY

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | |

### FEBRUARY

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | ~~21~~ | ~~22~~ | ~~23~~ | ~~24~~ | 25 | 26 |
| 27 | 28 | | | | | |

### MARCH

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | ~~31~~ | | |

### NOTES

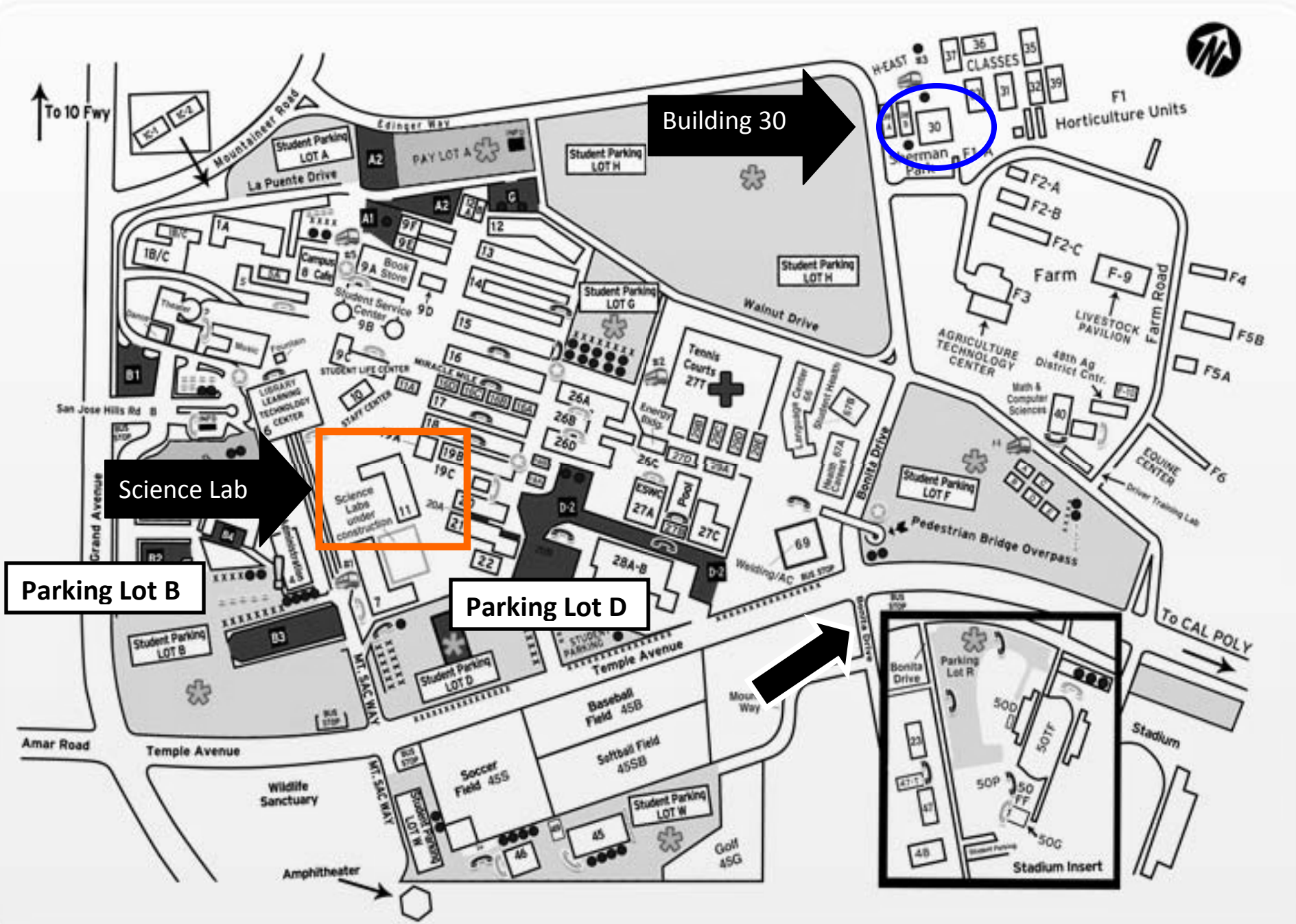
| | |
|---|---|
| Class Session | Bldg. 30 Room 32-4 |
| Lab Session (starts in March) | Bldg. 11 Room 2304 |
| Holidays/Breaks | ~~31~~ Class Not in Session |
| Winter Session | January 10 - February 17 |
| Spring Session | February 28 - May 26 |
| Last Day of Class | Thursday, May 26 |

### APRIL

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |

### MAY

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |


Building 30
Science Lab
Parking Lot B
Parking Lot D
To 10 Fwy
Mountaineer Road
Edinger Way
La Puente Drive
Student Parking LOT A
PAY LOT A
Student Parking LOT H
Walnut Drive
Student Parking LOT G
Student Parking LOT H
Tennis Courts 27T
Bonita Drive
Student Parking LOT F
Pedestrian Bridge Overpass
To CAL POLY
Stadium
Stadium Insert
Parking Lot R
Farm
F1 Horticulture Units
F2-A
F2-B
F2-C
F-9
F3
F4
F5B
F5A
F6
Farm Road
AGRICULTURE TECHNOLOGY CENTER
LIVESTOCK PAVILION
48th Ag District Cntr.
EQUINE CENTER
CLASSES
H-EAST
Sherman Park
San Jose Hills Rd
Grand Avenue
Science Labs under construction
Student Parking LOT B
Student Parking LOT D
Temple Avenue
Amar Road
Wildlife Sanctuary
Mt. SAC WAY
Baseball Field 45B
Softball Field 45SB
Soccer Field 45S
Student Parking LOT W
Golf 45G
Amphitheater
Bookstore
Student Service Center
Library Learning Technology Center
Student Life Center
Staff Center
Theater
Fountain
Campus Cafe
Book Store
Health Center
Energy Bldg
Language Center
Student Health
Pool
Welding/AC
Math & Computer Sciences
Driver Training Lab

# Safety Instructions for Science Students

When working in the science laboratory, you will have certain responsibilities that do not apply to other classrooms. You will be working with materials and apparatus, which, if handled carelessly or improperly, have the potential to cause injury. A science laboratory will only be a safe place if you are prepared, alert, and cautious. The following procedures must be followed:

## General Procedures

1. Prepare for each laboratory activity by reading all instructions before coming to class. Follow all procedures exactly. Make note of any changes in procedure given by the instructor.

2. Place books, purses, and backpacks in a designated storage area. Take only laboratory materials and notebooks into the working area.

3. Perform only those laboratory activities for which instructions and permission have been given.

4. Use only materials and equipment authorized by the instructor.

5. Keep work areas clean. Floors and aisles should be kept clear of equipment and materials.

6. Eating or drinking in the laboratory or from lab equipment is not permitted.

7. Confine long hair during a laboratory activity.

8. Student apparel should be appropriate for laboratory work. Long hanging necklaces, bulky jewelry, and excessive and bulky clothing should not be worn in the laboratory.

9. Roll long sleeves up above the wrist. Remove coats and bulky sweaters.

10. Wear appropriate eye protection, as directed by the instructor. Safety goggles must be worn during more hazardous experiments involving caustic/corrosive chemicals, heating of liquids, and other activities that may injure the eyes.

11. Know the location of the emergency shower, eye and face wash fountain, fire extinguisher, and exits.

12. Know the proper fire drill procedure.

13. Report any accident to the teacher immediately, no matter how minor. This includes any burn, scratch, cut, or corrosive liquid on skin or clothing.

## Equipment

14. Check labels and equipment instructions carefully. Be sure the correct items are being used in the proper manner.

15. Hot glass looks just like cold glass. Determine if an object is hot by bringing the back of your hand up close.

16. Use a mechanical pipette filler or bulb (never the mouth) with a pipette to measure small volumes of liquids.

17. When removing an electrical plug from its socket, pull the plug, not the electrical cord.

18. Light gas burners only as instructed by the teacher.

19. Use a burner with extreme caution. Keep your head and clothing away from the flame, and turn it off when not in use.

20. Do not bring any substance into contact with flame unless specifically told to do so.

21. When heating material in a test tube, do not look into the tube while heating it or point it in the direction of another student.

**Chemicals**

22. Never carry hot equipment or dangerous chemicals through a group of students.

23. Never taste or touch any chemicals with the hands unless specifically told to do so.

24. Always test for odor of chemicals by waving your hand above the container and sniffing cautiously from a distance.

25. Never pour reagents back into bottles, exchange stoppers of bottles, or lay stoppers on the table.

26. In case of a burn from an acid or alkali, wash the affected area immediately with plenty of running water. If in the eye, irrigate it for at least 15 minutes. Report the incident immediately.

27. Keep hands away from face, eyes, and body while using solutions, specimens, equipment or materials in the laboratory.

**Dissection**

28. Handle scalpels or razor blades with extreme care. Never cut material toward you; cut away from you.

29. Notify your teacher immediately if you cut yourself when in the laboratory.

**Disposal and Cleanup**

30. Do not throw used matches into the trashcan. A container should be provided for their disposal.

31. Dispose of litmus paper, wooden splints, toothpicks, and so on in the same manner as matches.

32. Throw all other solid waste in designated wastebaskets, jars, or other containers. Do not discard any solids such as glass tubing, cover slips, or sand into the sinks.

33. Hazardous or toxic liquids must be disposed of properly. Follow the directions of your instructor.

34. If an acid or base is spilled, report the spill to the instructor.

35. Remove all broken glass from work area and floor as soon as possible. Never handle broken glass with bare hands; use a dustpan and brush. Report broken thermometers to the instructor immediately.

36. Wash hands thoroughly at the end of the laboratory period.

**STUDENT:**
I agree to follow all of these safety instructions and I understand that if I do not follow these rules, I will not be allowed to use the laboratory. I also understand that it is not possible to obtain credit for this course without completing the laboratory requirement.

| Print name | Signature | Date |
|---|---|---|

**PARENT:**
I understand that my child must abide by all of these safety instructions and I am aware that if my child does not follow these rules, he/she will not be allowed to use the laboratory. I also understand that it is not possible for my child to obtain credit for this course without completing the laboratory requirement.

| Print name | Signature | Date |
|---|---|---|

**High School Referral Program**
**Biology Semester B**

Dear Parent or Guardian,

The Biology curriculum at Mt. San Antonio College contains a fetal pig dissection in order to comply with the standards required by the University of California system. This compliance allows students to receive college preparatory credits towards a high school diploma and to complete requirements necessary for acceptance into the Cal State/UC system.

According to California Education Code 32255, a student may opt for an alternative project in lieu of animal dissection. This may consist of a written report, construction of a model, and/or use of digital media to master the content. The assignments will be followed by an evaluation to demonstrate mastery of the anatomy and physiology of the animal. In no way will the student face negative ramifications by exercising his or her decision to refrain from dissection.

Two copies of this letter are provided. Please complete the bottom portion and return one copy of this document. You may keep one copy for your records. If you have any questions, please feel free to call the High School Office at (909) 274-4937.

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**Please check one**

- ❑ Both my child and I have read the letter and he/she will participate in the scheduled fetal pig dissection.

OR

- ❑ Both my child and I have read the letter and he/she will **not** participate in the scheduled fetal pig dissection. I understand that an alternative project will be provided.

**Student's Name** _____

**Student's Signature** _____ **Date** _____

**Parent's Signature** _____ **Date** _____

**Mt. San Antonio College**
**High School Referral**
**Course Syllabus**
**Chemistry A**

## Textbook

The textbook used for this course is Prentice-Hall Chemistry by Wilbraham, Staley, Matta, and Waterman. This book should be checked out of the High School office. (Building 30, Room 115)

## Course Overview

Chemistry is a sequential, hierarchical science that is descriptive and theoretical. Chemistry requires high-level problem-solving skills, such as designing experiments and solving word problems. For you to learn concepts of chemistry, you must learn new vocabulary, including the rules for naming simple compounds and ions. You will discover and be able to explain the nature of matter and its transformations when you study atomic and molecular structure, the effects of electron interaction, chemical bonds, and stoichiometry. Additionally you will study the properties of gases, acids and bases, and organic and inorganic compounds. You will also explore chemical systems as you study solutions, reactions, and nuclear processes.

**Chapters 1 – 9 and 22 – 25**

## Grading Policy

| | |
|---|---|
| Class Assignments | 20% |
| Laboratory | 20% |
| Tests and Quizzes | 50% |
| Final Exam | 10% |

The required work for each chapter will be divided into section objectives. Your assignments are attached to this course syllabus. You must earn a minimum 70% in order to receive credit for this class. Follow instructions carefully and turn in your assignments when completed **IN ORDER**. Tests will be assigned once class assignments, quizzes and projects are finished within each chapter. The instructional staff proctors chapter tests and quizzes.

You must show evidence of your work for all class assignments, laboratories, and exams. NO credit will be given for work without the proper steps shown on your answer sheets.

Students who engage in cheating or plagiarism are subject to immediate dismissal from the High School Program.

## STUDENT LEARNING GOALS

We will prepare all students to be:

| Effective Communicators who | Lifelong Learners who |
|---|---|
| • Acquire reading and listening skills<br>• Speak and write to be understood<br>• Work productively as part of a team<br>• Use technology to express ideas | • Apply strengths and improve weaknesses<br>• Learn and apply new information or skills<br>• Participate productively in the community |
| **Critical Thinkers who** | **Self-Directed Individuals who** |
| • Gather, organize, and analyze information from a variety of sources<br>• Form and express a logical opinion or conclusion<br>• Demonstrate problem-solving skills<br>• Apply knowledge to personal, professional, or academic situations | • Set goals, establish, and implement a plan of action<br>• Work independently<br>• Seek appropriate information and help |

# Class Assignment Rubric

| Types of Questions | Description | Point Value |
|---|---|---|
| **Section Assessment** | • All answers must be written as complete sentences. (Answers should not begin with pronouns)<br>• Answers must include all information asked.<br>• Examples, evidence, and reasons must be provided for each answer and opinion. | 2 points per question |
| **Laboratory** | • Completed pre-lab questions and laboratory questions<br>  o All answers must be written as complete sentences. (Answers should not begin with pronouns)<br>  o Answers must include all information asked.<br>  o Examples, evidence, and reasons must be provided for each answer and opinion | 20 points per lab |

**Chemistry: Semester A**
**High School Referral**

# Section 1.1 and Chapter 2: Introduction to Chemistry

**Standards: 6f**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINTS EARNED |
|---|---|---|---|---|---|
| **Section 1.1 Chemistry** | **1** | Read in textbook<br>Complete in Reading and Study Workbook | 7 – 11<br>1 – 3 | -----<br>10 total | |
| | **2** | Section Assessment #2, 4, and 7 | 11 | 6 total | |
| **Section 2.1 Properties of Matter** | **3** | Read in textbook<br>Complete in Reading and Study Workbook | 39 – 42<br>11 – 13 | -----<br>10 total | |
| | **4** | Section Assessment #1 – 6 and 8 | 42 | 14 total | |
| **Section 2.2 Mixtures** | **5** | Read in textbook<br>Complete in Reading and Study Workbook | 44 – 47<br>13 – 14 | -----<br>10 total | |
| | **6** | Section Assessment #11 and 14 | 47 | 4 total | |
| **Section 2.3 Elements and Compounds** | **7** | Read in textbook<br>Complete in Reading and Study Workbook | 48 – 52<br>15 – 17 | -----<br>10 total | |
| | **8** | Substances Activity | See Lab Notebook | 10 total | |
| | **9** | Section Assessment #20 – 22 and 24 – 27 | 52 | 14 total | |
| **Section 2.4** | **10** | Read in textbook<br>Complete in Reading and Study Workbook | 53 – 55<br>17 – 18 | -----<br>10 total | |
| | **11** | Section Assessment #28 – 33 | 55 | 12 total | |
| **Laboratory** | **12** | Physical and Chemical Properties and Changes | See Lab Notebook | 20 total | |
| **Assessment** | **13** | Chapter Exam | See Instructor | 100 total | |

**Chemistry: Semester A**
**High School Referral**

# Chapter 3: Introduction to Measurement
# Sections 3.1, 3.2, and 3.4

**Standards: 4e**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINT EARNED |
|---|---|---|---|---|---|
| **Section 3.1 Measurements and Their Uncertainty** | **14** | Read in textbook<br>Complete in Reading and Study Workbook | 63 – 72<br>19 – 22 | -----<br>10 total | |
| | **15** | Practice Problems #1 – 8 | 68 – 71 | 16 total | |
| | **16** | Section Assessment #13 – 15 | 72 | 6 total | |
| **Section 3.2 The International System of Units (SI)** | **17** | Read in textbook<br>Complete in Reading and Study Workbook | 73 – 79<br>22 – 25 | -----<br>10 total | |
| | **18** | Section Assessment #18 – 22 and 26 | 79 | 12 total | |
| **Section 3.4 Density** | **19** | Read in textbook<br>Complete in Reading and Study Workbook | 89 – 93<br>29 – 31 | -----<br>10 total | |
| | **20** | Section Assessment #50, 52, 54, 55, 56 | 93 | 10 total | |
| **In-class Laboratory** | **21** | Now What Do I Do? | 94 | 10 total | |
| **Assessment** | **22** | Chapter Exam | See Instructor | 100 total | |

**Chemistry: Semester A**
**High School Referral**

# Sections 4.1, 4.2, and 4.3: Introduction to the Atom
# Sections 25.1, 25.2, and 25.3: Nuclear Chemistry

**Standards: 1a, 1e, 1f, 1h, and 11a – 11f**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINTS EARNED |
|---|---|---|---|---|---|
| **Section 4.1 Defining the Atom** | **23** | Read in textbook<br>Complete in Reading and Study Workbook | 101 – 103<br>33 – 34 | -----<br>10 total | |
| | **24** | Section Assessment #1 and 2 | 103 | 4 total | |
| **Section 4.2 Structure of the Nuclear Atom** | **25** | Read in textbook<br>Complete in Reading and Study Workbook | 104 – 108<br>34 – 36 | -----<br>10 total | |
| | **26** | Section Assessment #8 – 11 and 14 | 108 | 10 total | |
| **Virtual Chemistry Lab** | **27** | Thomson Cathode Ray Tube Experiment | See Lab Notebook | 10 total | |
| **Section 4.3 Distinguishing Among Atoms** | **28** | Read in textbook<br>Complete in Reading and Study Workbook | 110 – 119<br>36 – 39 | -----<br>10 total | |
| | **29** | Charting the Particles Worksheet | See Lab Notebook | 10 total | |
| | **30** | Section Assessment #25 – 27, 30, 32, and 33 | 119 | 12 total | |
| **Section 25.1 Nuclear Radiation** | **31** | Read in textbook<br>Complete in Reading and Study Workbook | 799 – 802<br>267 – 269 | -----<br>10 total | |
| | **32** | Section Assessment #1 – 6 | 802 | 12 total | |
| **Section 25.2 Nuclear Transformations** | **33** | Read in textbook<br>Complete in Reading and Study Workbook | 803 – 808<br>269 – 271 | -----<br>10 total | |
| | **34** | Balance Nuclear Reactions Worksheet | See Lab Notebook | 10 total | |
| | **35** | Section Assessment #9 and 12 | 808 | 4 total | |
| **Section 25.3 Fission and Fusion of Atomic Nuclei** | **36** | Read in textbook<br>Complete in Reading and Study Workbook | 810 – 813<br>272 | -----<br>10 total | |
| | **37** | Section Assessment #17 and 20 | 813 | 4 total | |
| **Assessment** | **38** | Chapter Exam | See Instructor | 100 total | |

**Chemistry: Semester A**
**High School Referral**

# Chapters 5 and 6: Electrons and History of the Periodic Table

**Standards: 1a, 1b, 1c, and 1f – 1i**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINTS EARNED |
|---|---|---|---|---|---|
| **Section 5.1 Models of the Atom** | **39** | Read in textbook<br>Complete in Reading and Study Workbook | 127 – 132<br>43 – 44 | -----<br>10 total | |
| | **40** | Section Assessment #1 – 7 | 132 | 14 total | |
| **Section 5.2 Electron Arrangement in Atoms** | **41** | Read in textbook<br>Complete in Reading and Study Workbook | 133 – 136<br>45 – 46 | -----<br>10 total | |
| | **42** | Electron Configuration Worksheet | See Lab Notebook | 10 total | |
| **Section 5.3 Physics and the Quantum Mechanical Model** | **43** | Read in textbook<br>Complete in Reading and Study Workbook | 138 – 146<br>46 – 48 | -----<br>10 total | |
| | **44** | Section Assessment #16 – 18 | 146 | 6 total | |
| **Laboratory** | **45** | Flame Tests for Metals | See Lab Notebook | 20 total | |
| **Section 6.1 Organizing the Elements** | **46** | Read in textbook<br>Complete in Reading and Study Workbook | 155 – 160<br>51 – 52 | -----<br>10 total | |
| | **47** | Color a Periodic Table | See Lab Notebook | 10 total | |
| | **48** | Section Assessment #1 – 7 | 160 | 14 total | |
| **Section 6.2 Classifying the Elements** | **49** | Read in textbook<br>Complete in Reading and Study Workbook | 161 – 167<br>52 – 54 | -----<br>10 total | |
| | **50** | Section Assessment #11 – 15 | 167 | 10 total | |
| **Section 6.3 Periodic Trends** | **51** | Read in textbook<br>Complete in Reading and Study Workbook | 170 – 178<br>54 – 57 | -----<br>10 total | |
| | **52** | Section Assessment #16 – 23 | 178 | 16 total | |
| **Laboratory** | **53** | Periodic Properties | See Lab Notebook | 20 total | |
| **Assessment** | **54** | Chapter Exam | See Instructor | 100 total | |

**Chemistry: Semester A**
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# Sections 7.1, 7.2, 8.1, and 9.1 – 9.4: Compounds and Chemical Formulas

**Standards: 1d, 1g, and 2a – 2c**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINTS EARNED |
|---|---|---|---|---|---|
| **Section 7.1 Ions** | **55** | Read in textbook<br>Complete in Reading and Study Workbook | 187 – 193<br>59 – 61 | -----<br>10 total | |
| | **56** | Practice Problems #1 and 2<br>Section Assessment #3 – 11 | 193 | 22 total | |
| **Section 7.2 Ionic Bonds and Ionic Compounds** | **57** | Read in textbook<br>Complete in Reading and Study Workbook | 194 – 199<br>61 – 63 | -----<br>10 total | |
| | **58** | Ionic Compounds Worksheet | See Lab Notebook | 20 total | |
| | **59** | Section Assessment #15, 16, 18 – 20, and 22 | 199 | 12 total | |
| **Virtual Chemistry Lab** | **60** | Names and Formulas of Ionic Compounds | See Lab Notebook | 20 total | |
| **Section 8.1 Molecular Compounds** | **61** | Read in textbook<br>Complete in Reading and Study Workbook | 213 – 216<br>69 – 70 | -----<br>10 total | |
| | **62** | Section Assessment #2 – 6 | 216 | 10 total | |
| **Section 9.1 Naming Ions** | **63** | Read in textbook<br>Complete in Reading and Study Workbook | 253 – 258<br>79 – 81 | -----<br>10 total | |
| | **64** | Section Assessment #3, and 5 – 9 | 258 | 12 total | |
| **Section 9.2 Naming and Writing Formulas for Ionic Compounds** | **65** | Read in textbook<br>Complete in Reading and Study Workbook | 260 – 266<br>81 – 82 | -----<br>10 total | |
| | **66** | Practice Problems #11 – 13 | 263 and 265 | 6 total | |
| | **67** | Section Assessment #14 – 19 | 266 | 12 total | |
| **Section 9.3 Naming and Writing Formulas for Molecular Compounds** | **68** | Read in textbook<br>Complete in Reading and Study Workbook | 268 – 270<br>83 – 84 | -----<br>10 total | |
| | **69** | Section Assessment #20 – 25 | 270 | 12 total | |

| | | | | | |
|---|---|---|---|---|---|
| **Section 9.4**<br>**Naming and Writing Formulas for Acids and Bases** | **70** | Read in textbook<br>Complete in Reading and Study Workbook | 271 – 273<br>84 – 85;<br>86 – 87 | -----<br>10 total | |
| | **71** | Section Assessment #26 – 33 | 273 | 16 total | |
| **Assessment** | **72** | Chapter Exam | See Instructor | 100 total | |

**Chemistry: Semester A**
**High School Referral**

# Chapter 8: Covalent Bonding
# Sections 8.2, 8.3, and 8.4

**Standards: 1g, 2a – 2c, and 2f – 2h**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINT EARNED |
|---|---|---|---|---|---|
| **Section 8.2 The Nature of Covalent Bonding** | **73** | Read in textbook<br>Complete in Reading and Study Workbook | 217 – 229<br>71 – 73 | -----<br>10 total | |
| | **74** | Practice Problems #7 – 12 | 220 and 225 | 12 total | |
| | **75** | Section Assessment #13 – 15 and 21 | 229 | 8 total | |
| **Section 8.3 Bonding Theories** | **76** | Read in textbook<br>Complete in Reading and Study Workbook | 230 – 236<br>73 – 74 | -----<br>10 total | |
| | **77** | Section Assessment #23 – 26 | 236 | 8 total | |
| **In –class Laboratory** | **78** | Molecular Models | See Lab Notebook | 10 total | |
| **Section 8.4 Polar Bonds and Molecules** | **79** | Read in textbook<br>Complete in Reading and Study Workbook | 237 – 244<br>75 – 77 | -----<br>10 total | |
| | **80** | Section Assessment #32 | 244 | 2 total | |
| **Assessment** | **81** | Chapter Exam | See Instructor | 100 total | |

**Chemistry: Semester A**
**High School Referral**

# Sections 22.1 – 22.4, Section 23.1, and Sections 24.2 – 24.5: Organic Chemistry

**Standards: 2b and 10a – 10d**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINTS EARNED |
|---|---|---|---|---|---|
| **Section 22.1 Hydrocarbons** | **82** | Read in textbook<br>Complete in Reading and Study Workbook | 693 – 701<br>237 – 239 | -----<br>10 total | |
| | **83** | Section Assessment #7, 8, 10, 11 | 701 | 8 total | |
| **Section 22.2 Unsaturated Hydrocarbons** | **84** | Read in textbook<br>Complete in Reading and Study Workbook | 702 – 703<br>239 – 240 | -----<br>10 total | |
| | **85** | Section Assessment #15 and 17 | 703 | 4 total | |
| | **86** | Naming Hydrocarbons Worksheet | See Lab Notebook | 10 total | |
| **Section 22.3 Isomers** | **87** | Read in textbook<br>Complete in Reading and Study Workbook | 704 – 707<br>240 – 241 | -----<br>10 total | |
| | **88** | Section Assessment #20, 21, and 25 | 707 | 6 total | |
| **Section 22.4 Hydrocarbons** | **89** | Read in textbook<br>Complete in Reading and Study Workbook | 709 – 711<br>242 – 243 | -----<br>10 total | |
| | **90** | Section Assessment #26 – 29 | 711 | 8 total | |
| **Section 23.1 Introduction to Functional Groups** | **91** | Read in textbook<br>Complete in Reading and Study Workbook | 725 – 729<br>247 – 248 | -----<br>10 total | |
| | **92** | Section Assessment #1 – 4 | 768 | 8 total | |
| **Section 24.2 Carbohydrates** | **93** | Read in textbook<br>Complete in Reading and Study Workbook | 766 – 768<br>256 – 257 | -----<br>10 total | |
| | **94** | Section Assessment #8, 9, and 11 – 14 | 768 | 12 total | |
| **Section 24.3 Amino Acids and Their Polymers** | **95** | Read in textbook<br>Complete in Reading and Study Workbook | 769 – 773<br>257 – 259 | -----<br>10 total | |
| | **96** | Section Assessment #15 – 18 | 773 | 8 total | |

| | | | | | |
|---|---|---|---|---|---|
| **Section 24.4**<br>**Lipids** | **97** | Read in textbook<br>Complete in Reading and Study Workbook | 775 – 777<br>259 – 260 | -----<br>10 total | |
| | **98** | Section Assessment # 21, 22, and 24 | 777 | 6 total | |
| **Section 24.5**<br>**Nucleic Acids** | **99** | Read in textbook<br>Complete in Reading and Study Workbook | 778 – 785<br>260 – 262 | -----<br>10 total | |
| | **100** | Section Assessment #26 – 30 | 785 | 10 total | |
| **In-Class Laboratory** | **101** | Hydrocarbons: A Structural Study | See Lab Notebook | 20 total | |
| **Assessment** | **102** | Chapter Exam | See Instructor | 100 total | |
| **Semester Assessment** | **103** | Final Exam | See Instructor | 100 total | |

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**Course Syllabus**
**Chemistry B**

## Textbook

The textbook used for this course is Prentice-Hall Chemistry by Wilbraham, Staley, Matta, and Waterman. This book should be checked out of the High School office. (Building 30, Room 115)

## Course Overview

Chemistry is a sequential, hierarchical science that is descriptive and theoretical. Chemistry requires high-level problem-solving skills, such as designing experiments and solving word problems. For you to learn concepts of chemistry, you must learn new vocabulary, including the rules for naming simple compounds and ions. You will discover and be able to explain the nature of matter and its transformations when you study atomic and molecular structure, the effects of electron interaction, chemical bonds, and stoichiometry. Additionally you will study the properties of gases, acids and bases, and organic and inorganic compounds. You will also explore chemical systems as you study solutions, reactions, and nuclear processes.

**Chapters 10 – 19**

## Grading Policy

| | |
|---|---|
| Class Assignments | 20% |
| Laboratory | 20% |
| Tests and Quizzes | 50% |
| Final Exam | 10% |

The required work for each chapter will be divided into section objectives. Your assignments are attached to this course syllabus. You must earn a minimum 70% in order to receive credit for this class. Follow instructions carefully and turn in your assignments when completed **IN ORDER**. Tests will be assigned once class assignments, quizzes and projects are finished within each chapter. The instructional staff proctors chapter tests and quizzes.

You must show evidence of your work for all class assignments, laboratories, and exams. NO credit will be given for work without the proper steps shown on your answer sheets.

Students who engage in cheating or plagiarism are subject to immediate dismissal from the High School Referral Program.

## STUDENT LEARNING GOALS

We will prepare all students to be:

| Effective Communicators who | Lifelong Learners who |
|---|---|
| • Acquire reading and listening skills<br>• Speak and write to be understood<br>• Work productively as part of a team<br>• Use technology to express ideas | • Apply strengths and improve weaknesses<br>• Learn and apply new information or skills<br>• Participate productively in the community |
| **Critical Thinkers who** | **Self-Directed Individuals who** |
| • Gather, organize, and analyze information from a variety of sources<br>• Form and express a logical opinion or conclusion<br>• Demonstrate problem-solving skills<br>• Apply knowledge to personal, professional, or academic situations | • Set goals, establish, and implement a plan of action<br>• Work independently<br>• Seek appropriate information and help |

# Class Assignment Rubric

| Types of Questions | Description | Point Value |
|---|---|---|
| **Section Assessment** | • All answers must be written as complete sentences. (Answers should not begin with pronouns)<br>• Answers must include all information asked.<br>• Examples, evidence, and reasons must be provided for each answer and opinion. | 2 points per question |
| **Laboratory** | • Completed pre-lab questions and laboratory questions<br>o All answers must be written as complete sentences. (Answers should not begin with pronouns)<br>o Answers must include all information asked.<br>o Examples, evidence, and reasons must be provided for each answer and opinion | 20 points per lab |

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# Chapter 10: The Mole

**Standards: 3b, 3c, 3d**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINTS EARNED |
|---|---|---|---|---|---|
| **Section 10.1 The Mole: A Measurement of Matter** | **1** | Read in textbook<br>Complete in Reading and Study Workbook | 287 – 296<br>91 – 93 | -----<br>10 total | |
| | **2** | Practice Problems #1 – 8 | 289 – 296 | 16 total | |
| | **3** | Section Assessment #9 – 15 | 296 | 14 total | |
| **Section 10.2 Properties of Matter** | **4** | Read in textbook<br>Complete in Reading and Study Workbook | 297 – 303<br>93 – 94 | -----<br>10 total | |
| | **5** | Practice Problems #16 – 23 | 298 – 302 | 16 total | |
| | **6** | Section Assessment #24 – 30 | 303 | 14 total | |
| **Virtual Chemistry Lab** | **7** | Counting by Measuring Mass | See Lab Notebook | 20 total | |
| **Section 10.3 Percent Composition and Chemical Formulas** | **8** | Read in textbook<br>Complete in Reading and Study Workbook | 305 – 312<br>95 – 111 | -----<br>10 total | |
| | **9** | Practice Problems #32 – 39 | 306 – 312 | 16 total | |
| | **10** | Section Assessment #40 – 46 | 312 | 14 total | |
| **Assessment** | **11** | Chapter Exam | See Instructor | 100 total | |

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# Sections 11.1 and 11.2: Chemical Equations/Chemical Reactions

**Standards: 3a**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINT EARNED |
|---|---|---|---|---|---|
| **Section 11.1 Measurements and Their Uncertainty** | **12** | Read in textbook<br>Complete in Reading and Study Workbook | 321 – 329<br>113 – 115 | -----<br>10 total | |
| | **13** | Practice Problems #1 – 6 | 324 – 328 | 12 total | |
| | **14** | Section Assessment #7 – 12 | 329 | 12 total | |
| **Section 11.2 Types of Chemical Reactions** | **15** | Read in textbook<br>Complete in Reading and Study Workbook | 330 – 339<br>115 – 117 | -----<br>10 total | |
| | **16** | Practice Problems #13 – 21 | 331 – 337 | 18 total | |
| | **17** | Section Assessment #22 – 27 | 339 | 12 total | |
| **Laboratory** | **18** | Types of Chemical Reactions | See Lab Notebook | 20 total | |
| **Assessment** | **19** | Chapter Exam | See Instructor | 100 total | |

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# Chapter 12: Stoichiometry

**Standards: 3a and 3e**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINTS EARNED |
|---|---|---|---|---|---|
| **Section 12.1 The Arithmetic of Equations** | **20** | Read in textbook<br>Complete in Reading and Study Workbook | 353 – 358<br>127 – 128 | -----<br>10 total | |
| | **21** | Practice Problems #1 – 4 | 355 – 358 | 8 total | |
| | **22** | Section Assessment # 5 – 10 | 358 | 12 total | |
| **Section 12.2 Chemical Calculations** | **23** | Read in textbook<br>Complete in Reading and Study Workbook | 359 – 366<br>129 – 131 | -----<br>10 total | |
| | **24** | Practice Problems #11 – 20 | 360 – 366 | 20 total | |
| | **25** | Section Assessment #21 – 24 | 366 | 8 total | |
| **Virtual Chemistry Lab** | **26** | Analysis of Baking Soda | See Lab Notebook | 20 total | |
| **Section 12.3 Limiting Reagent and Percent Yield** | **27** | Read in textbook<br>Complete in Reading and Study Workbook | 368 - 371<br>131 – 135 | -----<br>10 total | |
| | **28** | Practice Problems #25 – 28 | 370 – 371 | 8 total | |
| **Assessment** | **29** | Chapter Exam | See Instructor | 100 total | |

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# Section 13.1 and Chapter 14: Gas Laws

**Standards: 4a – 4g**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINTS EARNED |
|---|---|---|---|---|---|
| **Section 13.1**<br>**The Nature of Gases** | **30** | Read in textbook<br>Complete in Reading and Study Workbook | 385 – 389<br>137 – 139 | -----<br>10 total | |
| | **31** | Practice Problems #1 – 2 | 387 | 4 total | |
| | **32** | Section Assessment #3 – 7 | 389 | 10 total | |
| **Section 14.1**<br>**Properties of Gases** | **33** | Read in textbook<br>Complete in Reading and Study Workbook | 413 – 417<br>147 – 149 | -----<br>10 total | |
| | **34** | Section Assessment #1 – 6 | 417 | 12 total | |
| **Section 14.2**<br>**The Gas Laws** | **35** | Read in textbook<br>Complete in Reading and Study Workbook | 418 – 425<br>149 – 151 | -----<br>10 total | |
| | **36** | Practice Problems #7 – 14 | 419 – 424 | 16 total | |
| | **37** | Section Assessment #15 – 22 | 425 | 16 total | |
| **Laboratory** | **38** | Molar Volume of a Gas | See lab notebook | 20 total | |
| **Section 14.3**<br>**Ideal Gases** | **39** | Read in textbook<br>Complete in Reading and Study Workbook | 426 – 429<br>152 – 153 | -----<br>10 total | |
| | **40** | Practice Problems #23 – 24 | 427 | 4 total | |
| | **41** | Section Assessment #25 – 30 | 429 | 12 total | |
| **Section 14.4**<br>**Gases: Mixtures and Movements** | **42** | Read in textbook<br>Complete in Reading and Study Workbook | 432 – 436<br>154 – 157 | -----<br>10 total | |
| | **43** | Practice Problems #31 – 32 | 434 | 4 total | |
| | **44** | Section Assessment #33 – 38 | 436 | 12 total | |
| **Assessment** | **45** | Chapter Exam | See instructor | 100 total | |

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# Sections 15.2, 16.1 and 16.2: Solutions

**Standards: 6a – 6d**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINTS EARNED |
|---|---|---|---|---|---|
| **Section 15.2 Homogenous Aqueous Systems** | **46** | Read in textbook<br>Complete in Reading and Study Workbook | 450 – 456<br>161 – 164 | -----<br>10 total | |
| | **47** | Section Assessment #8 – 13 | 457 | 12 total | |
| **Virtual Chemistry Lab** | **48** | Electrolytes | See Lab Notebook | 20 total | |
| **Section 16.1 Properties of Solutions** | **49** | Read in textbook<br>Complete in Reading and Study Workbook | 471 – 477<br>167 – 169 | -----<br>10 total | |
| | **50** | Section Assessment #3, 5 and 6 | 477 | 6 total | |
| **Section 16.2 Concentrations of Solutions** | **51** | Read in textbook<br>Complete in Reading and Study Workbook | 480 – 486<br>169 – 171;<br>175 – 178 | -----<br>10 total | |
| | **52** | Practice Problems #8 – 15 | 481 – 485 | 16 total | |
| | **53** | Section Assessment #16 – 23 | 486 | 16 total | |
| **Laboratory** | **54** | Factors Affecting Solution | See Lab Notebook | 20 total | |
| **Assessment** | **55** | Chapter Exam | See Instructor | 100 total | |

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# Sections 17.1 – 17.3: Thermodynamics
# Sections 18.1 and 18.2: Equilibrium and Kinetics

**Standards: 7a – 7d**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINT EARNED |
|---|---|---|---|---|---|
| **Section 17.1 The Flow of Energy – Heat and Work** | **56** | Read in textbook<br>Complete in Reading and Study Workbook | 505 – 510<br>183 – 185 | -----<br>10 total | |
| | **57** | Practice Problems #1 – 4 | 507 and 510 | 8 total | |
| | **58** | Section Assessment #5 – 11 | 510 | 14 total | |
| **Section 17.2 Measuring and Expressing Enthalpy Changes** | **59** | Read in textbook<br>Complete in Reading and Study Workbook | 511 – 517<br>185 – 187 | -----<br>10 total | |
| | **60** | Practice Problems #12 – 15 | 513 and 516 | 8 total | |
| | **61** | Section Assessment #16 – 20 | 517 | 10 total | |
| **Laboratory** | **62** | The Specific Heat of a Metal | See Lab Notebook | 20 total | |
| **Virtual Chemistry Lab** | **63** | Heat of Combustion | See Lab Notebook | 20 total | |
| **Section 17.3 Heat in Changes of State** | **64** | Read in textbook<br>Complete in Reading and Study Workbook | 520 – 526<br>187 – 189<br>191 – 192 | -----<br><br>10 total | |
| | **65** | Practice Problems #21 – 26 | 521 – 526 | 12 total | |
| | **66** | Section Assessment #27 – 31 | 526 | 10 total | |
| **Section 18.1 Rates of Reactions** | **67** | Read in textbook<br>Complete in Reading and Study Workbook | 541 – 547<br>193 – 195 | -----<br>10 total | |
| | **68** | Section Assessment #1 – 5 | 547 | 10 total | |
| **Section 18.2 Reversible Reactions and Equilibrium** | **69** | Read in textbook<br>Complete in Reading and Study Workbook | 549 – 559<br>196 – 197 | -----<br>10 total | |
| | **70** | Practice Problems #6 – 10 | 555 – 558 | 10 total | |
| | **71** | Section Assessment #11 – 16 | 559 | 12 total | |
| **Assessment** | **72** | Chapter Exam | See Instructor | 100 total | |

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# Sections 19.1 and 19.2: Acids and Bases

**Standards: 5a – 5f**

| READING SELECTION | ASSIGNMENT # | DESCRIPTION | PAGES | POINTS | POINTS EARNED |
|---|---|---|---|---|---|
| **Section 19.1 Acid-Base Theories** | **73** | Read in textbook<br>Complete in Reading and Study Workbook | 587 – 593<br>209 – 211 | -----<br>10 total | |
| | **74** | Practice Problems #1 and 2<br>Section Assessment #3 – 8 | 593 | 16 total | |
| **Section 19.2 Hydrogen Ions and Acidity** | **75** | Read in textbook<br>Complete in Reading and Study Workbook | 594 – 604<br>211 – 214 | -----<br>10 total | |
| | **76** | Practice Problems #9 – 16 | 596 – 601 | 16 total | |
| | **77** | Section Assessment #17 – 21 | 604 | 10 total | |
| **Laboratory** | **78** | Acid – Base Titrations | See Lab Notebook | 20 total | |
| **Assessment** | **79** | Chapter Exam | See Instructor | 100 total | |
| **Semester Assessment** | **80** | Final Exam | See Instructor | 100 points | |