



# Secondary Curriculum and Development

ALIGN, ADVANCE, ENGAGE.

## Science – Physics

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 1: Measuring and Describing Motion

The focus of this unit is on measurement and quantitative observations, including tables, charts, graphs, and equations, used describing the motion of objects.

##### Unit 2: Motion in One Dimension

Students use kinematic equations and graphical vector addition to describe motion in one dimension including speed, velocity, distance, displacement, frame of reference and acceleration.

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 (6 45-min. class periods)	24	25	26	27	28
29 C1W2	30 Unit 1 (6 45-min. class periods)	31 Unit 2 (8 45-min. class periods)	01	02	03	04
05	06	<b>Notes:</b> Aug. 16-20 - Teacher Service Days (no students)				



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## Science – Physics

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 2: Motion in One Dimension

Students use kinematic equations and graphical vector addition to describe motion in one dimension including speed, velocity, distance, displacement, frame of reference and acceleration.

##### Unit 3: Gravitational Force

Students are introduced to the four fundamental forces in physics. The rest of this unit focuses on the principles and calculations of gravitational force.

2021		September				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29 C1W2	30	31	01 Unit 2 (8 45-min. class periods)	02	03	04
05 C1W3	06 Labor Day	07 Unit 2 (8 45-min. class periods)	08	09	10	11
12 C1W4	13 Unit 3 (8 45-min. class periods)	14	15	16 Fall Holiday	17 Teacher Service Day (no students)	18
19 C1W5	20 Unit 3 (8 45-min. class periods)	21	22	23	24	25
26 C1W6	27 • Extend • Review • Assess • Reteach	28	29	30	01	02
03	04	<b>Notes:</b> Sept. 6 - Labor Day Sept. 16 - Fall Holiday Sept. 17 - Teacher Service Day (no students)				

## Science – Physics

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 4: Forces and Laws of Motion

The focus of this unit is describing the effect of forces on the motion of objects. Students calculate the effect of forces including the law of inertia, the relationship between force, and acceleration, and the nature of force pairs between objects using methods including free-body force diagrams.

##### Unit 5: Motion in Two Dimensions

Students continue analyzing motion using vectors and kinematic equations for projectile and circular motion.

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 4 (14 45-min. class periods)	06	07	08	09
10 C2W2	11 Unit 4 (14 45-min. class periods)	12	13	14	15	16
17 C2W3	18 Unit 4 (14 45-min. class periods)	19	20	21	22	23
24 C2W4	25 Unit 5 (10 45-min. class periods)	26	27	28	29	30
31	01	<b>Notes:</b> Oct. 4 - Teacher Service Day (no students)				

## Science – Physics

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 5: Motion in Two Dimensions

Students continue analyzing motion using vectors and kinematic equations for projectile and circular motion.

##### Unit 6: Mechanical Energy, Momentum and Impulse

The focus for this unit is for students to calculate momentum, power, mechanical energy, and apply the impulse-theorem in physical systems.

##### Unit 7: Work-Energy Theorem and Energy Transformations

Students investigate and calculate examples of the work-energy theorem and investigate examples of energy transformations.

2021		November				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31 C2W5	01 <b>Unit 5</b> (10 45-min. class periods)	02	03	04	05	06
07 C2W6	08 • <b>Extend</b> • <b>Review</b> • <b>Assess</b> • <b>Reteach</b>	09	10	11	12	13 <b>END OF CYCLE 2</b>
14 C3W1	15 <b>Unit 6</b> (6 45-min. class periods)	16	17	18	19	20
21	22	23	24	25	26	27
<b>Thanksgiving</b>						
28 C3W2	29 <b>Unit 6</b> (6 45-min. class periods)	30 <b>Unit 7</b> (12 45-min. class periods)	01	02	03	04
05	06	<b>Notes:</b> Nov. 22-26 - Thanksgiving Break				



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### 2021-2022 Pacing Calendar

**Units of Instruction**

**Unit 7: Work-Energy Theorem and Energy Transformations**  
Students investigate and calculate examples of the work-energy theorem and investigate examples of energy transformations.

**Unit 8: Conservation of Energy and Momentum**  
After calculating momentum and energy in various situation students demonstrate and apply the laws of conservation of energy and momentum in one dimension.

2021		December				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28 C3W2	29	30	01 Unit 7 (12 45-min. class periods)	02	03	04
05 C3W3	06 Unit 7 (12 45-min. class periods)	07	08	09	10	11
12 C3W4	13 Unit 7 (12 45-min. class periods)	14	15	16 Unit 8 (6 45-min. class periods)	17	18
19	20 Enrichment Opportunities	21	22	23	24	25
26	27	28	29	30	31	01
02	03	<b>Notes:</b> Dec. 20-31 - Winter Break				

## Science – Physics

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 8: Conservation of Energy and Momentum

After calculating momentum and energy in various situations students demonstrate and apply the laws of conservation of energy and momentum in one dimension.

##### Unit 9: Thermodynamics and Thermal Energy Transfer

In this unit, students explain Four Laws of Thermodynamics with examples and also give examples of the processes of thermal energy transfer.

##### Unit 10: Wave Propagation and Characteristics

Students examine propagation of waves in various types of media and investigate and interpret a variety of waves, their characteristics, and properties and calculate wave speed, frequency, and wavelength of different types of waves.

2022	January					
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27	28	29	30	31	01
02 C3W5	03 Unit 8 (6 45-min. class periods)	04	05	06	07 • Extend • Review • Assess • Reteach	08
09 C3W6	10 • Extend • Review • Assess • Reteach	11	12	13	14	15
16 C4W1	17 Martin Luther King, Jr. Day	18 Teacher Prep Day (no students)	19 Unit 9 (4 45-min. class periods)	20	21	22
23 C4W2	24 Unit 9 (4 45-min. class periods)	25 Unit 10 (10 45-min. class periods)	26	27	28	29
30 C4W3	31 Unit 10 (10 45-min. class periods)	<b>Notes:</b> Jan. 17 - Martin Luther King, Jr. Day Jan. 18 - Teacher Preparation Day (no students)				
						<b>END OF CYCLE 3</b>

## Science – Physics

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 10: Wave Propagation and Characteristics

Students examine propagation of waves in various types of media and investigate and interpret a variety of waves, their characteristics, and properties and calculate wave speed, frequency, and wavelength of different types of waves.

##### Unit 11: Characteristics and Behaviors of Sound Waves

Students investigate characteristics and behaviors of longitudinal waves including sound waves.

##### Unit 12: Electromagnetic Waves and Image Formation

Students investigate characteristics and behaviors of transverse waves such as electromagnetic waves and investigate, describe and predict image formation as a consequence of reflection from a plane mirror and refraction through a thin convex lens.

##### Unit 13: Electric and Magnetic Forces

This unit focuses on electric and magnetic forces and the relationship between the two. Students calculate the electric force between objects and investigate the relationship between electric and magnetic forces in everyday applications such as generators, motors and transformers.

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



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## Science – Physics

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 13: Electric and Magnetic Forces

This unit focuses on electric and magnetic forces and the relationship between the two. Students calculate the electric force between objects and investigate the relationship between electric and magnetic forces in everyday applications such as generators, motors and transformers.

##### Unit 14: Electric Circuits

Students characterize materials as conductors or insulators based on their electric properties. Students also investigate, construct and analyze series and parallel circuits using calculation for potential difference, resistance, and power used by electric circuit elements in both series and parallel combinations.

2022		March				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27 C5W1	28	01 Unit 13 (12 45-min. class periods)	02	03	04	05
06 C5W2	07 Unit 13 (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 13 (12 45-min. class periods)	22	23 Unit 14 (14 45-min. class periods)	24	25	26
27 C5W4	28 Chávez / Huerta Day	29 Unit 14 (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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### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 14: Electric Circuits

Students characterize materials as conductors or insulators based on their electric properties. Students also investigate, construct and analyze series and parallel circuits using calculation for potential difference, resistance, and power used by electric circuit elements in both series and parallel combinations.

##### Unit 15: Photoelectric Effect and Atomic Physics

Students investigate atomic and quantum phenomena including the dual nature of light. Calculate and describe the application of mass-energy equivalence.

2022		April				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27 C5W4	28	29	30	31	01 Unit 14 (14 45-min. class periods)	02
03 C5W5	04 Unit 14 (14 45-min. class periods)	05	06	07	08	09
10 C5W6	11 Unit 14 (14 45-min. class periods)	12	13 • Extend • Review • Assess • Reteach	14	15 Spring Holiday	16
17 C5W7	18 • Extend • Review • Assess • Reteach	19	20	21	22	23
24 C6W1	25 Unit 15 (10 45-min. class periods)	26	27	28	29	30
01	02	<b>Notes:</b> Apr. 15 - Spring Holiday				

## Science – Physics

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 15: Photoelectric Effect and Atomic Physics

Students investigate atomic and quantum phenomena including the dual nature of light. Calculate and describe the application of mass-energy equivalence.

##### Unit 16: Applications of Atomic and Nuclear Physics

Students investigate examples of atomic, nuclear, and quantum phenomena in everyday applications.

##### Unit 17: STEM Project/Individual Research

After the End-of-Course exams, students 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 <b>Unit 15</b> (10 45-min. class periods)	03	04	05	06	07
08 C6W3	09 <b>Unit 16</b> (4 45-min. class periods)	10	11	12	13 <b>Unit 17</b> (12 45-min. class periods)	14
15 C6W4	16 <b>Unit 17</b> (12 45-min. class periods)	17	18	19	20	21
22 C6W5	23 <b>Unit 17</b> (12 45-min. class periods)	24	25	26	27	28
29 C6W6	30 <b>Memorial Day</b>	31 <b>Unit 17</b> (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

2022		June				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29 C6W6	30	31	01 • Extend • Review • Assess • Reteach	02	03	04
05 C6W7	06 • Extend • Review • Assess • Reteach	07	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)				