

## Science – Chemistry

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 1: Fundamental Concepts of Matter

This unit focuses on fundamental concepts of matter, including physical and chemical properties and physical and chemical changes in matter.

Students investigate properties of solids, liquids, and gases such as structure, shape, volume, and compressibility.

They distinguish between extensive and intensive properties and apply these properties to classify matter as pure substances or mixtures.

2021		August				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
01	02	03	04	05	06	07
Enrichment Opportunities						
08	09	10	11	12	13	14
Enrichment Opportunities						
15	16	17	18	19	20	21
Teacher Service Days (no students)		Teacher Prep Day (no students)		Teacher Service Days (no students)		
22 C1W1	23 Unit 1 (10 45-min. class periods)	24	25	26	27	28
29 C1W2	30 Unit 1 (10 45-min. class periods)	31	01	02	03	04
05	06	<b>Notes:</b> Aug. 16-20 - Teacher Service Days (no students)				

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#### Units of Instruction

##### Unit 1: Fundamental Concepts of Matter

This unit focuses on fundamental concepts of matter, including physical and chemical properties and physical and chemical changes in matter. Students investigate properties of solids, liquids, and gases such as structure, shape, volume, and compressibility. They distinguish between extensive and intensive properties and apply these properties to classify matter as pure substances or mixtures.

##### Unit 2: The Periodic Table

This unit focuses on the concept that properties of the elements are periodic functions of their atomic numbers. Students explain how an element's properties can be explained by its placement on the Periodic Table. Students also investigate and describe general trends on the Periodic Table such as atomic and ionic radii, electronegativity, and ionization energy.

2021		September				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29 C1W2	30	31	01 Unit 1 (10 45-min. class periods)	02	03	04
05 C1W3	06 Labor Day	07 • Extend • Review • Assess • Reteach	08	09 Unit 2 (12 45-min. class periods)	10	11
12 C1W4	13 Unit 2 (12 45-min. class periods)	14	15	16 Fall Holiday	17 Teacher Service Day (no students)	18
19 C1W5	20 Unit 2 (12 45-min. class periods)	21	22	23	24	25
26 C1W6	27 Unit 2 (12 45-min. class periods)	28	29 • Extend • Review • Assess • Reteach	30	01	02
03	04	<b>Notes:</b> Sept. 6 - Labor Day Sept. 16 - Fall Holiday Sept. 17 - Teacher Service Day (no students)				

## Science – Chemistry

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#### Units of Instruction

##### Unit 3: Atomic Chemistry

In this unit, students understand the experiments and conclusions used in the historical development of modern atomic theory. Understanding how electrons are arranged in atoms will lead to the next unit on chemical bonding.

##### Unit 4: Combining Elements: Types of Bonds

Elements bond to form compounds based on electron configurations. Students investigate different types of bonds including ionic, covalent, and metallic.

2021		October				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26 C1W6	27	28	29	30	01 • Extend • Review • Assess • Reteach	02 <b>END OF CYCLE 1</b>
03 C2W1	04 Teacher Service Day (no students)	05 Unit 3 (8 45-min. class periods)	06	07	08	09
10 C2W2	11 Unit 3 (8 45-min. class periods)	12	13	14	15 • Extend • Review • Assess • Reteach	16
17 C2W3	18 • Extend • Review • Assess • Reteach	19 Unit 4 (12 45-min. class periods)	20	21	22	23
24 C2W4	25 Unit 4 (12 45-min. class periods)	26	27	28	29	30
31	01	<b>Notes:</b> Oct. 4 - Teacher Service Day (no students)				

## Science – Chemistry

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 4: Combining Elements: Types of Bonds

Elements bond to form compounds based on electron configurations. Students investigate different types of bonds including ionic, covalent, and metallic.

##### Unit 5: Chemical Reactions

The focus of this unit is on understanding the concept of mole.

##### Unit 6: Chemical Reactions

The focus of this unit is on understanding chemical reactions through stoichiometry. Students perform calculations including using percent composition, empirical and molecular formulas, and relationships between reactants and products including using the mole concept to determine the number of particles in a sample.

2021		November				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31 C2W5	01 Unit 4 (12 45-min. class periods)	02	03	04 • Extend • Review • Assess • Reteach	05	06
07 C2W6	08 Unit 5 (4 45-min. class periods)	09	10	11	12 • Extend • Review • Assess • Reteach	13 END OF CYCLE 2
14 C3W1	15 Unit 6 (24 45-min. class periods)	16	17	18	19	20
21	22	23	24	25	26	27
Thanksgiving						
28 C3W2	29 Unit 6 (24 45-min. class periods)	30	01	02	03	04
05	06	Notes: Nov. 22-26 - Thanksgiving Break				



# Secondary Curriculum and Development

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#### Units of Instruction

##### Unit 6: Chemical Reactions

The focus of this unit is on understanding chemical reactions through stoichiometry. Students perform calculations including using percent composition, empirical and molecular formulas, and relationships between reactants and products.

2021		December				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28 C3W2	29	30	01 Unit 6 (24 45-min. class periods)	02	03	04
05 C3W3	06 Unit 6 (24 45-min. class periods)	07	08	09	10	11
12 C3W4	13 Unit 6 (24 45-min. class periods)	14	15	16	17	18
19	20	21	22	23	24	25
	Enrichment Opportunities		Winter Break			
26	27	28	29	30	31	01
	Winter Break					
02	03	Notes: Dec. 20-31 - Winter Break				

## Science – Chemistry

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 6: Chemical Reactions

The focus of this unit is on understanding chemical reactions through stoichiometry. Students perform calculations including using percent composition, empirical and molecular formulas, and relationships between reactants and products.

##### Unit 7: Chemical Reactions Continued

Students continue studying chemical reactions through stoichiometry. Students perform calculations on limiting reactants in a balanced chemical equation, and determine mass and gas volume relationships between reactants and products and percent yield.

2022		January				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27	28	29	30	31	01
02 C3W5	03 Unit 6 (24 45-min. class periods)	04	05	06	07 • Extend • Review • Assess • Reteach	08
09 C3W6	• Extend • Review • Assess • Reteach					15 <b>END OF CYCLE 3</b>
16 C4W1	17 Martin Luther King, Jr. Day	18 Teacher Prep Day (no students)	19 Unit 7 (10 45-min. class periods)	20	21	22
23 C4W2	24 Unit 7 (10 45-min. class periods)	25	26	27	28	29
30 C4W3	31 Unit 7 (10 45-min. class periods)	<b>Notes:</b> Jan. 17 - Martin Luther King, Jr. Day Jan. 18 - Teacher Preparation Day (no students)				

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#### Units of Instruction

##### Unit 7: Chemical Reactions Continued

Students continue studying chemical reactions through stoichiometry. Students perform calculations on limiting reactants in a balanced chemical equation, and determine mass and gas volume relationships between reactants and products and percent yield.

##### Unit 8: Solutions

Students investigate factors that influence solubility and rates of dissolution and use general rules regarding solubility. Students differentiate between types of solutions and use molarity in calculations involving solutions.

##### Unit 9: Acids and Bases and Reactions

This unit will focus on defining acids and bases, distinguishing between strong and weak acids and bases, acid- base reactions, and calculating the pH of a solution.

2022		February				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30 C4W3	31	01 Unit 7 (10 45-min. class periods)	02 • Extend • Review • Assess • Reteach	03	04 Unit 8 (12 45-min. class periods)	05
06 C4W4	07 Unit 8 (12 45-min. class periods)	08	09	10	11	12
13 C4W5	14 Unit 8 (12 45-min. class periods)	15	16	17	18	19
20 C4W6	21 Teacher Service Day (no students)	22 Unit 8 (12 45-min. class periods)	23 • Extend • Review • Assess • Reteach	24	25	26 END OF CYCLE 4
27 C5W1	28 Unit 9 (12 45-min. class periods)	01	02	03	04	05
06	07	<b>Notes:</b> Feb. 21 - Teacher Service Day (no students)				

## Science – Chemistry

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 9: Acids, Bases and Reactions

This unit will focus on defining acids and bases, distinguishing between strong and weak acids and bases, acid- base reactions, and calculating the pH of a solution.

##### Unit 10: Behavior of Gases

The focus of this unit is for students to be able to understand the kinetic molecular theory and the gas laws to determine how temperature, pressure, and volume affect gases.

2022		March				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27 C5W1	28	01 Unit 9 (12 45-min. class periods)	02	03	04	05
06 C5W2	07 Unit 9 (12 45-min. class periods)	08	09	10	11	12
13	14	15	16	17	18	19
	Enrichment Opportunities			Spring Break		
20 C5W3	21 Unit 9 (12 45-min. class periods)	22	23 • Extend • Review • Assess • Reteach	24	25	26
27 C5W4	28 Chávez / Huerta Day	29 Unit 10 (14 45-min. class periods)	30	31	01	02
03	04	<b>Notes:</b> Mar. 14-18 - Spring Break Mar. 28 - César Chávez/Dolores Huerta Day				





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#### Units of Instruction

##### Unit 10: Behavior of Gases

The focus of this unit is for students to be able to understand the kinetic molecular theory and the gas laws to determine how temperature, pressure, and volume affect gases.

##### Unit 11: Thermochemistry and Nuclear Chemistry

In this unit, students use thermochemical equations to calculate energy changes that occur in chemical reactions. Students also understand nuclear radiation in the form of alpha, beta, and gamma rays. It also includes characteristics of radioactive decay and the effects of fission and fusion reactions.

2022		April				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27 C5W4	28	29	30	31	01 Unit 10 (14 45-min. class periods)	02
03 C5W5	04 Unit 10 (14 45-min. class periods)	05	06	07	08	09
10 C5W6	11 Unit 10 (14 45-min. class periods)	12	13	14	15 Spring Holiday	16
17 C5W7	18 Unit 10 (14 45-min. class periods)	19	20	21	22	23
		<ul style="list-style-type: none"> <li>• Extend</li> <li>• Review</li> <li>• Assess</li> <li>• Reteach</li> </ul>				<b>END OF CYCLE 5</b>
24 C6W1	25 Unit 11 (12 45-min. class periods)	26	27	28	29	30
01	02	<b>Notes:</b> Apr. 15 - Spring Holiday				

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#### Units of Instruction

##### Unit 11: Thermochemistry and Nuclear Chemistry

In this unit, students use thermochemical equations to calculate energy changes that occur in chemical reactions. Students also understand nuclear radiation in the form of alpha, beta, and gamma rays. It also includes characteristics of radioactive decay and the effects of fission and fusion reactions.

##### Unit 12: STEM Research Project

After completing the curriculum, students use this opportunity to plan and implement scientific investigations through real-life applications of current science issues.

2022		May				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
01 C6W2	02 Unit 11 (12 45-min. class periods)	03	04	05	06	07
08 C6W3	09 Unit 11 (12 45-min. class periods)	10	11 • Extend • Review • Assess • Reteach	12	13	14
15 C6W4	16 • Extend • Review • Assess • Reteach	17	18	19 Unit 12 (12 45-min. class periods)	20	21
22 C6W5	23 Unit 12 (12 45-min. class periods)	24	25	26	27	28
29 C6W6	30 Memorial Day	31 Unit 12 (12 45-min. class periods)	01	02	03	04
05	06	<b>Notes:</b> May 30 - Memorial Day				



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#### Units of Instruction

##### Unit 12: STEM Research Project

After completing the curriculum, students use this opportunity to plan and implement scientific investigations through real-life applications of current science issues.

2022		June				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29 C6W6	30	31	01 Unit 12 (12 45-min. class periods)	02	03	04
05 C6W7	06 Unit 12 (12 45-min. class periods)	07 • Extend • Review • Assess • Reteach	08 Teacher Prep Day (no students) END OF CYCLE 6	09	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	01	02
03	04	<b>Notes:</b> Jun. 8 - Teacher Preparation Day (no students)				