

# BCS Chemistry

## Pacing Guide

(In Wks.)	CHS	BCHS	RCHS	RHS
Unit 1	4	4	6	6
Unit 2	4	4	8	8
Unit 3	4	4	9	9
Unit 4	4	4	9	9
Unit 5	2	2	4	4

Possible Benchmarks: After Units, 1, 2, 4

### Unit 1: Energy

<b>HS-PS3-1.</b> Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.	<b>Priority Standard</b>
<b>HS-PS3-4.</b> Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).	<b>Priority Standard</b>

## Unit 2: Atomic Structure

<b>HS-PS1-1.</b> 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.	<b>Priority Standard</b>
<b>HS-PS1-8.</b> 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.	<b>Priority Standard</b>
<b>HS-PS4-4.</b> Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.	<b>Supporting Standard</b>

## Unit 3: Intermolecular and Intramolecular Forces

<b>HS-PS1-3.</b> 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.	<b>Priority Standard</b>

## Unit 4: Chemical Reactions

<b>HS-PS1-2.</b> 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.	<b>Priority Standard</b>

**HS-PS1-7.** Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

**Priority Standard**

### **Unit 5: Rates and Stability of Chemical Reactions**

**HS-PS1-4.** Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

**Priority Standard**

**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.

**Priority Standard**

**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.

**Priority Standard**