



Secondary Curriculum and Development

ALIGN, ADVANCE, ENGAGE.

Science – Environmental Systems

2021-2022 Pacing Calendar

Units of Instruction
Unit 1: Introduction to Environmental Science
 The focus of this unit is to look at the different aspects and subsections of environmental science, and how the environmental movement has affected society and the world. Students are introduced to environmental careers, and contributions of scientists.

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



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Units of Instruction

Unit 1: Introduction to Environmental Science

The focus of this unit is to look at the different aspects and subsections of environmental science, and how the environmental movement has affected society and the world. Students are introduced to environmental careers, and contributions of scientists.

Unit 2: Biogeochemical Cycles

The focus of this unit is on the biogeochemical cycles, abiotic and biotic factors, and how substances such as dissolved oxygen, chlorides, and nitrates impact an ecosystem.

| 2021 | | September | | | | |
|------------|---|---|---|--|--|----------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 29 C1W2 | 30 | 31 | 01 Unit 1 (8 45-min. class periods) | 02 Unit 2 (14 45-min. class periods) | 03 | 04 |
| 05 C1W3 | 06 Labor Day | 07 Unit 2 (14 45-min. class periods) | 08 | 09 | 10 | 11 |
| 12 C1W4 | 13 Unit 2 (14 45-min. class periods) | 14 | 15 | 16 Fall Holiday | 17 Teacher Service Day (no students) | 18 |
| 19 C1W5 | 20 Unit 2 (14 45-min. class periods) | 21 | 22 | 23 | 24 | 25 |
| 26 C1W6 | 27 • Extend • Review • Assess • Reteach | 28 | 29 | 30 | 01 | 02 |
| 03 | 04 | Notes: Sept. 6 - Labor Day Sept. 16 - Fall Holiday Sept. 17 - Teacher Service Day (no students) | | | | |



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Units of Instruction

Unit 3: Energy Flow
The focus of this unit is on the process of the flow of energy in ecosystems. Students are introduced to the heat flow process, as well as the three laws of thermodynamics.

Unit 4: Ecosystem Interactions
The focus of this unit is on the different components of the geosphere, hydrosphere, atmosphere, and biosphere. Students are also introduced to how the components interact and the effects of natural events.

| 2021 | | October | | | | |
|------------|---|---|-----------|----------|---|---------------------------------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 26 C1W6 | 27 | 28 | 29 | 30 | 01 • Extend • Review • Assess • Reteach | 02 END OF CYCLE 1 |
| 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 Unit 4 (16 45-min. class periods) | 16 |
| 17 C2W3 | 18 Unit 4 (16 45-min. class periods) | 19 | 20 | 21 | 22 | 23 |
| 24 C2W4 | 25 Unit 4 (16 45-min. class periods) | 26 | 27 | 28 | 29 | 30 |
| 31 | 01 | Notes: Oct. 4 - Teacher Service Day (no students) | | | | |



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Units of Instruction

Unit 4: Ecosystem Interactions

The focus of this unit is on the different components of the geosphere, hydrosphere, atmosphere, and biosphere. Students are also introduced to how the components interact and the effects of natural events.

Unit 5: Biodiversity and Extinction

This unit focuses on the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. Students are introduced to invasive species, extinction, and biodiversity. Students become familiar with using a dichotomous key.

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



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Units of Instruction

Unit 5: Biodiversity and Extinction

This unit focuses on the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. Students are introduced to invasive species, extinction, and biodiversity. Students become familiar with using a dichotomous key.

| 2021 | | December | | | | |
|------------|--|--|--|--------------------|--------------------|----------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 28 C3W2 | 29 | 30 | 01 Unit 5 (24 45-min. class periods) | 02 | 03 | 04 |
| 05 C3W3 | 06 Unit 5 (24 45-min. class periods) | 07 | 08 | 09 | 10 | 11 |
| 12 C3W4 | 13 Unit 5 (24 45-min. class periods) | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 Enrichment Opportunities | 21 | 22 Winter Break | 23 Winter Break | 24 Winter Break | 25 |
| 26 | 27 Winter Break | 28 Winter Break | 29 Winter Break | 30 Winter Break | 31 Winter Break | 01 |
| 02 | 03 | Notes: Dec. 20-31 - Winter Break | | | | |



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Units of Instruction

Unit 5: Biodiversity and Extinction

This unit focuses on the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. Students are introduced to invasive species, extinction, and biodiversity. Students become familiar with using a dichotomous key.

Unit 6: Renewable and Nonrenewable Resources

The focus of this unit is on the different sources of renewable and nonrenewable resources. Students are introduced to the sources of energy, oil, natural gas, coal, nuclear, solar, geothermal, hydroelectric, and wind. Students are also introduced to the concept of sustainability and ecological footprint.

| 2022 | | January | | | | |
|------------|---|---|--|----------|---|-------------------------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 26 | 27 | 28 | 29 | 30 | 31 | 01 |
| 02 C3W5 | 03 Unit 5 (24 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 END OF CYCLE 3 |
| 16 C4W1 | 17 Martin Luther King, Jr. Day | 18 Teacher Prep Day (no students) | 19 Unit 6 (10 45-min. class periods) | 20 | 21 | 22 |
| 23 C4W2 | 24 Unit 6 (10 45-min. class periods) | 25 | 26 | 27 | 28 | 29 |
| 30 C4W3 | 31 Unit 6 (10 45-min. class periods) | Notes: Jan. 17 - Martin Luther King, Jr. Day Jan. 18 - Teacher Preparation Day (no students) | | | | |



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Units of Instruction

Unit 6: Renewable and Nonrenewable Resources

The focus of this unit is on the different sources of renewable and nonrenewable resources. Students are introduced to the sources of energy, oil, natural gas, coal, nuclear, solar, geothermal, hydroelectric, and wind. Students are also introduced to the concept of sustainability and ecological footprint.

Unit 7: Natural Processes and Events

The focus of this unit is to look at the natural events and processes that shape the planet and change our environment. Students are introduced to plate tectonics, natural disasters, ecological succession, weather and climate, as well as global warming.

Unit 8: Land and Water Use

The focus of this unit is on land and water use and management, its effects on the environment, and conservation. Students are introduced to the measures taken for the conservation of water and its quality.

| 2022 | | February | | | | |
|------------|--|---|--|----------|---|----------------------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 30 C4W3 | 31 | 01 Unit 6 (10 45-min. class periods) | 02 Unit 7 (12 45-min. class periods) | 03 | 04 | 05 |
| 06 C4W4 | 07 Unit 7 (12 45-min. class periods) | 08 | 09 | 10 | 11 | 12 |
| 13 C4W5 | 14 Unit 7 (12 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 8 (10 45-min. class periods) | 01 | 02 | 03 | 04 | 05 |
| 06 | 07 | Notes: Feb. 21 - Teacher Service Day (no students) | | | | |



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Units of Instruction

Unit 8: Land and Water Use
The focus of this unit is on land and water use and management, its effects on the environment, and conservation. Students are introduced to the measures taken for the conservation of water and its quality.

Unit 9: Pollution and Waste
The focus of this unit is on the different sources of pollution and waste the human population contributes to the environment. Students are introduced to the types of pollution in the air, soil, and water.

| 2022 | | March | | | | |
|------------|--|---|-----------|--------------|--------|----------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 27 C5W1 | 28 | 01 Unit 8 (10 45-min. class periods) | 02 | 03 | 04 | 05 |
| 06 C5W2 | 07 Unit 8 (10 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 (16 45-min. class periods) | 22 | 23 | 24 | 25 | 26 |
| 27 C5W4 | 28 Chávez / Huerta Day | 29 Unit 9 (16 45-min. class periods) | 30 | 31 | 01 | 02 |
| 03 | 04 | Notes: Mar. 14-18 - Spring Break Mar. 28 - César Chávez/Dolores Huerta Day | | | | |



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Units of Instruction

Unit 9: Pollution and Waste
The focus of this unit is on the different sources of pollution and waste the human population contributes to the environment. Students are introduced to the types of pollution in the air, soil, and water.

Unit 10: Human Population
The focus of this unit is on demography and human population and carrying capacity dynamics. Students are going to calculate birth and death rates, and exponential growth of populations. Students analyze and predict the impact of populations on diseases, urbanization, and migration.

| 2022 | | April | | | | |
|------------|---|---|---|----------|--|----------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 27 C5W4 | 28 | 29 | 30 | 31 | 01 Unit 9 (16 45-min. class periods) | 02 |
| 03 C5W5 | 04 Unit 9 (16 45-min. class periods) | 05 | 06 | 07 | 08 | 09 |
| 10 C5W6 | 11 Unit 9 (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 |
| 24 C6W1 | 25 Unit 10 (8 45-min. class periods) | 26 | 27 | 28 | 29 | 30 |
| 01 | 02 | Notes: Apr. 15 - Spring Holiday | | | | |



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Units of Instruction

Unit 10: Human Population
The focus of this unit is on demography and human population and carrying capacity dynamics. Students are going to calculate birth and death rates, and exponential growth of populations. Students analyze and predict the impact of populations on diseases, urbanization, and migration.

Unit 11: Effects of Human Activities
The focus of this unit is on the effects the human population has on the environment, and how society is making efforts to preserve and conserve the natural environment. Students are introduced to the rules and regulations of human activities. Students understand the impacts of global warming and “green” living.

Unit 12: Environmental Policy and Law
The focus of this unit is the policies and laws that have been put into place to protect wildlife and the human population. Students become familiar with local, state, national, and international policy.

Unit 13: STEM Project
This project would include the major information learned in the course. This is going to include information about the human population, and the impacts that human activities have on the environment. The project would also include legislation.

| 2022 | | May | | | | |
|------------|--|---|-----------|--|---|----------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 01 C6W2 | 02 Unit 10 (8 45-min. class periods) | 03 | 04 | 05 Unit 11 (12 45-min. class periods) | 06 | 07 |
| 08 C6W3 | 09 Unit 11 (12 45-min. class periods) | 10 | 11 | 12 | 13 | 14 |
| 15 C6W4 | 16 Unit 11 (12 45-min. class periods) | 17 | 18 | 19 | 20 | 21 |
| 22 C6W5 | 23 Unit 12 (4 45-min. class periods) | 24 | 25 | 26 | 27 Unit 13 (2 45-min. class periods) | 28 |
| 29 C6W6 | 30 Memorial Day | 31 Unit 13 (2 45-min. class periods) | 01 | 02 | 03 | 04 |
| 05 | 06 | Notes: 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 | Notes: Jun. 8 - Teacher Preparation Day (no students) | | | | |