



# Secondary Curriculum and Development

ALIGN, ADVANCE, ENGAGE.

## Science – Biology

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 1: Biomolecules

The focus of this unit is comparison of the functions of the different types of biomolecules: carbohydrates, lipids, proteins, and nucleic acids. Students identify the components of DNA as well as the role of enzymes.

##### Unit 2: Cell Structure and Function

The focus of this unit is investigation and explanation of cellular processes, including homeostasis and transport of molecules. Students identify cells as the basic structures of all living things; and that they have specialized parts that perform specific functions such as transporting molecules and maintaining homeostasis.

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 (6 45-min. class periods)	01	02	03	04
05	06	<b>Notes:</b> Aug. 16-20 - Teacher Service Days (no students)				

## Science – Biology

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 2: Cell Structure and Function

The focus of this unit is investigation and explanation of cellular processes, including homeostasis and transport of molecules. Students identify cells as the basic structures of all living things; and that they have specialized parts that perform specific functions such as transporting molecules and maintaining homeostasis.

##### Unit 3: Components of DNA

The focus of this unit is to identify the components of DNA and describe how genetic information is carried in DNA. Students examine explanations for the origin of DNA. Students recognize that DNA is found in all living organisms.

##### Unit 4: Cell Growth and Differentiation

The focus of this unit is description of the cell cycle, DNA replication, and cellular differentiation. Students describe the cell cycle, including mitosis, the importance of the cell cycle to growth and how disruptions of the cell cycle can lead to diseases such as cancer. Students describe cell differentiation and factors that play a role in differentiation.

2021		September				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
29 C1W2	30	31	01 Unit 2 (6 45-min. class periods)	02	03	04
05 C1W3	06 Labor Day	07 Unit 2 (6 45-min. class periods)	08	09 Unit 3 (4 45-min. class periods)	10	11
12 C1W4	13 Unit 3 (4 45-min. class periods)	14	15 Unit 4 (6 45-min. class periods)	16 Fall Holiday	17 Teacher Service Day (no students)	18
19 C1W5	20 Unit 4 (6 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 – Biology

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 5: Viruses

The focus of this unit is the comparison of the structures of viruses and cells. Students describe viral reproduction and the role of viruses in causing diseases.

##### Unit 6: Transcription and Translation

The focus of this unit is the explanation of protein synthesis and gene expression. After identifying the components of the structure of DNA, students explain how DNA is transcribed and translated into amino acids to make proteins.

##### Unit 7: Mutations: Changes in DNA

The focus of this unit is identification and illustration of changes to the nucleotide sequence of DNA resulting in mutations. Although some are harmful, mutations result in the diversity of genes in the world, making natural selection and evolution possible.

##### Unit 8: Genetic Combinations

The focus of this unit is the prediction of the possible outcomes of monohybrid crosses, dihybrid crosses, and non-Mendelian inheritance. Students recognize the significance of genetic variation as a result of the possible outcomes of various genetic combinations.

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 5 (4 45-min. class periods)	06	07	08	09
10 C2W2	11 Unit 6 (6 45-min. class periods)	12	13	14	15	16
17 C2W3	18 Unit 6 (6 45-min. class periods)	19 Unit 7 (6 45-min. class periods)	20	21	22	23
24 C2W4	25 Unit 7 (6 45-min. class periods)	26	27 Unit 8 (8 45-min. class periods)	28	29	30
31	01	<b>Notes:</b> Oct. 4 - Teacher Service Day (no students)				

## Science – Biology

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 8: Genetic Combinations

The focus of this unit is the prediction of the possible outcomes of monohybrid crosses, dihybrid crosses, and non-Mendelian inheritance. Students recognize the significance of genetic variation as a result of the possible outcomes of various genetic combinations.

##### Unit 9: Natural Selection

The focus of this unit is analysis and evaluation of the relationship of natural selection to adaptation and to the development of diversity in and among species. Students analyze and evaluate how elements of natural selection result in differential reproductive success in populations, not individuals.

2021		November				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31 C2W5	01 <b>Unit 8</b> (8 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 9</b> (9 45-min. class periods)	16	17	18	19	20
21	22	23	24	25	26	27
<b>Thanksgiving</b>						
28 C3W2	29 <b>Unit 9</b> (9 45-min. class periods)	30	01	02	03	04
05	06	<b>Notes:</b> Nov. 22-26 - Thanksgiving Break				

## Science – Biology

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 9: Natural Selection

The focus of this unit is analysis and evaluation of the relationship of natural selection to adaptation and to the development of diversity in and among species. Students analyze and evaluate how elements of natural selection result in differential reproductive success in populations, not individuals.

##### Unit 10: Evidence of Evolution

The focus of this unit is the analysis and evaluation of the theory of biological evolution by examining evidence of common ancestry from DNA sequences, fossil records, biogeography, and anatomical and developmental homologies.

##### Unit 11: Other mechanisms of Evolution

The focus of this unit is the analysis of other evolutionary mechanisms such as gene flow, genetic drift, mutation, and recombination.

2021		December				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28 C3W2	29	30	01 Unit 9 (9 45-min. class periods)	02	03 Unit 10 (9 45-min. class periods)	04
05 C3W3	06 Unit 10 (9 45-min. class periods)	07	08	09	10	11
12 C3W4	13 Unit 10 (9 45-min. class periods)	14	15	16 Unit 11 (2 45-min. class periods)	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 – Biology

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 12: Biological Classification

The focus of this unit is categorization of organisms using a hierarchical classification system based on similarities and differences among organisms at various taxonomic levels. Multiple levels of organization of biological systems will also be analyzed.

##### Unit 13: Plant Systems: Homeostasis and Biological Processes in Systems

The focus of this unit is on description and investigation of the interactions that occur among systems in plants that perform various functions. Students compare metabolic processes and energy conversions that occur in plants and animals including photosynthesis and cellular respiration. Multiple levels of organization of biological systems will also be analyzed.

##### Unit 14: Animal Systems: Homeostasis and Biological Processes in Systems

The focus of this unit is the description and investigation of the interactions that occur among systems in animals that perform various functions. Students identify metabolic processes and energy conversions that occur in animals. Multiple levels of organization of biological systems will also be analyzed.

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

## Science – Biology

### 2021-2022 Pacing Calendar

#### Units of Instruction

#### Unit 14: Animal Systems: Homeostasis and Biological Processes in Systems

The focus of this unit is the description and investigation of the interactions that occur among systems in animals that perform various functions. Students identify metabolic processes and energy conversions that occur in animals. Multiple levels of organization of biological systems will also be analyzed.

#### Unit 15: Matter and Energy Flow in Ecosystems

The focus of this unit is on analysis of matter and energy flow between organisms and their environment, as well as describing how environmental change impacts ecosystem stability. Students analyze the flow of matter and energy through different trophic levels using various models and describe how environmental change can impact ecosystem stability.

#### Unit 16: Ecosystem Relationships

The focus of this unit is the interpretation of relationships among organisms in an ecosystem including commensalism, mutualism, parasitism, and predator-prey relationships.

2022		February				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30 C4W3	31	01 Unit 14 (10 45-min. class periods)	02	03	04	05
06 C4W4	07 Unit 14 (10 45-min. class periods)	08	09	10 Unit 15 (6 45-min. class periods)	11	12
13 C4W5	14 Unit 15 (6 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 16 (6 45-min. class periods)	01	02	03	04	05
06	07	Notes: Feb. 21 - Teacher Service Day (no students)				

## Science – Biology

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 16: Ecosystem Relationships

The focus of this unit is the interpretation of relationships among organisms in an ecosystem including commensalism, mutualism, parasitism, and predator-prey relationships.

##### Unit 17: Variations and adaptations in Ecosystems

The focus of this unit is the description of how events and processes that occur during ecological succession can change populations and species diversity. Students compare variations and adaptations of organisms that help them grow, reproduce, and survive in different ecosystems.

##### Unit 18: EOC Review

The focus of this unit is review of readiness standards in preparation for the Biology EOC.

2022		March				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27 C5W1	28	01 Unit 16 (6 45-min. class periods)	02	03	04	05
06 C5W2	07 Unit 16 (6 45-min. class periods)	08 Unit 17 (4 45-min. class periods)	09	10	11	12
13	14	15	16	17	18	19
	Enrichment Opportunities			Spring Break		
20 C5W3	21 Unit 18 (16 45-min. class periods)	22	23	24	25	26
27 C5W4	28 Chávez / Huerta Day	29 Unit 18 (16 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				



## Science – Biology

### 2021-2022 Pacing Calendar

#### Units of Instruction

##### Unit 18: EOC Review

The focus of this unit is review of readiness standards in preparation for the Biology EOC.

##### Unit 19: Project Based Learning

The focus of this unit is the implementation of scientific investigations through real-life applications of current science issues after the End-of-Course exam.

2022		April				
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
27 C5W4	28	29	30	31	01 Unit 18 (16 45-min. class periods)	02
03 C5W5	04 Unit 18 (16 45-min. class periods)	05	06	07	08	09
10 C5W6	11 Unit 18 (16 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 END OF CYCLE 5
24 C6W1	25 Unit 19 (26 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 19: Project Based Learning

The focus of this unit is the implementation of scientific investigations through real-life applications of current science issues after the End-of-Course exam.

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



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### 2021-2022 Pacing Calendar

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)				