

Project WILD Science and Civics Correlated to California Content Standards in Science

Chemistry: Acids and Bases

5. Acids, bases, and salts are three classes of compounds that form ions in water solutions. As a basis for understanding this concept:
 - a. Students know the observable properties of acids, bases, and salt solutions.

Habitat Exploration

To Breathe or Not to Breathe

Change My pH and I'll Change Yours

Who Lives in Soil?

- d. Students know how to use the pH scale to characterize acid and base solutions.

Habitat Exploration

Layering Soil

Change My pH and I'll Change Yours

Biology

1. The fundamental life processes of plants and animals depend on a variety of chemical reactions that occur in specialized areas of the organism's cells. As a basis for understanding this concept:
 - f. Students know usable energy is captured from sunlight by chloroplasts and is stored through the synthesis of sugar from carbon dioxide.

Participatory Democracy

To Breathe or Not to Breathe

Ecology

6. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:
 - a. Students know biodiversity is the sum total of different kinds of organisms, and is affected by alterations of habitats.

Awareness

Color Me a Watershed

Then and Now

Ecology Begins at Home

Participatory Democracy

A Place for Every Living Thing

How to Evaluate Habitats

- b. Students know how to analyze changes in an ecosystem resulting from changes in climate, human activity, introduction of nonnative species, or changes in population size.

Awareness

Color Me a Watershed

Then and Now

Ecology Begins at Home

Participatory Democracy

Testing the Law

Who Cares?

Close to Home

Habitat Exploration

Is There Hardpan Underfoot?

Where does the Water Run?

Limits to Living Here

A Place for Every Living Thing

How to Evaluate Habitats

- c. Students know how fluctuations in population size in an ecosystem are determined by the relative rates of birth, immigration, emigration, and death.

Participatory Democracy

The Law: Before and After

- d. Students know how water, carbon, and nitrogen cycle between abiotic resources and organic

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matter in the ecosystem and how oxygen cycles through photosynthesis and respiration

Participatory Democracy

To Breathe or Not to Breathe

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Feeding the Soil

How to Evaluate Habitats

- e. Students know a vital part of an ecosystem is the stability of its producers and decomposers.

Participatory Democracy

Who Lives in Soil?

- f. Students know at each link in a food web some energy is stored in newly made structures but much energy is dissipated into the environment as heat. This dissipation may be represented in an energy pyramid.

Participatory Democracy

Who Lives in Soil?

Geology

9. The geology of California underlies the state's wealth of natural resources as well as its natural hazards. As a basis for understanding this concept:
- a. Students know the resources of major economic importance in California and their relation to California's geology.

Awareness

Color Me a Watershed

Then and Now

- b. Students know the principal natural hazards in different California regions and the geologic basis of those hazards.

Awareness

Color Me a Watershed

Then and Now

Ecology Begins at Home

Habitat Exploration

Where Does Water Run?

Can Water Get Through This?

Layering the Soil

Feeding the Soil

- c. Students know the importance of water to society, the origins of California's fresh water, and the relationship between supply and need.

Awareness

Color Me a Watershed

Is There Hardpan Underfoot?

Where Does Water Run?

Can Water Get Through This?

Earth Sciences

6. Climate is the long-term average of a region's weather and depends on many factors. As a basis for understanding this concept:
- b. Students know the effects on climate of latitude, elevation, topography, and proximity to large bodies of water and cold or warm ocean currents.

Awareness

Getting Acquainted

7. Each element on Earth moves among reservoirs, which exist in the solid earth, in oceans, in the atmosphere, and within and among organisms as part of biogeochemical cycles. As a basis for understanding this concept:
- a. Students know the carbon cycle of photosynthesis and respiration and the nitrogen cycle.

Participatory Awareness

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To Breathe or Not to Breathe

Investigation

1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:
 - a. Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.

Awareness

Ecology Begins at Home

Getting Acquainted

Participatory Democracy

The Law: Before and After

Wild Bill's Fate

Give Wildlife a Break

Executive Prerogatives

Testing the Law

Do You Hear What I Hear, See What I See

What's Their Difference?

Is There a Feather in My Cap?

Legal Eagles

Who Cares?

Close to Home

Habitat Exploration

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Who Lives in Soil?

A Place for Every Living Thing

Taking Action

Defining Action

Planning to Act

Telling the World

- c. Identify possible reasons for inconsistent results, such as sources of error or uncontrolled conditions.

Participatory Democracy

Do You Hear What I Hear, See What I See?

Is There a Feather in My Cap?

Habitat Exploration

Who Lives in Soil?

Taking Action

What Did They Do Over There?

A Job Well Done

- d. Formulate explanations by using logic and evidence.

Awareness

Color Me a Watershed

Ten and Now

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Participatory Democracy

Structural Review

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Defining Action

What Did They Do Over There?

Caring to Act

Planning to Act

h. Read and interpret topographic and geologic maps.

Awareness

Getting Acquainted

Participatory Democracy

Legal eagles

Close to Home

Who Lives in Soil?

Taking Action

Defining Actions

Planning to Act

- i. Analyze the locations, sequences, or time intervals that are characteristic of natural phenomena (e.g., relative ages of rocks, locations of planets over time, and succession of species in an ecosystem).

Awareness

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- j. Recognize the issues of statistical variability and the need for controlled tests.

Participatory Democracy

The Law: Before and After

Wild Bill's Fate

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- k. Recognize the cumulative nature of scientific evidence.
- Participatory Democracy
 - Wild Bill's Fate
 - Is There a Feather in My Cap?
 - Feeding the Soil
 - What Did They Do Over There?
- l. Analyze situations and solve problems that require combining and applying concepts from more than one area of science.
- Participatory Democracy
 - Give Wildlife a Break
 - Testing the Law
 - Do You Hear What I Hear, See What I See?
 - Is There a Feather in My Cap?
 - Habitat Exploration
 - Feeding the Soil
 - How to Evaluate Habitats
 - Taking Action
 - Defining Action
 - Planning to Act
 - A Job Well Done
- m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.
- Awareness
 - Color Me a Watershed
 - Then and Now
- Ecology Begins at Home
- Participatory Democracy
 - Structural Review
 - The Law: Before and After
 - Wild Bill's Fate
 - Give Wildlife a Break
 - Executive Prerogatives
 - Testing the Law
 - Do You Hear What I Hear, See What I See?
 - What's Their Difference?
 - Is There a Feather in My Cap?
 - Legal Eagles
 - Who Cares?
 - Close to Home
 - Habitat Exploration
 - Can Water Get Through This?
 - Layering the Soil
 - To Breathe or Not to Breathe
 - Change My pH and I'll Change Yours
 - Feeding the Soil
 - Limits to Living Here
 - Who Lives in Soil?
 - A Place for Every Living Thing
 - How to Evaluate Habitats
 - Defining Action
 - What Do People Think?
 - What Did They Do Over There?
 - Caring Two Act
 - Planning to Act
 - A Job Well Done
 - Telling the World