



Secondary Curriculum and Development

ALIGN, ADVANCE, ENGAGE.

Science – Aquatic Science

2021-2022 Pacing Calendar

Units of Instruction

Unit 1: Safety and Introduction to Aquatic Science

The focus of this unit is to familiarize students with safety procedures involved in working with aquariums, research different aquatic science careers, and set up their aquariums.

| 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 (12 45 min. class periods) | 24 | 25 | 26 | 27 | 28 |
| 29 C1W2 | 30 Unit 1 (12 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: Safety and Introduction to Aquatic Science

The focus of this unit is to familiarize students with safety procedures involved in working with aquariums, research different aquatic science careers, and set up their aquariums.

Unit 2: Chemistry and properties of Water

The focus of this unit is to explore the structure and unique properties of water that enable the survival of aquatic organisms. These properties include specific heat, density, pH, hardness, turbidity, salinity, surface tension, conductivity, surface tension, adhesion, cohesion and hydrostatic pressure.

| 2021 | | September | | | | |
|------------|---|---|--|--|--|----------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 29 C1W2 | 30 | 31 | 01 Unit 1 (12 45-min. class periods) | 02 | 03 | 04 |
| 05 C1W3 | 06 Labor Day | 07 Unit 1 (12 45-min. class periods) | 08 | 09 Unit 2 (10 45-min. class periods) | 10 | 11 |
| 12 C1W4 | 13 Unit 2 (10 45-min. class periods) | 14 | 15 | 16 Fall Holiday | 17 Teacher Service Day (no students) | 18 |
| 19 C1W5 | 20 Unit 2 (10 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: Water Resources

The focus of this unit is on the study of watersheds, water laws and the enforcement agencies.

Unit 4: Aquatic Cycles

The focus of this unit is the study of carbon, nitrogen, water nutrient cycles and their roles in an aquatic environment.

| 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 (12 45-min. class periods) | 06 | 07 | 08 | 09 |
| 10 C2W2 | 11 Unit 3 (12 45-min. class periods) | 12 | 13 | 14 | 15 | 16 |
| 17 C2W3 | 18 Unit 3 (12 45-min. class periods) | 19 | 20 | 21 Unit 4 (12 45-min. class periods) | 22 | 23 |
| 24 C2W4 | 25 Unit 4 (12 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: Aquatic Cycles

The focus of this unit is the study of carbon, nitrogen, water nutrient cycles and their roles in an aquatic environment.

Unit 5: Plate Tectonics

The focus of this unit is meteorology and geology. The unit focuses on the study of the formation of undersea geographical features, creation of new sea floor and the generation of tsunamis. The unit also includes how to track tsunamis and hurricanes, predict their impact as well as how to prepare for and survive such events.

| 2021 | | November | | | | |
|------------|---|--|-----------|----------|--------|----------------------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 31 C2W5 | 01 Unit 4 (12 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 (14 45-min. class periods) | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| | Thanksgiving | | | | | |
| 28 C3W2 | 29 Unit 5 (14 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: Plate Tectonics

The focus of this unit is meteorology and geology. The unit focuses on the study of the formation of undersea geographical features, creation of new sea floor and the generation of tsunamis. The unit also includes how to track tsunamis and hurricanes, predict their impact as well as how to prepare for and survive such events.

Unit 6: Energy Flow and Population Ecology

The focus of this unit is on the flow of energy and cycles of matter in both fresh and saltwater aquatic systems. It also includes analyzing the interrelationships and identifying interdependence of organisms in aquatic ecosystems / environment.

| 2021 | | December | | | | |
|------------|--|--|--|--------------------|--|----------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 28 C3W2 | 29 | 30 | 01 Unit 5 (14 45-min. class periods) | 02 | 03 | 04 |
| 05 C3W3 | 06 Unit 5 (14 45-min. class periods) | 07 | 08 | 09 | 10 Unit 6 (10 45-min. class periods) | 11 |
| 12 C3W4 | 13 Unit 6 (10 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 6: Energy Flow and Population

Ecology

The focus of this unit is on the flow of energy and cycles of matter in both fresh and saltwater aquatic systems. It also includes analyzing the interrelationships and identifying interdependence of organisms in aquatic ecosystems / environment.

Unit 7: Aquatic Ecosystems and Adaptations

The focus of this unit is to study freshwater, brackish and saltwater systems; differentiate among them and compare differences in adaptations of aquatic organisms to fresh water and marine environments.

| 2022 | | January | | | | |
|------------|---|---|--|----------|---|-----------------------------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 26 | 27 | 28 | 29 | 30 | 31 | 01 |
| 02 C3W5 | 03 Unit 6 (10 45-min. class periods) | 04 | 05 | 06 | 07 • Extend • Review • Assess • Reteach | 08 |
| 09 C3W6 | • Extend • Review • Assess • Reteach | | | | | 15 END OF CYCLE 3 |
| 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) | Notes: Jan. 17 - Martin Luther King, Jr. Day Jan. 18 - Teacher Preparation Day (no students) | | | | |



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Units of Instruction

Unit 7: Aquatic Ecosystems and Adaptations

The focus of this unit is to study freshwater, brackish and saltwater systems; differentiate among them and compare differences in adaptations of aquatic organisms to fresh water and marine environments.

Unit 8: Brackish Ecosystems and Wetlands

The focus of this unit is to study Brackish ecosystems and wetlands; their components; the organisms found in them, their behavior and adaptations; and the relationships and interdependence of organisms found in these aquatic environments.

Unit 9: Freshwater Ecosystems

The focus of this unit is to study freshwater ecosystems (rivers, streams, lakes and ponds); their components; the organisms found in them, their behavior and adaptations; and the relationships and interdependence of organisms found in these aquatic environments. This unit also covers energy flows and cycles of matter through freshwater aquatic systems.

| 2022 | | February | | | | |
|------------|--|--|--|----------|---|----------------------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 30 C4W3 | 31 | 01 Unit 7 (10 45-min. class periods) | 02 Unit 8 (12 45-min. class periods) | 03 | 04 | 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 • Extend • Review • Assess • Reteach | 19 |
| 20 C4W6 | 21 Teacher Service Day (no students) | • Extend • Review • Assess • Reteach | | | | 26 END OF CYCLE 4 |
| 27 C5W1 | 28 Unit 9 (14 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 9: Freshwater Ecosystems
The focus of this unit is to study freshwater ecosystems (rivers, streams, lakes and ponds); their components; the organisms found in them, their behavior and adaptations; and the relationships and interdependence of organisms found in these aquatic environments. This unit also covers energy flows and cycles of matter through freshwater aquatic systems.

Unit 10: Tropical Saltwater Ecosystems
The focus of this unit is to study tropical saltwater ecosystems (coral reefs, fringe reefs, barrier reefs, atolls); their components; the organisms found in them, their behavior and adaptations; and the relationships and interdependence of organisms found in these aquatic environments. This unit also covers energy flows and cycles of matter through tropical saltwater ecosystems.

| 2022 | March | | | | | |
|------------|--|---|-----------|--------------|---|----------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 27 C5W1 | 28 | 01 Unit 9 (14 45-min, class periods) | 02 | 03 | 04 | 05 |
| 06 C5W2 | 07 Unit 9 (14 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 (14 45-min. class periods) | 22 | 23 | 24 | 25 Unit 10 (12 45-min. class periods) | 26 |
| 27 C5W4 | 28 Chávez / Huerta Day | 29 Unit 10 (12 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 10: Tropical Saltwater Ecosystems

The focus of this unit is to study tropical saltwater ecosystems (coral reefs, fringe reefs, barrier reefs, atolls); their components; the organisms found in them, their behavior and adaptations; and the relationships and interdependence of organisms found in these aquatic environments. This unit also covers energy flows and cycles of matter through tropical saltwater ecosystems.

Unit 11: Polar Saltwater Ecosystems

The focus of this unit is to study polar saltwater ecosystems (Antarctic and arctic, deep sea); their components; the organisms found in them, their behavior and adaptations; and the relationships and interdependence of organisms found in these aquatic environments. This unit also covers energy flows and cycles of matter through polar saltwater ecosystems.

| 2022 | | April | | | | |
|------------|---|---|---|----------|---|-------------------------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 27 C5W4 | 28 | 29 | 30 | 31 | 01 Unit 10 (12 45-min. class periods) | 02 |
| 03 C5W5 | 04 Unit 10 (12 45-min. class periods) | 05 | 06 | 07 | 08 | 09 |
| 10 C5W6 | 11 Unit 10 (12 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 11 (14 45-min. class periods) | 26 | 27 | 28 | 29 | 30 |
| 01 | 02 | Notes: Apr. 15 - Spring Holiday | | | | |



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Units of Instruction

Unit 11: Polar Saltwater Ecosystems

The focus of this unit is to study polar saltwater ecosystems (Antarctic and arctic, deep sea); their components; the organisms found in them, their behavior and adaptations; and the relationships and interdependence of organisms found in these aquatic environments. This unit also covers energy flows and cycles of matter through polar saltwater ecosystems.

Unit 12: Human Impact on Aquatic Systems

The focus of this unit is to predict the effects chemical, organic, physical and thermal changes have on aquatic systems; investigate the role humans play in creating unbalanced systems, analyze and discuss how human activities influence aquatic systems.

| 2022 | | May | | | | |
|------------|---|---|-----------|----------|---|----------|
| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| 01 C6W2 | 02 Unit 11 (14 45-min. class periods) | 03 | 04 | 05 | 06 | 07 |
| 08 C6W3 | 09 Unit 11 (14 45-min. class periods) | 10 | 11 | 12 | 13 Unit 12 (12 45-min. class periods) | 14 |
| 15 C6W4 | 16 Unit 12 (12 45-min. class periods) | 17 | 18 | 19 | 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 | 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 | 02 | 03 | 04 | | | |
| | | | • Extend • Review • Assess • Reteach | | | | | | |
| 05 C6W7 | 06 | 07 | 08 | 09 | 10 | 11 | | | |
| | • Extend • Review • Assess • Reteach | | Teacher Prep Day (no students) END OF CYCLE 6 | | | | | | |
| 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) | | | | | | | |