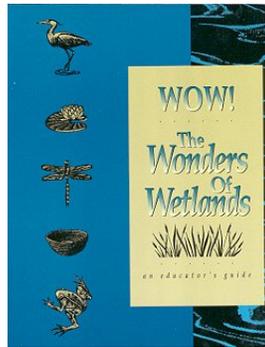
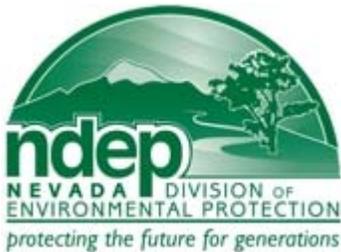


Correlation of *WOW! The Wonders of Wetlands* with Nevada State Standards



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Welcome to *WOW*: Using the Correlation

In this manual, Nevada's State Content Standards have been correlated to *WOW! The Wonders of Wetlands*. The activities are listed in the same order as they appear in the *WOW! Educator's Guide*. All parts of the activities were considered when determining which standard applied. While some benchmarks are easy to determine, others are more subjective and so are open to interpretation. Any variation or particular emphasis chosen by you will affect the Nevada State Curriculum Standards covered by the activity.

All subject areas are grouped within each grade band, intentionally, to encourage cross-curricular lessons.

The strength of a correlation varies widely from standard to standard. Though you can use this correlation to determine likely matches, you will need to skim or read the activity description in the guide to determine the strength of the match and whether the activity will meet your particular academic objectives. The Nevada State Standards are cumulative, as expressed in the phrase "*By the end of the grade band, students know and are able to do everything required in earlier grades and...*" However, for reasons of space, not all of the correlations from earlier grade bands are shown for each activity unless the activity specifies that grade band. If you are looking for activities that teach or review knowledge and skills from earlier bands, you will need to look for similar matches in a higher band and then look at lower bands to see how these activities may meet your academic objectives.

The *WOW!* activities are each correlated to the National Science Education Standards and this information can be found starting on page 331 in the curriculum.

We hope this guide is beneficial in your education endeavors as you use *WOW!*

How to Read the Correlation

Please note that although all the standards have similar organizing schemes, none is identical to the one used for science, which has a third level of detail that the others do not.

EXAMPLE

Introducing Wetlands, p.70

Grade Level K-12

Summary- Before getting into the nitty-gritty of wetland studies, your students may need an introduction to wetlands, or even to the outdoors, on a more casual level. This collection of warm-ups and icebreakers will get you started

Objectives- Students will become aware of the characteristics of a wetland and learn that wetlands are defined by the presence of water, specialized soils, and hydrophytic plants. They will become comfortable in outdoor settings and use their senses to observe nature.

Science: Physical: Matter

P.8.A *Students understand the properties and changes in the properties of matter.*

P.8.A.1 Students know particles are arranged differently in solids, liquids, and gases of the same substance. (Properties of Matter)

KEY

In the color bar is the title of the activity, the starting page number in the *WOW! Wonders of Wetlands educator's guide* and the recommended grade level.

Introducing Wetlands, p.70

Grade Level K-12

The summary and objectives for the activity are provided, directly from the Guide.

Summary- Before getting into the nitty-gritty of wetland studies, your students may need an introduction to wetlands, or even to the outdoors, on a more casual level. This collection of warm-ups and icebreakers will get you started

Objectives- Students will: become aware of the characteristics of a wetland and learn that wetlands are defined by the presence of water, specialized soils, and hydrophytic plants. They will become comfortable in outdoor settings and use their senses to observe nature.

The standards are organized according to grade-level groups (K–2, 3–5, 6–8 and 9–12). Though only some of the Nevada State Standards are organized in this way, it is an effective way to organize all the standards.

Grade Level K-12

The Nevada State Standard being addressed, starting with subject, then a part of the subject area, and then further details. For science, these are the subject (Science), the strand (Physical), and the unifying concept (Matter).

Science: Physical: Matter

The three-character code and italicized text is the standard itself (finally!).

Science: Nature of Science: Scientific Inquiry

The four-character code and text is the benchmark. First is the strand code (N = nature of science, P = physical science, L = life science, and E = earth science). Second is the upper end of the grade band. Third is the unifying concept (such as matter, forces and motion, and energy). Fourth is the benchmark number. The text is followed by the concept, in parentheses. Please note that although all the standards have similar organizing schemes, none is identical to the one used for science.

P.8.A.1 Students know particles are arranged differently in solids, liquids, and gases of the same substance. (Properties of Matter)

Section One: So this is a Wetland!

A series of activities designed to introduce general wetland concepts and definitions. These are good activities to choose from when beginning a wetland study unit.

Introducing Wetlands, p.70

Grade Level K-12

Summary- Before getting into the nitty-gritty of wetland studies, your students may need an introduction to wetlands, or even to the outdoors, on a more casual level. This collection of warm-ups and icebreakers will get you started

Objectives- Students will: become aware of the characteristics of a wetland and learn that wetlands are defined by the presence of water, specialized soils, and hydrophytic plants. They will become comfortable in outdoor settings and use their senses to observe nature.

Science: Nature of Science: Scientific Inquiry

N.2.A- *Students understand that science is an active process of systematically examining the natural world.*

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings

English Language Arts:

1.K.4- Comprehend vocabulary using pictures, symbols, environmental print.

Build vocabulary using pictures, symbols.

7.K.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions.

8.K.2- Use precise language to describe feelings, experiences, observations, ideas.

With assistance, apply Standard English to communicating ideas.

8.K.3- Communicate personal experiences and retell stories.

Communicate a statement that expresses an opinion.

3.4.9- Make connections to self, other text, and/ or the world.

Social Studies: Geography

GS.3.5.1- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

Arts: Visual Arts

1.3.3- Use different media, techniques, and processes to produce works of art.

Arts: Music

1.3.1- Sing simple ostinati and two part rounds

3.3.1- Improvise short melodic and rhythmic patterns.

Let the Cattail Out of the Bag, p.78

Grade Level K-6

Summary- Students prepare for some of the sensory experiences they may encounter on a visit to a wetland when they explore a “touchy-feely” bag full of wetland objects

Objectives- Students will: become aware of some sensory qualities of wetland inhabitants.

Science: Nature of Science: Scientific Inquiry

N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.

N.8.A.3- Students know different explanations can be given for the same evidence.

Science: Physical Science: Matter

P.2.A.3- Students know matter can be categorized by observable properties, such as color, size, shape, and weight.

Science: Life Science: Structure of Life

L.2.B- *Students understand that living things have identifiable characteristics.*

L.2.B.1- Students know humans and other animals use their senses to know their world.

Science: Life Science: Diversity of Life

L.2.D.1- Students know plants and animals can be sorted by observable characteristics and behaviors.

L.5.D- *Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.*

English Language Arts:

8.5.1- Give directions to complete tasks.

Ask questions to clarify directions.

8.6.2- Use precise language to describe feelings, experiences, observations, ideas.

Apply Standard English to communicate ideas.

Social Studies: Geography

3.2.1- Identify some basic elements of a simple ecosystem, such as plants and animals.

3.3.1- Recognize that plants and animals have habitats on both land and in water.

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.5.1- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

5.8.7- Select a resource and evaluate different viewpoints regarding its use.

Wetlands in the Classroom! , p.80

Grade Level K-8

Summary- Students create a “life-sized” cypress swamp or display, or nurture wetland plants and animals in an aquarium or terrarium.

Objectives- Students will: gain greater insight about what makes up a wetland, and will describe a wetland community as a whole.

Science: Nature of Science: Scientific Inquiry

N.2.A- *Students understand that science is an active process of systematically examining the natural world.*

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.2.A.2- Students know tools can be used safely to gather and extend the senses.
N.5.A.7- Students know observable patterns can be used to organize items and ideas.
N.8.A- Students know how to conduct a controlled experiment.

Science: Nature of Science: Science, Technology, and Society

N.2.B.2- Students know that, in science, it is helpful to work in a team and share findings with others.

Science: Physical Science: Matter

P.2.A- *Students understand that matter has observable properties*
P.2.A.4- Students know different objects are made of many different types of materials.

Science: Life Science: Heredity

L.5.A- *Students understand that some characteristics are inherited and some are not.*
L.2.A.2- Students know differences exist among individuals of the same kind of plant or animal.

Science: Life Science: Structure of Life

L.5.B- *Students understand that living things have specialized structures that perform a variety of life functions.*
L.2.B- *Students understand that living things have identifiable characteristics.*
L.5.B.1- Students know plants and animals have structures that enable them to grow and reproduce.

Science: Life Science: Organisms and Their Environment

L.2.C.1- Students know plants and animals need certain resources for energy and growth.
L.2.C.2- Students know a habitat includes food, water, shelter, and space.
L.5.C.3- Students know organisms interact with each other and with the non-living parts of their ecosystem.

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

E.8.A.3- Students know the properties that make water an essential component of the earth system.

Science: Earth and Space Science: Earth's composition

E.5.C.5- Students know soil varies from place to place and has both biological and mineral components.
E.8.C.8- Students know soils have properties, such as color, texture, and water retention, and provide nutrients for life according to how they form.

Social Studies: Geography

3.2.3- Identify some basic elements of simple ecosystems, such as plants and animals.
3.3.1- Recognize that plants and animals have habitats on both land and in water.
3.3.5- Identify the living and nonliving elements of an ecosystem.
3.5.1- Identify the parts of different ecosystems including soil, climate, plant life, and animal life.
3.8.3- Describe the interdependence among soil, climate, plant life, and animal life within different ecosystems.

Arts: Visual Arts

- 1.3.3- Use different media, techniques, and processes to produce works of art.
- 2.3.1- Identify selected elements of design and principles of design in nature and in works of art.
- 2.3.4- Use elements and principles of design to create works of art.
- 2.8.4- Explain how one's own artwork employs various visual characteristics to communicate.

Wetland Metaphors, p. 85

Grade Level 1-12

Summary- Consider a selection of common objects as physical metaphors for natural wetland functions.

Objectives- Students will: describe characteristics of wetlands, appreciate the importance of wetlands to wildlife and humans, and identify ecological functions of wetlands.

Science: Nature of Science: Scientific Inquiry

- N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.
- N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.
- N.8.A.3- Students know different explanations can be given for the same evidence.

Science: Life Science: Structure of Life

L.2.B- *Students understand that living things have identifiable characteristics.*

Science: Life Science: Organisms and Their Environment

- L.8.C- *Students understand how living and non-living components of ecosystems interact.*
- L.8.C.2- Students know how to characterize organisms in any ecosystem by their functions.

English Language Arts:

- 6.1.1- Draw or write to communicate.
- 7.1.5- Actively listen to a speaker.
 - Listen to and participate in conversations.
- 8.1.3- Speak clearly with prosody.
 - Communicate information in small and large groups.
 - With assistance, communicate information that maintains a clear focus.
 - Communicate statements that express an opinion.
- 7.2.2- Listen to and respond to oral communication.
- 8.2.4- Participate in group discussions following the turn-taking process.
 - Ask relevant questions to clarify and gather information.
- 4.4.2- Explain similes, metaphors, personification.
- 7.6.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions.
- 8.12.4- Participate in conversations to solve problems by identifying, synthesizing, and evaluating data.
 - Respond to questions with specific evidence in support of an opinion.
 - Ask relevant questions to generate possible solutions to a problem.
 - Take a leadership role in conversations and discussions.
 - Distinguish between relevant and irrelevant information.

Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

3.3.5- Identifying the living and nonliving elements of an ecosystem.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life within different ecosystems.

Wetland Habitats, p. 87

Grade Level 6-12

Summary- This activity uses a flow chart to introduce and sort out the common types of wetlands,

Objectives- Students will classify wetlands based on their characteristics.

Science: Nature of Science: Scientific Inquiry

N.8.A.1- Students know how to identify and critically evaluate information in data, tables, and graphs.

N.8.A.3- Students know different explanations can be given for the same evidence.

N.8.A.7- Students know there are multiple methods for organizing items and information.

Science: Life Science: Organisms and Their Environment

L.8.C- *Students understand how living and non-living components of ecosystems interact.*

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

L.12.C- *Students understand that ecosystems display patterns of organization, change, and stability as a result of the interactions and interdependencies among the living and non-living components of the Earth.*

L.12.C.1- Students know relationships of organisms and their physical environment.

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

E.8.A.3- Students know the properties that make water an essential component of the earth system.

English Language Arts:

4.12.1- Evaluate information from illustrations, graphs, charts, titles, text boxes, diagrams, headings, maps.

Social Studies: Geography

1.5.3- Read and derive geographic information from photographs, maps, graphs, and computer resources.

1.5.5- Identify the purpose and content of various U.S. maps.

5.8.1- Describe and predict the regional or global impact of changes in the physical environment.

Section Two: The Wetland Community (plants and animals)

A series of exercise and activities which will help students understand critical wetland issues like habitat niche, plant and animal adaptations, wetland delineation, plants' role in filtering pollutants, identifying and classifying plants, and more.

Wetlands Weirdos, p.94

Grade Level 4-12

Summary- Investigate the structure of a cattail, read about beavers, then create a specially adapted creature!

Objectives- Students will: recognize that plant and animal adaptations can be inferred from observations of organisms' physical structures.

Science: Nature of Science: Scientific Inquiry

N.5.A- *Students understand that science involves asking and answering questions and comparing the answers to what scientist know about the world.*

N.8.A.5- *Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.*

Science: Life Science: Heredity

L.5.A- *Students understand that some characteristics are inherited and some are not.*

Science: Life Science: Structure of Life

L.5.B- *Students understand that living things have specialized structures that perform a variety of life functions.*

L.5.B.1- *Students know plants and animals have structures that enable them to grow, reproduce, and survive.*

L.12.B- *Students understand that all life forms, at all levels or organizations, use specialized structure and similar processes to meet life's needs.*

Science: Life Science: Organisms and Their Environment

L.5.C- *Students understand that there is a variety of ecosystems on Earth and organisms interact within their ecosystem.*

L.5.C.2- *Students know organisms interact with each other and with the non-living parts of their ecosystem.*

L.5.C.4- *Students know all organisms, including humans, can cause changes in their environments.*

L.5.C.5- *Students know plants and animals have adaptations allowing them to survive in specific ecosystems.*

L.8.C- *Students understand how living and non-living components of ecosystems interact.*

English Language Arts:

4.5.5- *Make connections to self, other text, and/ or the world.*

Use information to answer specific questions.

Develop hypotheses based on information.

Summarize information.

4.12.1- Evaluate information from illustrations, graphs, charts, titles, text boxes, diagrams, headings, maps.

Social Studies: Geography

3.2.3- Identify some basic elements of a simple ecosystem, such as plants and animals.

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life with different ecosystems.

Wet n' Wild, p. 99

Grade Level K-12

Summary- Many people think wetlands are dangerous places full of mosquitoes, monsters, and poisonous snakes. Let your students see firsthand that the creatures living in wetlands are ones we enjoy, need, and want to protect. Students will collect and observe wetland animals and make a wildlife field guide.

Objectives- Students will describe the living and non-living components of wetland habitats.

Science: Nature of Science: Scientific Inquiry

N.2.A- Students understand that science is an active process of systematically examining the natural world.

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.2.A.2- Students know tools can be used safely to gather data and extend the senses.

N.5.A.1- Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method.

N.8.A- Students understand that scientific knowledge requires critical consideration of verifiable evidence obtained from inquiry and appropriate investigations.

N.12.A.2- Students know scientist maintain a permanent record of procedures, data, analyses, decisions, and understandings scientific investigations.

Science: Nature of Science: Science, Technology, and Society

N.2.B.2- Students know that, in science, it is helpful to work in a team and share finding with others.

Science: Life Science: Structure of Life

L.2.B- Students understand that living things have identifiable characteristics.

L.2.B.1- Students know humans and other animals use their senses to know their world.

Science: Life Science: Organisms and Their Environment

L.2.C- Students understand that living things live in different places.

L.5.C- Students understand that there is a variety of ecosystems on Earth and organisms interact within their ecosystems.

L.12.C.2- Students know relationships of organisms and their physical environment.

Science: Life Science: Diversity of Life

L.2.D- *Students understand that there are many living things on Earth.*

L.2.D.1- Students know plants and animals can be sorted by observable characteristics and behaviors.

L.5.D- *Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.*

L.5.D.1- Students know animals and plants can be classified according to their observable characteristics.

L.8.D.1- Students know species can be identified and classified based upon their characteristics.

English Language Arts:

1.K.4- Comprehend vocabulary using pictures, symbols, environmental print.

Build vocabulary using pictures and symbols.

5.12.7- Prepare a legible final draft to display or share.

Select a publishing format appropriate to the audience and purpose.

Social Studies: Geography

3.5.3- Identify the parts of different ecosystems including soil, climate, plant life, and animal life.

Arts: Visual Arts

1.5.3- Create artworks using various media, techniques, and processes to communicate ideas.

Who's Clues?, p. 104

Grade Level K-12

Summary- Putting together evidence (clues) to solve a mystery is fun, and it's also part of a scientific approach to problem-solving. Students look for and try to identify animal tracks and other signs of wildlife. They make inferences about the source of the signs and the circumstances under which they were left.

Objectives- Students will: observe and identify clues to make inferences about the types of wildlife present in an area, as well as their behavior. They will describe some interrelationships between animals and their environment.

Science: Nature of Science: Scientific Inquiry

N.2.A- *Students understand that science is an active process of systematically examining the natural world.*

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.5.A.1- Students know scientific progress is made by conducting careful investigation, recording data, and communicating the results in an accurate method.

N.8.A.3- Students know how to draw conclusions from scientific evidence.

N.8.A.3- Students know different explanations can be given for the same evidence.

Science: Nature of Science: Science, Technology, and Society

N.2.B.1- Students know science engages men and women of all ages and backgrounds.

N.2.B.2- Students know that, in science, it is helpful to work in a team and share findings with others.

Science: Life Science: Structure of Life

L.2.B- *Students understand that living things have identifiable characteristics.*

L.2.B.1- Students know humans and other animals use their senses to know their world.

L.12.B- *Students understand that all life forms, at all levels of organizations use specialized structure and similar processes to meet life's needs.*

Science: Life Science: Organisms and Their Environment

L.2.C.1- Students know plants and animals need certain resources for energy and growth.

L.2.C.2- Students know a habitat includes food, water, shelter, and space.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.12.C.1- Students know relationships of organisms and their physical environment.

Science: Life Science: Diversity of Life

L.2.D- *Students understand that there are many kinds of living things on Earth*

L.2.D.1- Students know plants and animals can be sorted by observable characteristics and behaviors.

L.5.D- *Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.*

L.5.D.1- Students know animals and plants can be classified according to their observable characteristics.

English Language Arts:

1.K.4- Comprehend vocabulary using pictures, symbols, environmental print.

Build vocabulary using pictures and symbols.

8.1.3- Speak clearly with prosody.

Communicate information to small and large groups.

With assistance, communicate information that maintains a clear focus.

Communicate statements that express an opinion.

6.2.9- Write sentences that formulate a question, record information, answer a research question.

4.3.6- Make and revise predictions based on evidence.

Make inferences and draw conclusion based on evidence.

Distinguish between fact and opinion.

8.3.2- Use precise language to describe feelings, experiences, observations, ideas.

Apply Standard English to communicate ideas.

8.3.4- Contribute to conversations and discussions about a given topic.

Respond to conversations and discussions about a given topic.

Ask relevant questions to clarify information.

4.5.7- Read and follow directions to complete tasks or procedures.

Social Studies: Geography

3.2.3- Identify some basic elements of a simple ecosystem, such as plants and animals.

3.3.1- Recognize that plants and animals have habitats on both land and in water.

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.5.3- Identify the parts of different ecosystems including soil, climate, plant life, and animal life.

3.5.4- Describe the biodiversity of different ecosystems on Earth.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life within different ecosystems.

Marsh Market, p. 109

Grade Level 2-8

Summary- Students construct a “living” wetland food web, then create their own web by tracing components of their lunches.

Objectives- Students will: appreciate the interdependence of the organisms, including humans, involved in a food web, and make the connection between the importance of natural resources and the ways we impact them.

Science: Nature of Science: Scientific Inquiry

N.2.A- *Students understand that science is an active process of systematically examining the natural world.*

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.2.A.3- Students know observable patterns can be used to predict future events or sort items.

N.5.A- *Students understand that science involves asking and answering question and comparing the answers to what scientist know about the world.*

N.5.A.6- Students know models are tools for learning about the things they are meant to resemble

N.5.A.7- Students know observable patterns can be used to organize items and ideas.

N.8.A.2- Students know how to critically evaluate information to distinguish between fact and opinion.

N.8.A.3- Students know different explanations can be given for the same evidence.

Science: Nature of Science: Science, Technology, and Society

N.2.B.1- Students know science engages men and women of all ages and backgrounds.

N.2.B.2- Students know that, in science, it is helpful to work in a team and share finding with others.

Science: Life Science: Organisms and Their Environment

L.2.C.1- Students understand that living things live in different places.

L.5.C- *Students understand that there is a variety of ecosystems on Earth and organisms interact within their ecosystems.*

L.5.C.1- Students know the organization of simple food webs.

L.5.C.3- Students know changes to an environment can be beneficial of detrimental to different organisms.

L.5.C.4- Students know all organisms, including humans, can cause changes in their environment.

L.8.C.1- Students know how matter and energy are transferred through food webs in an ecosystem.

L.8.C.2- Students know how to characterize organisms in any ecosystem by their functions.

L.8.C.3- Students will evaluate how changes in environments can be beneficial of harmful.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

Science: Life Science: Diversity of Life

L.2.D- *Students understand that there are many kinds of living things on Earth.*

L.5.D- *Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.*

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

E.5.A.1- Students know the Sun is the main source of energy for planet Earth.

Science: Earth and Space Science: Earth's Composition and Structure

E.2.C.1- Students know Earth is composed of different kinds of materials (e.g. rocks, soils, water).

English Language Arts:

1.K.4- Comprehend vocabulary using pictures, symbols, environmental print.

Build vocabulary using pictures and symbols.

6.1.1- Draw or write to communicate.

7.1.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions.

6.2.9- Write sentences that formulate a question, record information, answer a research question.

7.2.2- Listen to and respond to oral communication.

7.2.5- Actively listen to a speaker.

Listen to and participate in conversations.

8.5.4- Contribute to conversations and discussions about a given topic.

Respond to questions to clarify information and extend ideas.

Distinguish between relevant and irrelevant information.

Social Studies: Geography

1.3.4- Construct a simple map, including title, symbols, and directions.

5.3.6- Describe ways humans depend on natural resources.

5.8.7- Select a resource and evaluate different viewpoints regarding its use.

Arts: Visual Arts

3.3.2- Create artwork that demonstrates choice of subject matter and symbols to communicate meaning.

The Wetland Gourmet, p.112

Grade Level K-12

Summary- Students go to the kitchen to discover the fruits of a wetland

Objectives- Students will: appreciate wetland environments as incredible food sources, tune up their cooking skills!

Science: Nature of Science: Scientific Inquiry

N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.

Science: Nature of Science: Science, Technology, and Society

N.2.B.1- Students know science engages men and women of all ages and backgrounds.

Science: Life Science: Structure of Life

L.2.B.1- Students know humans and other animals use their senses to know their world.

Marsh Mystery, p.116

Grade Level 5-12

Summary- Students read a mystery story and, to solve the mystery, play a game that demonstrates bioaccumulation.

Objectives- Students will: be introduced to the concept of bioaccumulation, discuss factors contributing to pollution of resources.

Science: Nature of Science: Scientific Inquiry

N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.

N.5.A.7- Students know observable patterns can be used to organize items and ideas.

N.8.A- *Students understand that scientific knowledge requires critical consideration of verifiable evidence obtained from inquiry and appropriate investigations.*

N.8.A- Students know how to conduct a controlled experiment.

N.12.A.5- Students know models and modeling can be used to identify and predict cause-effect relationships.

Science: Nature of Science: Science, Technology, and Society

N.8.B- *Students understand the interactions of science and society in an ever-changing world.*

N.8.B.1- Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.

N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

N.12.B.1- Students know science, technology, and society influenced one another in both positive and negative ways.

N.12.B.2- Students know consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.

N.12.B.4- Students know scientific knowledge builds on previous information.

Science: Life Science: Organisms and Their Environment

L.5.C.1- Students know the organization of simple food webs.

L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.

L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.

L.5.C.4- Students know that all organisms, including humans, can cause changes in their environments.

L.8.C- *Students understand how living and non-living components of ecosystems interact.*

L.8.C.1- Students know how matter and energy are transferred through food webs in an ecosystem.

L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.12.C- *Students understand that ecosystems display patterns of organization, change, and stability as a result of the interactions and interdependencies among the living and non-living components of the Earth.*

L.12.C.2- Students know how changes in an ecosystem can affect biodiversity's contribution to an ecosystem's stability.

English Language Arts:

3.5.1- Explain setting, sequence of events, conflict, climax, resolution, turning point.

Describe internal and external conflict.

Describe how one event may cause another event.

Make inferences and draw conclusions about setting and plot based on evidence.

2.12.3- Select after reading strategies appropriate to text and purpose to recall details, restate main ideas, organize information, record information, synthesize text, evaluate text, evaluate the effectiveness of reading strategies.

3.12.8- Make and revise predictions based on evidence.

3.12.9- Make connections to self, other text, and/ or the world.

Use information to answer specific questions.

Summarize information.

Synthesize information.

Paraphrase information.

8.12.2- Use precise language to describe and elicit feelings, experiences, observations, ideas.

Apply Standard English to communicate ideas.

8.12.4- Participate in conversations to solve problems by identifying, synthesizing and evaluating data.

Respond to questions with specific evidence in support of an opinion.

Ask relevant questions to generate possible solutions to a problem.

Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life within different ecosystems.

3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.

Treatment Plants, p. 120

Grade Level 2-12

Summary- Demonstrate the uptake of pollutants into plant tissues.

Objectives- Students will: describe how plants remove pollutants from the water, analyze the limitations of this ability when wetlands are overloaded with pollutants from the surrounding land.

Science: Nature of Science: Scientific Inquiry

N.5.A- *Students understand that science involves asking and answering question and comparing the answers to what scientists know about the world.*

N.5.A.2- Students know how to compare the results of their experiments to what they already know about the world.

N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.

N.8.A.3- Students know different explanations can be given for the same evidence.

Science: Nature of Science: Science, Technology, and Society

N.8.B- *Students understand the interactions of science and society in an ever-changing world.*

N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

N.12.B.1- Students know science, technology, and society influenced one another in both positive and negative ways.

Science: Life Science: Structure of Life

L.5.B- Students understand that living things have specialized structures that perform a variety of life functions.

Science: Life Science: Organisms and Their Environment

L.5.C- *Students understand that there is a variety of ecosystems on Earth and organisms interact within their ecosystems.*

L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.

L.8.C- *Students understand how living and non-living components of ecosystems interact.*

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

L.12.C.1- Students know relationships of organisms and their physical environment.

L.12.C.2- Students know how change in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.

Social Studies: Geography

4.2.9- Identify places where cooperation and conflict take place.

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life within different ecosystems.

3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.

The Plant Key is All Wet!, p. 123

Grade Level 3-12

Summary- Use a flow chart key to classify students, then use dichotomous keys to identify wetland plants.

Objectives- Students use a flow chart of dichotomous key to classify plants or other objects.

Science: Nature of Science: Scientific Inquiry

N.5.A.7- Students know observable patterns can be used to organize items and ideas.

N.8.A.1- Students know how to identify and critically evaluate information in data, tables, and graphs.

N.8.A.3- Students know different explanations can be given for the same evidence.

N.8.A.7- Students know there are multiple methods for organizing items and information.

N.12.A- *Students understand that a variety of communication methods can be used to share scientific information.*

N.12.A.1- Students know tables, charts, illustrations and graphs can be used in making arguments and claims in oral and written presentations.

Science: Nature of Science: Science, Technology, and Society

N.5.B.3- Students know the benefits of working with a team and sharing findings.

Science: Life Science: Heredity

L.5.A.4- Students know that, while offspring resemble their parents and each other, they also exhibit differences in characteristics.

Science: Life Science: Structure of Life

L.5.B- *Students understand that living things have specialized structures that perform a variety of life functions.*

Science: Life Science: Organisms and Their Environment

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.12.C.1- Students know relationships of organisms and their physical environment.

Science: Life Science: Diversity of Life

L.5.D- *Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.*

L.5.D.1- Students know animals and plants can be classified according to their observable characteristics.

L.5.D.3- Students know differences among individuals within a species give them advantages and/or disadvantages in surviving and reproducing.

English Language Arts:

1.4.5- Apply knowledge of high frequency words in text to build fluency and comprehension.

Identify content-specific vocabulary in text.

4.5.1- Identify the purpose of and gain information from illustrations, graphs, charts, titles, text boxes, diagrams, headings, maps.

3.5.9- Make connections to self, other text, and/ or the world.

Use information to answer specific questions.

7.12.5- Actively listen to oral communications.

Listen to and participate in conversations.

Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

Mathematics

4.2.9- Sort and classify objects by two or more attributes.

Wetland Wheel, p.129

Grade Level 4-12

Summary- Students construct a Wetland Wheel with all the answers!

Objectives- Students will classify selected wetland plants and learn to recognize those plants indigenous to wetlands.

Science: Nature of Science: Scientific Inquiry

N.5.A.4- Students know graphic representations of recorded data can be used to make predictions.

N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.

N.8.A.7- Students know there are multiple methods for organizing items and information.

Science: Life Science: Diversity of Life

L.5.D- *Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.*

L.5.D.1- Students know animals and plants can be classified according to their observable characteristics.

Arts: Visual Arts

1.5.3- Create artworks using different media, techniques, and processes to communicate ideas.

6.12.3- Create works of art that reflect the research of multiple disciplines.

Tracking Plants and Keeping Track, p.138

Grade Level 5-12

Summary-Use to sampling methods to collect specimens, then preserve organize, and display the collection.

Objectives- Students will: name and identify wetland plants, practice sampling procedures used in taking plant inventories, and describe a plant community based on species collected.

Science: Nature of Science: Scientific Inquiry

N.5.A- *Students understand that science involves asking and answering questions and comparing the answers to what scientists know about the world.*

N.5.A.1- Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method.

N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

N.5.A.7- Students know observable patterns can be used to organize items and ideas.

N.8.A- *Students understand that scientific knowledge requires critical consideration of verifiable evidence obtained from inquiry and appropriate investigations.*

N.8.A.7- Students know there are multiple methods for organizing items and information.

N.12.A.2- Students know scientist maintain a permanent record of procedures, data, analyses, decisions, and understandings of scientific investigations.

N.12.A.5- Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.

Science: Nature of Science: Scientific Inquiry

N.12.B.4- Students know scientific knowledge builds on previous information.

English Language Arts:

4.5.7- Read and follow directions to complete tasks or procedures.

3.12.8- Make and revise predictions based on evidence.

7.12.5- Actively listen to oral communication.

Listen to and participate in conversations.

Listen to and evaluate constructive feedback.

Provide constructive feedback.

Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.12.2- Use precise language to describe and elicit feelings, experiences, observations, ideas.

Apply Standard English to communicate ideas.

8.12.4- Participate in conversations to solve problems by identifying, synthesizing, and evaluating data.

Respond to questions with specific evidence in support of an opinion.

Ask relevant questions to generate possible solutions to a problem.

Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information.

Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

2.5.6- Describe how their community and Nevada have changed over time.

3.5.4- Describe the biodiversity of different ecosystems on Earth.

Arts: Visual Arts

1.5.3- Create artworks using different media, techniques, and processes to communicate ideas.

6.12.3- Create works of art that reflect the research of multiple disciplines.

Run for the Border, p. 143

Grade Level 5-12

Summary- It is not always easy to tell where wetlands begin and end. In this activity, students will look at the most obvious indicators of the wetland/ upland border- changes in plant communities and different degrees of wetness.

Objectives- Students will: make the observations necessary to infer where wetland boundaries exist, define obvious differences in plant communities, describe conditions for wetland existence.

Science: Nature of Science: Scientific Inquiry

N.5.A.1- Students know scientific progress is made by conducting careful investigations recording data, and communicating the results in an accurate method.

N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

N.5.A.7- Students know observable patterns can be used to organize items and ideas.

N.8.A.3- Students know different explanations can be given for the same evidence.

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

E.8.A.3- Students know the properties that make water an essential component of the earth system.

Science: Earth and Space Science: Earth's Composition and Structure

E.8.C.8- Students know soils have properties, such as color, texture, and water retention, and provide nutrients for life according to how they form.

English Language Arts:

5.12.6- Edit sentences for complete sentences, combining sentences, compound sentences, complex sentences, compound-complex sentences.

Edit sentences for the elimination of fragments and run-ons.

8.12.1- Give directions to complete tasks or procedures with a focus on clarity and technical vocabulary.

Ask questions to clarify directions.

8.12.4- Participate in conversations to solve problems by identifying, synthesizing, and evaluating data.

Respond to questions with specific evidence in support of an opinion.

Ask relevant questions to generate possible solutions to a problem.

Distinguish between relevant and irrelevant information.

Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.

3.5.3- Identify the parts of different ecosystems including soil, climate, plant life, and animal life.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life within different ecosystems.

Wetland Address, p.147

Grade Level 5-10

Summary- Students identify plants and animals and their wetland habitats by analyzing clues that describe their adaptations, characteristics, and other species trivia.

Objectives- Students will recognize wetland adaptations and characteristics of some plants and animals.

Science: Life Science: Organisms and Their Environment

L.5.C.3- Students know organisms interact with each other and with the non-living parts of their ecosystem.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.12.C.1- Students know relationships of organisms and their physical environment.

Science: Life Science: Diversity of Life

L.5.D- *Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.*

L.5.D.1- Students know animals and plants can be classified according to observable characteristics.

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

E.5.A.3- Students know most of Earth's surface is covered with fresh and salt water.

E.8.A.3- Students know the properties that make water an essential component of the earth system.

English Language Arts:

4.5.7- Read and follow directions to complete tasks or procedures.

3.12.8- Make and revise predictions based on evidence.

7.12.5- Actively listen to oral communication.

Listen to and participate in conversations.

Listen to and evaluate constructive feedback.

Provide constructive feedback.

Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.12.2- Use precise language to describe and elicit feelings, experiences, observations, ideas.

Apply Standard English to communicate ideas.

8.12.4- Participate in conversations to solve problems by identifying, synthesizing, and evaluating data.

Respond to questions with specific evidence in support of an opinion.

Ask relevant questions to generate possible solutions to a problem.

Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information.

Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

3.5.3- Identify the parts of different ecosystems including soil, climate, plant life, and animal life.

4.8.9- Compare how cooperation and conflict among people contribute to political, economic, and cultural divisions on Earth's surface.

3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.

3.12.5- Propose solutions to environmental problems using the concept of ecosystem

4.12.4- Develop possible responses to changes caused by human modification of the physical environment.

Life in the Fast Lane, p. 152

Grade Level 3-8

Summary- Through a scavenger hunt and investigations of temporary wetlands in their neighborhood, students learn the benefits of, and challenges to, organisms living in temporary wetlands.

Objectives- Students will: describe physical and biological components of temporary wetlands, recognize the importance of temporary wetlands to larger ecosystems, and explain how organisms in temporary wetlands race against time to obtain water, shelter, food, and a mate.

Science: Nature of Science: Scientific Inquiry

N.8.A.1- Students know how to identify and critically evaluate information in data, tables, and graphs.

N.8.A.3- Students know different explanations can be given for the same evidence.

N.8.A.7- Students know there are multiple methods for organizing items and information.

E.8.A.3- Students know the properties that make water an essential component of the earth system.

Science: Life Science: Organisms and Their Environment

L.5.C.3- Students know organisms interact with each other and with the non-living parts of their ecosystem.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.8.C- *Students understand how living and non-living components of ecosystems interact.*

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

Science: Life Science: Diversity of Life

L.5.D- *Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.*

L.5.D.1- Students know animals and plants can be classified according to observable characteristics

English Language Arts:

4.3.6- Make and revise predictions based on evidence.

Make inferences and draw conclusion based on evidence.

Distinguish between fact and opinion.

8.3.2- Use precise language to describe feelings, experiences, observations, ideas.

Apply Standard English to communicate ideas.

8.3.4- Contribute to conversations and discussions about a given topic.

Respond to conversations and discussions about a given topic.

Ask relevant questions to clarify information.

4.5.7- Read and follow directions to complete tasks or procedures.

4.5.5- Make connections to self, other text, and/ or the world.

Use information to answer specific questions.

Develop hypotheses based on information.

Summarize information.

Social Studies: Geography

3.3.1- Recognize that plants and animals have habitats on both land and in water.

3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.5.3- Identify the parts of different ecosystems including soil, climate, plant life, and animal life.

3.5.4- Describe the biodiversity of different ecosystems on Earth.

7.3.1- Ask questions about why things are located where they are.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life within different ecosystems.

Section Three: Drip, Drop, Dribble, Splash! (water)

Activities that relate to the role of water in the wetland picture.

These include water related wetland functions, filtration experiments, demonstrations of erosion, and plant productivity.

A Drop in the Bucket, p. 158

Grade Level 6-8

Summary- *What is abundant and rare at the same time?* By estimating and calculating the percent of available fresh water on Earth, students understand that this resource is limited and must be conserved.

Objectives- Students will: calculate the percentage of freshwater available for human use and explain why water is a limited resource.

Science: Nature of Science: Scientific Inquiry

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.2.A.3- Students know observable patterns can be used to predict future events or sort items.

N.8.A.1- Students know how to identify and critically evaluate information in data, tables, and graphs.

N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.

Science: Life Science: Organisms and Their Environment

L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

E.2.A.2- Students know water on Earth can be a liquid (rain) or a solid (snow and ice), and can go from back and forth from one form to another.

E.8.A.2- Students know how the processes involved in the water cycle affect climatic patterns.

English Language Arts:

4.2.1- Identify the purpose of and gain information from illustrations, graphs, charts, titles, text boxes, diagrams, headings, table of contents. With assistance, gain information from glossaries, indices, maps.

4.6.1- Evaluate information from illustrations, graphs, charts, titles, text boxes, diagrams, headings, maps.

7.K.1, 7.1.1, 7.2.1- - Listen for a variety of purposes including gaining information, being entertained, understanding directions. With assistance, listen for and identify main idea, purpose, messages.

7.8.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and summarize ideas and supporting details.

7.K.2, 7.1.2, 7.2.2- Listen to and respond to oral communication.

7.8.2- Listen to and evaluate oral communications for content, delivery, point of view, ideas, purpose, value.

7.K.5, 7.1.5, 7.2.5- Actively listens to a speaker. Listens to and participate in conversations.
7.8.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback.

Social Studies: Geography

- 1.2.3- Recognize geographic information from maps, globes, photographs, and graphs.
- 3.2.1- Describe the weather conditions typical to each season in the community and in other places.
- 3.8.1- Explain how the physical processes within each of the four basic systems influence the Earth's surface.
- 5.8.3- Describe and predict the regional or global impact of changes in the physical environment.
- 5.2.4- Identify how people shape the physical environment at home and school.
- 5.8.4- Describe the changes that result from human modification of the physical environment.

Mathematics:

- 1.8.2- Translate among fraction, decimals, and percents, including percents greater than 100 and percents less than 1. Explain and use the relationship among equivalent representations of rational number in mathematical and practical situations.
- 1.2.3- Read, write, compare, and order numbers from 0-999. Identify ordinal positions first to twentieth. Read and write number words to 20. Create, compare, and describe sets of objects and numbers from 0-999 as greater than, less than, or equal to ($>$, $<$, $=$).
- 1.6.3- Read, write, compare, and order groups of fractions, groups of decimals, and groups of percents.
- 1.2.8- Generate and solve one-step addition and subtraction problems based on practical situations. Model addition and subtraction in a variety of ways using pictorial representations and symbols to illustrate subtraction of sets, comparison of sets, and missing addends. Reinforce the use of mathematical vocabulary and symbols to describe addition, subtraction, and equality.
- 1.6.7- Calculate using fractions, decimals, and percents in mathematical and practical situations. Use order of operations to evaluate expressions with integers.

Soak It Up!, p. 162

Grade Level 3-9

Summary- Students increase their understanding of wetlands when they use a household sponge to demonstrate how wetlands capture, store, and release water.

Objectives- Students will describe hoe some groundwater and surface-water wetlands are fed. Students will identify areas in their community that may be wetlands.

Science: Nature of Science: Scientific Inquiry

- N.2.A.3- Students know observable patterns can be used to predict future events or sort items.
- N.5.A.6- Students know models are tools for learning about the thinks they are meant to resemble.
- N.8.A.6- Students know scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists.
- N.12.A.5- Students know models and modeling can be used to identify and predict cause-and-effect relationships.

Science: Nature of Science: Science, Technology, and Society

N.2.B.2- Students know that, in science, it is helpful to work with a team and sharing findings with others.

N.5.B.3- Students know the benefits of working with a team and sharing findings.

N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

Science: Physical Science: Forces and Motion

P.2.B.4- Students know things fall to the ground unless something held them up.

P.5.B.5- Students know Earth's gravity pulls any object toward it without touching it.

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

E.5.A.4- Students know the role of water in many phenomena related to weather (e.g. Thunderstorms, snowstorms, flooding, drought).

English Language Arts:

7.K.1, 7.1.1, 7.2.1- - Listen for a variety of purposes including gaining information, being entertained, understanding directions. With assistance, listen for and identify main idea, purpose, messages.

7.8.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and summarize ideas and supporting details.

7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding direction. Listen for and summarize ideas and supporting details.

7.K.2, 7.1.2, 7.2.2- Listen to and respond to oral communication.

7.8.2- Listen to and evaluate oral communications for content, delivery, point of view, ideas, purpose, value.

7.12.2- Listen to and evaluate oral communications for content, delivery, point of view, ideas, purpose, value.

7.K.5, 7.1.5, 7.2.5- Actively listens to a speaker. Listens to and participate in conversations.

7.8.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback.

7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding direction. Listen for and summarize ideas and supporting details.

7.12.3- Expand vocabulary through listening.

7.12.5- Actively listen to oral communications.

Listen to and participate in conversations.

Listen to and evaluate constructive feedback.

Provide constructive feedback

Social Studies: Geography

2.2.1- Identify basic types of landforms and bodies of water, such as mountains, valleys, islands, lakes, and rivers.

3.3.3- Identify different types of simple ecosystems, such as ponds, fields, streams, or fields.

3.3.4- Locate different ecosystems in their community.

5.3.6- Describe ways humans depend on natural resources.

5.12.6- Analyze the patterns of use, the changing distribution, and the relative importance of Earth's resources.

7.3.1- Ask questions about why things are located where they are.

7.2.5- Display the results of a geographic inquiry.

7.12.5- Complete a geographic inquiry.

Salt Marsh Players, p. 165

Grade Level 3-6

Summary- How would you react if, for a part of each day, your house was covered with water? Students role play how organisms adapt to life in a salt marsh- a coastal, marine habitat that is alternately flooded and drained by tides.

Objectives- Students will demonstrate how various salt marsh plants and animals adapt to environmental conditions. Students will recognize various plants and animals that live in salt marshes.

Science: Nature of Science: Scientific Inquiry

N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.

N.8.A.6- Students know scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists.

Science: Nature of Science: Science, Technology, and Society

N.5.B.3- Students know the benefit of working with a team and sharing findings.

Science: Physical Science: Forces and motion

P.5.B.5- Students know Earth's gravity pulls any object toward it without touching it.

P.8.B.3- Students know every object exerts gravitational force on every other object, and the magnitude of this force depends on the mass of the objects and their distance from one another.

Science: Life Science: Heredity

L.5.A.1- Students know some physical characteristics and behaviors that are inherited in animals and plants.

L.5.A.5- Students know some animal behaviors are learned.

L.8.A.1- Students know some characteristics of an organism are the result of a combination of interaction with the environment and genetic information.

Science: Life Science: Structure of Life

L.5.B.2- Students know living things have predictable life cycles.

Science: Life Science: Organisms and Their Environment

L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

Science: Life Science: Diversity of Life

L.5.D.1- Students know animals and plants can be classified according to their observable characteristics.

L.8.D.1- Students know species can be identified and classified based upon their characteristics.

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

E.5.A.3- Students know most of the Earth's surface is covered with fresh or salt water.

E.8.A.3- Students know the properties that make water an essential component of the earth system.

Science: Earth and Space Science: Solar System and the Universe

E.5.B.2- Students know the solar system includes the Sun, planets, and moons.

E.5.B.4- Students know there are cyclical patterns of observable objects in the solar system.

E.8.B.7- Students know regular and predictable motions of Earth around the Sun and the Moon around the Earth explain such phenomena as the day, the year, phases of the Moon, and eclipses.

English Language Arts:

1.3.3, 1.4.3- Decode words in text using phonics and structural analysis through short/long vowels, digraphs, diphthongs, base words, suffixes, prefixes, compound words, blends, word families, spelling patterns, syllables.

1.5.3, 1.6.3- Decode unknown words in text using structural analysis through spelling patterns, base words, root words, suffixes, prefixes, syllables, compound words.

1.3.5, 1.4.5, 1.5.5, 1.6.5- Apply knowledge of high frequency words in text to build fluency and comprehension. Apply knowledge of content-specific vocabulary in text to build comprehension. Read fluently aloud and/or silently with a focus on prosody, accuracy, automaticity, reading rate.

2.3.1, 2.4.1, 2.5.1, 2.6.1- Select before reading strategies appropriate to text and purpose to preview text, access prior knowledge, set purpose for reading, make predictions, determine reading rate, determine text type.

2.3.3, 2.4.3, 2.5.3, 2.6.3- Select after reading strategies appropriate to text and purpose to recall details, restate main ideas, organize information, record information, synthesize text, evaluate text, evaluate the effectiveness of reading strategies.

4.3.1, 4.4.1, 4.5.1, 4.6.1- Identify the purpose and evaluate information from illustrations, graphs, charts, titles, text boxes, diagrams, headings, maps. Evaluate information from table of contents, glossaries, indices. Identify and explain the use of bold-faced words, underlined words, highlighted words, italicized words. Identify and explain the use of abbreviations, acronyms, parenthetical expressions.

4.3.6, 4.4.6, 4.5.6- Make and revise predictions based on evidence. Make inferences and draw conclusions based on evidence. Analyze the accuracy of facts. Distinguish between fact and opinion. With assistance, determine accuracy of evidence. With assistance, verify information by referencing other sources.

7.3.1, 7.4.1, 7.5.1, 7.6.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and explain the effect of the speaker's attitude on audience.

7.3.5, 7.3.5, 7.5.5, 7.6.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention to solve problems by identifying, synthesizing, and evaluating data.

8.3.2, 8.4.2, 8.5.2, 8.6.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.3.4, 8.4.4, 8.5.4, 8.6.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. With assistance, negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

2.5.3- Describe the characteristics of their community and Nevada from different perspectives.

3.3.2- Recognize that plants and animals have habitats on both land and in water.

3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.5.4- Describe the biodiversity of different ecosystems on Earth.

3.3.5- Identify the living and nonliving elements of an ecosystem.

4.5.2- Identify the push-pull factors influencing human migration and settlement.

4.3.7- Compare the wants and needs of people in different communities and the means used to fulfill those wants and needs.

5.3.6- Describe ways humans depend on natural resources.

5.5.1- Describe ways in which changes in the physical environment affect humans.

7.3.1- Ask questions about why things are located where they are.

7.5.1- Ask geographic questions about the origin and significance of spatial patterns.

7.3.5- Create a visual model to illustrate the results of a geographic inquiry.

7.5.5- Draw a conclusion by presenting geographic information in an oral or written report accompanied by maps or graphics.

Water We Have Here?, p. 174

Grade Level 2-12

Summary- Students perform a series of scientific measurements and tests on wetland water.

Objectives- Students will measure and monitor water conditions (pH, temperature, salinity, dissolved oxygen, turbidity, rate of flow, and excess nutrients) in a local wetland. Students will draw conclusions about a wetland based on water analysis measurements.

Science: Nature of Science: Scientific Inquiry

N.5.A.1- Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method.

N.5.A.2- Students know how to compare the results of their experiments to what scientists already know about the world.

N.8.A.1- Students know how to identify and critically evaluate information in data, tables, and graphs.

N.8.A.3- Students know how to draw conclusions from scientific evidence.

N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.

N.12.A.3- Students know repeated experimentation allows for statistical and unbiased conclusions.

Science: Nature of Science: Science, Technology, and Society

N.5.B.2- Students know technologies impact society, both positively and negatively.

N.5.B.3- Students know the benefits of working with a team and sharing findings.

Science: Physical Science: Matter

P.5.A.3- Students know materials can be classified by their observable physical and chemical properties (e.g. Magnetism, conductivity, density, and solubility)

P.12.A.5- Students know chemical reactions can take place at different rates, depending on a variety of factors (i.e. Temperature, concentration, surface area, and agitation).

P.5.A.6- Students know materials are composed of parts that are too small to be seen without magnification.

Science: Life Science: Structure of Life

L.5.B.2- Students know living things have predictable life cycles.

Science: Life Science: Structure of Life

L.5.C.2- Students know organisms interact with each other and with the nonliving parts of their ecosystem.

L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.

L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

L.12.C.2- Students know how changes in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.

L.12.C.3- Students know the amount of living matter an environment can support is limited by the availability of matter, energy, and the ability of the ecosystem to recycle materials.

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

E.8.A.3- Students know the properties that make water an essential component of the earth system.

English Language Arts:

1.2.3, 1.3.3, 1.4.3- Decode words in text using phonics and structural analysis through short/long vowels, digraphs, diphthongs, base words, suffixes, prefixes, compound words, blends, word families, spelling patterns, syllables.

1.5.3, 1.6.3- Decode unknown words in text using structural analysis through spelling patterns, base words, root words, suffixes, prefixes, syllables, compound words.

1.2.5, 1.3.5, 1.4.5, 1.5.5, 1.6.5- Apply knowledge of high frequency words in text to build fluency and comprehension. Apply knowledge of content-specific vocabulary in text to build comprehension. Read fluently aloud and/or silently with a focus on prosody, accuracy, automaticity, reading rate.

2.2.1, 2.3.1, 2.4.1, 2.5.1, 2.6.1, 2.7.1, 2.8.1, 2.12.1- Select before reading strategies appropriate to text and purpose to preview text, access prior knowledge, set purpose for reading, make predictions, determine reading rate, determine text type.

2.2.3, 2.3.3, 2.4.3, 2.5.3, 2.6.3, 2.7.3, 2.8.3, 2.12.3- Select after reading strategies appropriate to text and purpose to recall details, restate main ideas, organize information, record information, synthesize text, evaluate text, evaluate the effectiveness of reading strategies.

4.2.1, 4.3.1, 4.4.1, 4.5.1, 4.6.1, 4.7.1, 4.8.1, 4.12.1- Identify the purpose and evaluate information from illustrations, graphs, charts, titles, text boxes, diagrams, headings, maps. Evaluate information from table of contents, glossaries, indices. Identify and explain the use of bold-faced words, underlined words, highlighted words, italicized words. Identify and explain the use of abbreviations, acronyms, parenthetical expressions.

4.2.6, 4.3.6, 4.4.6, 4.5.6- Make and revise predictions based on evidence. Make inferences and draw conclusions based on evidence. Analyze the accuracy of facts. Distinguish between fact and opinion. With assistance, determine accuracy of evidence. With assistance, verify information by referencing other sources.

4.2.7, 4.3.7, 4.4.7, 4.5.7, 4.6.7, 4.7.7, 4.8.7, 4.12.7- Read and follow directions to complete tasks or procedures. Evaluate directions to complete tasks or procedures for clarity, format, technical vocabulary, text features.

7.2.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.2.3, 7.3.4, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.

7.2.5, 7.3.5, 7.3.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.2.2, 8.3.2, 8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.2.4, 8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

3.3.2- Recognize that plants and animals have habitats on both land and in water.

3.2.3- Identify some basic elements of a simple ecosystem, such as plants and animals.

3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.5.5- Investigate an ecosystem by asking and answering geographic questions.

- 3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.
- 3.12.5- Propose solutions to environmental problems using the concept of ecosystems.
- 4.2.3- Categorize different ways to move people, goods, and ideas.
- 4.3.3- Identify transportation and communication networks in daily life.
- 5.2.4- Identify how people shape the physical environment at home and school.
- 5.3.4- Compare different ways in which people modify the physical environment.
- 5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.
- 5.8.4- Describe the changes that result from human modification of the physical environment.
- 5.12.4- Develop possible responses to changes caused by human modification of the physical environment.

Mathematics:

- 1.2.1- Identify, use, and model place value positions of 1's, 10's, and 100's. Identify the value of a given digit in the 1's, 10's, and 100's place.
- 1.8.1- Represent numbers using scientific notation in mathematical and practical situations.
- 1.4.3- Read, write, compare, and order whole numbers. Read and write number words.
- 1.8.3- Compare and order real numbers, including powers of whole numbers in mathematical and practical situations.
- 1.4.7- Add and subtract multi-digit numbers. Multiply and divide multi-digit numbers by a one-digit whole number with regrouping, including monetary amounts as decimals.
- 1.4.8- Generate and solve addition, subtraction, multiplication, and division problems using whole numbers in practical situations.
- 2.3.2- Model, explain, and solve open number sentences involving addition, subtraction, and multiplication facts. Use variables and open sentences to express relationships.
- 2.4.3- Complete number sentences with the appropriate words and symbols (+, -, x, ÷, >, <, =).
- 3.2.1- Compare, order, and describe objects by various measurable attributes for length, weight, and temperature.
- 3.3.1- Compare, order, and describe objects by various measurable attributes for area and volume/capacity.
- 3.3.2- Select and use appropriate units of measure. Measure to a required degree of accuracy (to the nearest $\frac{1}{2}$ unit).
- 3.4.1- Estimate and convert units of measure for length, area, and weight within the same measurement system (customary and metric). Estimate temperature in practical situations.
- 3.4.2- Measure length, area, temperature, and weight to a required degree of accuracy in customary and metric systems.
- 3.8.1- Estimate and convert units of measure for mass and capacity within the same measurement system (customary and metric).
- 3.8.2- Demonstrate an understanding of precision, error, and tolerance when using appropriate measurement tools.
- 3.12.1- Estimate and convert between customary and metric systems.
- 3.12.2- Justify, communicate, and differentiate between precision, error, and tolerance in practical problems.
- 5.2.1- Collect, record, and classify data in response to questions posed by teacher and/or students. Use tables, pictographs, and bar graphs to represent data.

5.3.1- Pose questions that can be used to guide data collection, organization, and representation. Use graphical representations, including number lines, frequency tables, and pictographs to represent data.

5.4.1- Pose questions that can be used to guide the collection of categorical and numerical data. Organize and represent data using a variety of graphical representations including frequency tables and line plots.

5.7.1- Formulate questions that guide the collection of data. Organize, display, and read data using the appropriate graphical representations (with and without technology).

5.7.2- Interpret graphical representations of data to describe patterns, trends, and data distribution.

5.12.1- Organize statistical data through the use of tables, graphs, and matrices (with and without technology)

5.12.2- Select and apply appropriate statistical measures in mathematical and practical situations.

5.3.5- Use informal concepts of probability (certain, likely, unlikely, impossible) to make predictions about future events.

Nutrients: Nutrition or Nuisance?, p. 188

Grade Level K-8

Summary- Students play innovative games that illustrate the movement of chemicals, nutrients, and energy in a marsh.

Objectives- Students will interpret the benefits of nutrients and the dangers of excess nutrients. Students will describe the filtering ability of wetland plants.

Science: Physical Science: Matter

P.2.A.1- Students know matter can exist as solids and as liquids.

P.5.A.1- Students know matter exists in different states (i.e. Solid, liquid, gas) which have distinct physical properties.

P.2.A.2- Students know some properties of materials can be changed by heating, freezing, mixing, cutting, or bending.

P.2.A.3- Students know matter can be categorized by observable properties, such as color, size, shape, and weight.

P.5.A.3- Students know materials can be classified by their observable physical and chemical properties (e.g. Magnetism, conductivity, density, and solubility).

P.2.A.4- Students know different objects are made of many different types of materials.

P.5.A.4- Students know that by combining two or more materials, the properties of that material can be different from the original materials.

P.8.A.3- Students know methods for separating mixtures based on the properties of the components.

P.8.A.4- Students know atoms often combine to form molecules, and that compounds form when two or more different kinds of atoms chemically bond.

P.5.A.6- Students know materials are composed of parts that are too small to be seen without magnification.

P.8.A.6- Students know matter is made up of tiny particles called atoms.

Science: Life Science: Structure of Life

L.2.B.1- Students know humans and other animals use their senses to know their world.

L.5.B.1- Students know plants and animals have structures that enable them to grow, reproduce, and survive.

L.8.B.1- Students know all organisms are composed of cells, which are the fundamental units of life.

L.8.B.2- Students know cells grow, divide, and take in nutrients which they use to provide energy for cell functions.

Science: Life Science: Organisms and Their Environment

L.2.C.1- Students know plants and animals need certain resources for energy and growth.

L.5.C.1- Students know the organization of simple food webs.

L.8.C.1- Students know how matter and energy are transferred through food webs in an ecosystem.

L.2.C.2- Students know a habitat includes food, water, shelter, and space.

L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.

L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.

L.C.8.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.2.C.3- Students know living things are found almost everywhere in the world.

L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

English Language Arts:

7.2.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.K.2, 7.1.2, 7.2.2- Listen to and respond to oral communication.

7.3.2, 7.4.2, 7.5.2, 7.6.2, 7.7.2, 7.8.2- Listen to and evaluate oral communications for content, delivery, point of view, ideas, purpose, value. Listen for and evaluate the use of public speaking techniques. Listen to and evaluate the logic of a speaker's argument(s). Listen to and provide constructive feedback on oral communications.

7.2.3, 7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3- Expand vocabulary through listening.

7.2.5, 7.3.5, 7.3.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.2.2, 8.3.2, 8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.2.4, 8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

- 3.2.3- Identify some basic elements of a simple ecosystem, such as plants and animals.
- 3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.
- 3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.
- 3.8.3- Describe the interdependence among soil, climate, plant life, and animals life within different ecosystems.
- 3.3.5- Identify the living and nonliving elements of an ecosystem.
- 5.5.1- Describe ways in which changes in the physical environment affect humans.
- 5.8.1- Describe and predict the regional or global impact of changes in the physical environment.
- 5.3.3- List tools, machines, or technologies that have changed the physical environment.
- 5.2.4- Identify how people shape the physical environment at home and school.
- 5.2.4- Compare different ways in which people modify the physical environment.

Mathematics:

- 5.K.1- Collect, organize, and record data using objects and pictures. Represent data in a variety of ways in response to questions posed by teachers.

Marsh Munchies, p. 192

Grade Level 5-8

Summary- *Be a Muskrat!* Play a calorie counting game.

Objectives- Students will understand the concepts of resource limitation and cooperative conservation.

Science: Nature of Science: Scientific Inquiry

- N.5.B.3- Students know the benefits of working with a team and sharing findings.
- N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

Science: Life Science: Heredity

- L.5.A.1- Students know some physical characteristics and behaviors that are inherited in animals and plants.
- L.5.A.2- Students know reproduction is an essential characteristic for the continuation of every species.
- L.5.A.5- Students know some animal behaviors are learned.

Science: Life Science: Organisms and Their Environment

- L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.
- L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.
- L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.
- L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.
- L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

English Language Arts:

1.5.3, 1.6.3, 1.7.3, 1.8.3- Decode unknown words in text using structural analysis through spelling patterns, base words, root words, suffixes, prefixes, syllables, compound words.

1.5.5, 1.6.5, 1.7.5, 1.8.5- Apply knowledge of high frequency words in text to build fluency and comprehension. Apply knowledge of content-specific vocabulary in text to build comprehension. Read fluently aloud and/or silently with a focus on prosody, accuracy, automaticity, reading rate.

4.5.6, 4.6.6, 4.7.6, 4.8.6- Make and revise predictions based on evidence. Make inferences and draw conclusions based on evidence. Analyze the accuracy of facts. Distinguish between fact and opinion. With assistance, determine accuracy of evidence. With assistance, verify information by referencing other sources. Analyze information from one source by referencing other sources. With assistance, predict events and/or relationships if sequence is altered. With assistance, predict events and/or relationships if chronological order is altered.

7.5.3, 7.6.3, 7.7.3, 7.8.3- Expand vocabulary through listening.

7.5.5, 7.6.5, 7.7.5, 7.8.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.5.2, 8.6.2, 8.7.2, 8.8.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.5.4, 8.6.4, 8.7.4, 8.8.4- Contribute to conversations and discussion about a given topic.

Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life with different ecosystems.

3.5.5- Investigate an ecosystem by asking and answering geographic questions.

3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.

6.5.4- Describe a geographic issue and the possible impact it could have in the future.

7.5.4- Investigate and interpret information from a variety of geographic sources.

7.8.4- Evaluate and analyze information obtained from a variety of geographic sources.

Mathematics:

1.5.3- Read, write, compare, and order integers in mathematical and practical situations.

1.8.3- Compare and order real numbers, including powers of whole numbers in mathematical and practical situations.

1.5.7- Use order of operations to evaluate expressions with whole numbers.

1.6.7, 1.7.7, 1.8.7- Calculate with real numbers to solve mathematical and practical situations. Use order of operations to solve equations in the real number system.

- 1.5.8- Generate and solve addition, subtraction, multiplication, and division problems using whole numbers and decimals in practical situations.
- 2.4.3- Complete number sentences with the appropriate words and symbols including (\geq , \leq and \neq).
- 2.6.3- Write simple expressions and equations using variables to represent mathematical situations.
- 2.7.3- Simplify algebraic expressions by combining like terms.
- 5.5.1, 5.6.1, 5.7.1- Formulate questions that guide the collection of data. Organize, display, and read data using the appropriate graphical representations (with and without technology).

Recipe for Trouble, p. 199

Grade Level 4-12

Summary- *What goes into a recipe for trouble?* Conduct a classroom experiment to test the effects of various pollutants on water environments.

Objectives- Students will describe potential effects of pollution on plants and animals. Students will classify pollution sources.

Science: Nature of Science: Scientific Inquiry

N.5.A.1- Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method.

N.5.A.2- Students know how to compare the results of their experiments to what scientists already know about the world.

N.5.A.3- Students know how to draw conclusions from scientific evidence.

N.8.A.2- Students know how to critically evaluate information to distinguish between fact and opinion.

N.12.A.2- Students know scientists maintain a permanent record of procedures, data, analyses, decisions, and understandings of scientific investigations.

N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

N.8.A.4- Students know how to design and conduct a controlled experiment.

N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.

N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.

N.8.A.6- Students know scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists.

N.12.A.6- Students know models and modeling can be used to identify and predict cause-effect relationships.

Science: Nature of Science: Science, Technology, and Society

N.5.B.2- Students know technologies impact society, both positively and negatively.

N.8.B.1- Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.

N.12.B.1- Students know science, technology, and society influenced one another in both positive and negative ways.

N.12.B.2- Students know consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.

N.5.B.3- Students know the benefits of working with a team and sharing findings.

N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

N.12.B.4- Students know scientific knowledge builds on previous information.

Science: Life Science: Structure of Life

L.5.B.1- Students know plants and animals have structures that enable them to grow, reproduce, and survive.

L.8.B.1- Students know all organisms are composed of cells, which are the fundamentals of life.

L.8.B.2- Students know cells grow, divide, and take in nutrients, which they use to provide energy for cell functions.

L.12.B.1- Students know cell structures and their functions.

L.5.B.2- Students know living things have predictable life cycles.

Science: Life Science: Organisms and Their Environment

L.5.C.1- Students know the organization of simple food webs.

L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.

L.8.C.1- Students know how matter and energy are transferring through food webs in an ecosystem.

L.12.C.1- Students know how relationships of organisms and their physical environment.

L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.

L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

L.12.C.2- Students know how changes in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.

L.12.C.3- Students know the amount of living matter an environment can support is limited by the availability of matter, energy, and the ability of the ecosystem to recycle materials.

English Language Arts:

7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.

7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive

feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

2.5.4- Identify the effects of the use of technology in different communities in the United States.

2.8.4- Describe ways in which technology affects how cultural groups use places and regions.

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life with different ecosystems.

3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.

3.5.5- Investigate an ecosystem by asking and answering geographic questions.

3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.

3.12.5- Propose solutions to environmental problems using the concept of ecosystems.

5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.

5.8.4- Describe the changes that result from human modification of the physical environment.

5.12.4- Develop possible responses to changes caused by human modification of the physical environment.

Mathematics:

5.4.1, 5.5.1, 5.6.1, 5.7.1- Formulate questions that guide the collection of data. Organize, display, and read data using the appropriate graphical representations (with and without technology).

Water Under Foot, p. 204

Grade Level 4-12

Summary- Students make a ground-water model and demonstrate its relationship to the land and to wetlands.

Objectives- Students will describe ground water as part of the water cycle. Students will visualize how ground water is stored in an aquifer. Students will describe the relationship between ground water and wetlands. Students will explain how discarded materials leach from land and contaminate ground water.

Science: Nature of Science: Scientific Inquiry

N.5.A.3- Students know how to draw conclusions from scientific evidence.

N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.

N.8.A.6- Students know scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists.

N.12.A.6- Students know models and modeling can be used to identify and predict cause-effect relationships.

Science: Nature of Science: Science, Technology, and Society

N.5.B.2- Students know technologies impact society, both positively and negatively.

N.8.B.1- Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.

N.12.B.1- Students know science, technology, and society influenced one another in both positive and negative ways.

N.12.B.2- Students know consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.

N.5.B.3- Students know the benefits of working with a team and sharing findings.

N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

N.12.B.4- Students know scientific knowledge builds on previous information.

Science: Life Science: Structure of Life

L.5.B.1- Students know plants and animals have structures that enable them to grow, reproduce, and survive.

L.5.B.2- Students know living things have predictable life cycles.

Science: Life Science: Organisms and Their Environment

L.5.C.1- Students know the organization of simple food webs.

L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.

L.8.C.1- Students know how matter and energy are transferring through food webs in an ecosystem.

L.12.C.1- Students know how relationships of organisms and their physical environment.

L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.

L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

L.12.C.2- Students know how changes in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.

L.12.C.3- Students know the amount of living matter an environment can support is limited by the availability of matter, energy, and the ability of the ecosystem to recycle materials.

English Language Arts:

- 1.4.3- Decode words in text using phonics and structural analysis through base words, suffixes, prefixes, compound words. Decode words in text using phonics and structural analysis through short/long vowels, digraphs, diphthongs, blends, word families, spelling patterns.
- 1.5.3, 1.6.3, 1.7.3, 1.8.3, 1.12.3- Decode unknown words in text using structural analysis through spelling patterns, base words, root words, suffixes, prefixes, syllables, compound words.
- 1.4.5, 1.5.5, 1.6.5, 1.7.5, 1.8.5, 1.12.5- Apply knowledge of high frequency words in text to build fluency and comprehension. Apply knowledge of content-specific vocabulary in text to build comprehension. Read fluently aloud and/or silently with a focus on prosody, accuracy, automaticity, reading rate.
- 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.
- 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.
- 7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.
- 8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.
- 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

- 2.5.4- Identify the effects of the use of technology in different communities in the United States.
- 2.8.4- Describe ways in which technology affects how cultural groups use places and regions.
- 3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.
- 3.8.3- Describe the interdependence among soil, climate, plant life, and animal life with different ecosystems.
- 3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.
- 3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.
- 3.12.5- Propose solutions to environmental problems using the concept of ecosystems.
- 5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.
- 5.8.4- Describe the changes that result from human modification of the physical environment.
- 5.12.4- Develop possible responses to changes caused by human modification of the physical environment.

Arts: Visual Arts

- 1.5.3- Create artworks using various media, techniques, and processes to communicate ideas.
- 1.8.3- Use and explain why various media, techniques, and processes are used to produce works of art that communicate ideas and experiences.
- 3.5.2- Produce a work of art that demonstrates the ability to convey meaning by integrating subject matter and symbols with ideas.

Runoff Race, p. 210

Grade Level 2-12

Summary- *How would you define water quality? Do you have the same definition as your friends?* This demonstration offers a hands-on demonstration of wetlands' ability to improve water quality by filtering out sediments.

Objectives- Students will understand how wetlands affect water quality.

Science: Nature of Science: Scientific Inquiry

- N.2.A.3- Students know observable patterns can be used to predict future events or sort items.
- N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.
- N.8.A.6- Students know scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists.
- N.12.A.6- Students know models and modeling can be used to identify and predict cause-effect relationships.

Science: Nature of Science: Science, Technology, and Society

- N.2.B.1- Students know science engages men and women of all ages and backgrounds.
- N.5.B.2- Students know technologies impact society, both positively and negatively.
- N.8.B.1- Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.
- N.5.B.3- Students know the benefits of working with a team and sharing findings.
- N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

Science: Life Science: Organisms and Their Environment

- L.2.C.2- Students know a habitat includes food, water, shelter and space.
- L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.
- L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.
- L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.
- L.C.12.1- Students know relationships of organisms and their physical world.
- L.2.C.3- Students know living things are found almost everywhere in the world.
- L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.
- L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

L.12.C.2- Students know changes in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.

English Language Arts:

7.2.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.2.3, 7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.

7.2.5, 7.3.5, 7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications.

Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.2.2, 8.2.3, 8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.2.4- Participate in group discussions following the turn-taking process.

8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

3.2.3- Identify some basic elements of an ecosystem, such as plants and animals.

3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life with different ecosystems.

3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.5.5- Investigate an ecosystem by asking and answering geographic questions.

3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.

3.12.5- Propose solutions to environmental problems using the concept of ecosystems.

5.2.4- Identify how people shape the physical environment at home and school.

5.3.4- Compare different ways in which people modify the physical environment.

5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.

5.8.4- Describe the changes that result from human modification of the physical environment.

5.12.4- Develop possible responses to changes caused by human modification of the physical environment.

Summary- Students make a model that demonstrates the flood-buffering and filtering effects of wetlands.

Objectives- Students will describe interrelationships, among precipitation, runoff, and wetlands. Students will relate the importance of wetland functions to their own needs and daily lives.

Science: Nature of Science: Scientific Inquiry

N.5.A.6- Students know models are tools for learning about the things they are meant to resemble.

N.8.A.6- Students know scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists.

N.12.A.6- Students know models and modeling can be used to identify and predict cause-effect relationships.

Science: Nature of Science: Science, Technology, and Society

N.5.B.2- Students know technologies impact society, both positively and negatively.

N.8.B.1- Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.

N.5.B.3- Students know the benefits of working with a team and sharing findings.

N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

Science: Life Science: Organisms and Their Environment

L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.

L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.

L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.C.12.1- Students know relationships of organisms and their physical world.

L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

L.12.C.2- Students know changes in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.

English Language Arts:

7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.
7.3.5, 7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.
8.2.3, 8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.
8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

3.3.1- Recognize that plants and animals have habitats on both land and in water.
3.2.3- Identify some basic elements of an ecosystem, such as plants and animals.
3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.
3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.
3.8.3- Describe the interdependence among soil, climate, plant life, and animal life with different ecosystems.
3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.
3.3.5- Identify the living and nonliving elements of an ecosystem.
3.5.5- Investigate an ecosystem by asking and answering geographic questions.
3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.
3.12.5- Propose solutions to environmental problems using the concept of ecosystems.
5.2.4- Identify how people shape the physical environment at home and school.
5.3.4- Compare different ways in which people modify the physical environment.
5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.
5.8.4- Describe the changes that result from human modification of the physical environment.
5.12.4- Develop possible responses to changes caused by human modification of the physical environment.

Arts: Visual Arts

1.5.3- Create artworks using various media, techniques, and processes to communicate ideas.
1.8.3- Use and explain why various media, techniques, and processes are used to produce works of art that communicate ideas and experiences.
1.12.3- Create works of art that demonstrate an understanding of a variety of media, **tools**, techniques, and processes (e.g. traditional and **emerging technologies**).
3.5.2- Produce a work of art that demonstrates the ability to convey meaning by integrating subject matter and symbols with ideas.

Summary- Students conduct demonstrations of mechanical and natural methods of filtering impurities from water.

Objectives- Students will describe the process used to treat drinking water. Students will identify waste products of water treatment and human and natural resources used. Students will compare the efficiency of natural versus mechanical/chemical treatment.

Science: Nature of Science: Scientific Inquiry

N.8.A.2- Students know how to critically evaluate information to distinguish between fact and opinion.

N.12.A.2- Students know scientists maintain a permanent record of procedures, data, analyses, decisions, and understandings of scientific investigations.

N.8.A.4- Students know how to design and conduct a controlled experiment.

N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.

N.8.A.6- Students know scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists.

N.12.A.6- Students know models and modeling can be used to identify and predict cause-effect relationships.

Science: Nature of Science: Science, Technology, and Society

N.8.B.1- Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.

N.12.B.1- Students know science, technology, and society influenced one another in both positive and negative ways.

N.12.B.2- Students know consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.

N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

N.12.B.4- Students know scientific knowledge builds on previous information.

Science: Life Science: Structure of Life

L.8.B.1- Students know all organisms are composed of cells, which are the fundamentals of life.

L.8.B.2- Students know cells grow, divide, and take in nutrients, which they use to provide energy for cell functions.

L.12.B.1- Students know cell structures and their functions.

Science: Life Science: Organisms and Their Environment

L.8.C.1- Students know how matter and energy are transferring through food webs in an ecosystem.

L.12.C.1- Students know how relationships of organisms and their physical environment.

L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

L.12.C.2- Students know how changes in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.

L.12.C.3- Students know the amount of living matter an environment can support is limited by the availability of matter, energy, and the ability of the ecosystem to recycle materials.

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

E.8.A.6- Students know minerals have different properties and different distributions according to how they form.

Science: Earth and Space Science: Earth's Composition and Structure

E.8.C.8- Students know soils have properties, such as color, texture, and water retention, and provide nutrients for life according to how they form.

English Language Arts:

1.6.3, 1.7.3, 1.8.3, 1.12.3- Decode unknown words in text using structural analysis through spelling patterns, base words, root words, suffixes, prefixes, syllables, compound words.

1.6.5, 1.7.5, 1.8.5, 1.12.5- Apply knowledge of high frequency words in text to build fluency and comprehension. Apply knowledge of content-specific vocabulary in text to build comprehension. Read fluently aloud and/or silently with a focus on prosody, accuracy, automaticity, reading rate.

7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.

7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic.

Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

1.8.1- Use map elements including scale, latitude and longitude, and projection, to identify and locate physical and human features in the United States and the world.

1.12.1- Use a variety of complex maps to acquire geographic information such as topographic, demographic, and land use.

2.8.4- Describe ways in which technology affects how cultural groups use places and regions.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life with different ecosystems.

3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.

- 3.12.5- Propose solutions to environmental problems using the concept of ecosystems.
- 5.8.4- Describe the changes that result from human modification of the physical environment.
- 5.12.4- Develop possible responses to changes caused by human modification of the physical environment.

Mathematics:

- 1.8.1- Represent numbers using scientific notation in mathematical and practical situations.
- 1.8.3- Compare and order real numbers, including powers of whole numbers in mathematical and practical situations.
- 3.8.1- Estimate and convert units of measure for mass and capacity within the same measurement system (customary and metric).
- 3.12.1- Estimate and convert between customary and metric systems.
- 5.7.1- Formulate questions that guide the collection of data. Organize, display, and read data using the appropriate graphical representations (with and without technology).
- 5.12.2- Select and apply appropriate statistical measures in mathematical and practical situations.

Arts: Visual Arts

- 2.8.1- **Analyze** and **evaluate** the effects of visual characteristics in works of art.
- 2.12.1- Defend an interpretation of visual characteristics in works of art.

Over the Hill and Dale, p. 220

Grade Level 3-12

Summary- Students follow a waterway and map their course, noting sites that affect water quality along the way.

Objective- Students will interpret a topographic map of their area. Students will recognize human-influenced features and activities that affect water quality.

Science: Nature of Science: Scientific Inquiry

- N.5.A.1- Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method.
- N.5.A.2- Students know how to compare the results of their experiments to what scientists already know about the world.
- N.8.A.1- Students know how to identify and critically evaluate information in data, tables, and graphs.
- N.8.A.3- Students know how to draw conclusions from scientific evidence.
- N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.
- N.12.A.3- Students know repeated experimentation allows for statistical and unbiased conclusions.
- N.5.A.7- Students know observable patterns can be used to organize items and ideas.
- N.8.A.7- Students know there are multiple methods for organizing items and information.

Science: Nature of Science: Science, Technology, and Society

- N.5.B.2- Students know technologies impact society, both positively and negatively.
- N.8.B.1- Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.

- N.12.B.1- Students know science, technology, and society influenced one another in both positive and negative ways.
- N.12.B.2- Students know consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.
- N.5.B.3- Students know the benefits of working with a team and sharing findings.
- N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.
- N.12.B.4- Students know scientific knowledge builds on previous information.

Science: Physical Science: Matter

- P.5.A.3- Students know materials can be classified by their observable physical and chemical properties (e.g. Magnetism, conductivity, density, and solubility)
- P.5.A.4- Students know that, by combining two or more materials, the properties of that material can be different from the original materials.
- P.5.A.6- Students know materials are composed of parts that are too small to be seen without magnification.

Science: Life Science: Organisms and Their Environment

- L.5.C.2- Students know organisms interact with each other and with the nonliving parts of their ecosystem.
- L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.
- L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.
- L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.
- L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.
- L.12.C.2- Students know how changes in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.
- L.12.C.3- Students know the amount of living matter an environment can support is limited by the availability of matter, energy, and the ability of the ecosystem to recycle materials.

Science: Earth and Space Science: Atmospheric Processes and the Water Cycle

- E.5.A.3- Students know most of the Earth's surface is covered with fresh or salt water.
- E.8.A.3- Students know the properties that make water an essential component of the earth system.

Science: Earth and Space Science: Earth's Composition and Structure

- E.5.C.3- Students know landforms may result from slow processes (e.g. Erosion and deposition) and fast processes (eg. Volcanoes, earthquakes, landslides, flood, and human activity).
- E.8.C.5- Students know how geologic processes account for state and regional topography.

English Language Arts:

- 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from

opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.

7.3.5, 7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.2.3, 8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

1.3.1- Identify and use the cardinal directions (N, S, E, W) on a compass rose to locate places on a map.

1.5.1- Use maps and map features, including directional orientation, map symbols, and grid system, to identify and locate major geographic features in Nevada and the United States.

1.8.1- Use map elements including scale, latitude and longitude, and projection, to identify and locate physical and human features in the United States and the world.

1.12.1- Use a variety of complex maps to acquire geographic information such as topographic, demographic, and land use.

1.3.2- Compare uses of maps and globes.

1.5.2- Identify the characteristics and purposes of different maps and globes.

1.8.2- Compare and contrast the characteristics and purposes of several types of maps, map projections, and other geographic representations.

1.12.2- Select appropriate maps, map projections, and other representations to analyze and interpret geographic information.

1.3.4- Construct a simple map, including title, symbols, and directions.

1.5.4- Construct maps and charts to display information about human and physical features in the United States.

1.8.4- Construct maps and charts to display information about human and physical features.

1.3.5- Recognize different types of maps.

1.5.5- Identify the purpose and content of various U.S. maps.

1.8.5- Compare and contrast maps of similar areas for purpose, accuracy, content, and design.

1.12.5- Analyze maps for similarities and differences in purpose, accuracy, content, and design.

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.5.5- Investigate an ecosystem by asking and answering geographic questions.

3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.

3.12.5- Propose solutions to environmental problems using the concept of ecosystems.

5.3.4- Compare different ways in which people modify the physical environment.

5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.

5.8.4- Describe the changes that result from human modification of the physical environment.

5.12.4- Develop possible responses to changes caused by human modification of the physical environment.

7.3.3- Construct simple maps and graphs to display geographic information.

7.5.3- Create complex maps, graphs, or charts to display geographic information.

7.8.3- Create and prepare various forms of maps, graphs, diagrams, tables, or charts to organize geographic information.

7.12.3- Use a variety of tools and technologies to select and design appropriate forms of maps, graphs, diagrams, tables, or charts to organize geographic information.

Arts: Visual Arts

1.3.3- Use different media, techniques, and processes to produce works of art.

1.5.3- Create artworks using various media, techniques, and processes to communicate ideas.

1.8.3- Use and explain why various media, techniques, and processes are used to produce works of art that communicate ideas and experiences.

1.12.3- Create works of art that demonstrate an understanding of a variety of media, **tools**, techniques, and processes (e.g. traditional and **emerging technologies**).

2.3.4- Use elements and principles of design to create works of art.

3.3.2- Create artwork that demonstrates choice of subject matter and symbols to communicate meaning.

3.5.2- Produce a work of art that demonstrates the ability to convey meaning by integrating subject matter and symbols with ideas.

Section Four: Going Down Under (soil)

Activities that explore the role of soils in a wetland environment, including filtration, percolation, and decomposition. Soil formation and characteristics are also studied.

Nature's Recyclers, p. 226

Grade Level K-6

Summary- *Centipedes, earthworms, and copepods, oh my!* Students investigate the connections between soil and a decomposing log or leaf litter.

Objectives- Students will describe the process of decomposition. Students will explain the role of decomposers in soil formation. Students will analyze a variety of interactions that occur in nature and at home.

Science: Nature of Science: Scientific Inquiry

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.5.A.1- Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method.

N.5.A.2- Students know how to compare the results of their experiments to what scientists already know about the world.

N.5.A.3- Students know how to draw conclusions from scientific evidence.

N.2.A.2- Students know tools can be used safely to gather data and extend the senses.

N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.

Science: Nature of Science: Scientific Inquiry

N.2.B.1- Students know science engages men and women of all ages and backgrounds.

N.2.B.2- Students know that, in science, it is helpful to work in a team and share findings with others.

N.5.B.3- Students know the benefits of working with a team and sharing findings.

N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

Science: Physical Science: Matter

P.2.A.3- Students know matter can be categorized by observable properties, such as color, size, shape, and weight.

P.2.A.4- Students know different objects are made of many different types of materials.

P.5.A.6- Students know materials are composed of parts that are too small to be seen without magnification.

Science: Life Science: Structure of Life

L.2.B.1- Students know humans and other animals use their senses to know their world.

L.5.B.2- Students know living things have predictable life cycles.

Science: Life Science: Organisms and Their Environment

L.2.C.1- Students know plants and animals need certain resources for energy and growth.
L.5.C.1- Students know the organization of simple food webs.
L.8.C.1- Students know how matter and energy are transferred through food webs in an ecosystem.
L.2.C.2- Students know a habitat includes food, water, shelter, and space.
L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.
L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.
L.8.C.2- Students know how to characterize organisms in any ecosystem by their functions.
L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.
L.2.C.3- Students know living things are found almost everywhere in the world.
L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.
L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.
L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

Science: Life Science: Diversity of Life

L.2.D.1- Students know plants and animals can be sorted by observable characteristics and behaviors.
L.5.D.1- Students know animals and plants can be classified according to their observable characteristics.
L.8.D.1- Students know species can be identified and classified based upon their characteristics.
E.2.C.3- Students know soils have different colors or textures depending on their composition.
E.5.C.5- Students know soil varies from place to place and has both biological and mineral components.
E.8.C.8- Students know soils have properties, such as color, texture, and water retention, and provide nutrients for life according to how their form.

English Language Arts:

5.K.1, 5.1.1, 5.2.1, 5.3.1, 5.4.1, 5.5.1, 5.6.1- Use prewriting strategies to plan written work. Choose and narrow a topic to organize ideas. Explore a topic to plan written work.
5.K.2, 5.1.2- Draw or communicate ideas in written form. With assistance, draft sentences about a single topic that address, audience, purpose, supporting details
5.3.2, 5.4.2, 5.5.2, 5.6.2- Draft multiple paragraph papers about a single topic that address audience, purpose, supporting details, introduction, conclusion, transitions.
5.K.7- Create a final draft through writing, drawing, or dictation.
5.1.7, 5.2.7, 5.3.7- Prepare a legible final draft to display or share.
5.4.7, 5.5.7, 5.6.7- Prepare a legible final draft to display or share. Select a publishing format appropriate to the audience.
6.K.2, 6.1.2- Draw or write about familiar experiences and/or events. **With assistance**, write sentences about experiences and/or events appropriate to audience and purpose.
6.2.2, 6.3.2, 6.4.2- Write multiple paragraph papers about experiences and/or events appropriate to audience and purpose that include logical sequence, characters, setting, plot, dialogue With assistance, write multiple-paragraph papers about experiences and/or events appropriate to audience and purpose that include figurative language, sensory details.

6.5.2, 6.6.2- Write multiple-paragraph papers about experiences and/or events appropriate to audience and purpose that include logical sequence, characters, setting, plot, dialogue, figurative language, sensory details

Social Studies: Geography

2.2.1- Identify basic types of landforms and bodies of water, such as mountains, valleys, islands, lakes, and rivers.

3.2.1- Describe the weather conditions typical to each season in the community and in other places.

3.3.1- Recognize that plants and animals have habitats on both land and in water.

3.2.3- Identify some basic elements of an ecosystem, such as plants and animals.

3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life with different ecosystems.

3.3.4- Locate different ecosystems in their community.

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.5.5- Investigate an ecosystem by asking and answering geographic questions.

Do You Dig Wetland Soil?, p.231

Grade Level K-12

Summary- *How is wetland soil like a box of crayons?* Students make and use a wetland soils color chart, then dig a hole in a wetland area to study the physical characteristics of the soil.

Objectives- Students will describe physical differences between wetland and upland soils. Students will use keys to recognize wetland soils.

Science: Nature of Science: Scientific Inquiry

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.5.A.1- Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method.

N.5.A.2- Students know how to compare the results of their experiments to what scientists already know about the world.

N.5.A.3- Students know how to draw conclusions from scientific evidence.

N.8.A.3- Students know different explanations can be given for the same evidence.

N.2.A.2- Students know tools can be used safely to gather data and extend the senses.

N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.

N.12.A.4- Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.

Science: Nature of Science: Science, Technology, and Society

N.2.B.1- Students know science engages men and women of all ages and backgrounds.

N.2.B.2- Students know that, in science, it is helpful to work in a team and share findings with others.

- N.5.B.3- Students know the benefits of working with a team and sharing findings.
- N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.
- N.12.B.4- Students know scientific knowledge builds on previous information.

Science: Physical Science: Matter

- P.2.A.3- Students know matter can be categorized by observable properties, such as color, size, shape, and weight.
- P.2.A.4- Students know different objects are made of many different types of materials.
- P.5.A.4- Students know that, by combining two or more materials, the properties of that material can be different from the original materials.
- P.8.A.4- Students know atoms often combine to form molecules, and that compounds form when two or more different kinds of atoms chemically bond.
- P.12.A.5- Students know chemical reactions can take place at different rates, depending on a variety of factors (i.e. temperature, concentration, surface area, and agitation).
- P.5.A.6- Students know materials are composed of parts that are too small to be seen without magnification.

Science: Life Science: Structure of Life

- L.2.B.1- Students know humans and other animals use their senses to know their world.

Science: Earth and Space Science: Earth's Composition and Structure

- E.2.C.3- Students know soils have different colors or textures depending on their composition.
- E.5.C.5- Students know soil varies from place to place and has both biological and mineral components.
- E.8.C.8- Students know soils have properties, such as color, texture, and water retention, and provide nutrients for life according to how their form.

English Language Arts:

- 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.
- 7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.
- 7.3.5, 7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.
- 8.2.3, 8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.
- 8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

- 2.2.1- Identify basic types of landforms and bodies of water, such as mountains, valleys, islands, lakes, and rivers.
- 2.3.1- Identify differences between physical and human features.
- 3.2.1- Describe the weather conditions typical to each season in the community and in other places.
- 3.3.1- Recognize that plants and animals have habitats on both land and in water.
- 3.2.3- Identify some basic elements of an ecosystem, such as plants and animals.
- 3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.
- 3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.
- 3.8.3- Describe the interdependence among soil, climate, plant life, and animal life with different ecosystems.
- 3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.
- 3.3.4- Locate different ecosystems in their community.
- 3.3.5- Identify the living and nonliving elements of an ecosystem.
- 3.5.5- Investigate an ecosystem by asking and answering geographic questions.
- 3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.
- 3.12.5- Propose solutions to environmental problems using the concept of ecosystems.
- 7.2.1- Ask questions about location.
- 7.3.1- Ask questions about why things are located where they are.

How Thirsty Is The Ground?, p. 239

Grade Level 3-12

Summary- *How does the ground drink?* Students perform percolation tests on different types of soil and compare results.

Objectives- Students will predict and test permeability of different types of soil. Students will relate makeup of the soil and use of the area to permeability. Students will analyze this information to explain how some wetlands are formed. Students will consider oxygen levels of wetland soils versus well-drained soils.

Science: Nature of Science: Scientific Inquiry

- N.5.A.1- Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method.
- N.8.A.1- Students know how to identify and critically evaluate information in data, tables, and graphs.
- N.5.A.3- Students know how to draw conclusions from scientific evidence.
- N.12.A.3- Students know repeated experimentation allows for statistical analysis and unbiased conclusions.
- N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

Science: Nature of Science: Science, Technology, and Society

- N.5.B.3- Students know the benefits of working with a team and sharing findings.

Science: Physical Science: Matter

P.5.A.4- Students know that, by combining two or more materials, the properties of that material can be different from the original materials.

Science: Earth and Space Science: Earth's Composition and Structure

E.5.C.5- Students know soil varies from place to place and has both biological and mineral components.

E.8.C.8- Students know soils have properties, such as color, texture, and water retention, and provide nutrients for life according to how their form.

English Language Arts:

7.3.5, 7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.5.5- Investigate an ecosystem by asking and answering geographic questions.

Mathematics:

1.3.8- Generate and solve two-step addition and subtraction problems and one-step multiplication problems based on practical situations. Model addition, subtraction, multiplication, and division in a variety of ways. Use mathematical vocabulary and symbols to describe multiplication and division.

1.4.8- Generate and solve addition, subtraction, multiplication, and division problems using whole numbers in practical situations.

1.5.8- Generate and solve addition, subtraction, multiplication, and division problems using whole numbers and decimals in practical situations.

3.3.1- Compare, order, and describe objects by various measurable attributes for area and volume/capacity.

5.2.1- Collect, record, and classify data in response to questions posed by teacher and/or students. Use tables, pictographs, and bar graphs to represent data.

5.3.1- Pose questions that can be used to guide data collection, organization, and representation. Use graphical representations, including number lines, frequency tables, and pictographs to represent data.

Summary- *How is soil affected when it is saturated with water?* Your class will construct compost bins that contain different levels of oxygen and water to observe the effects on the decay of organic matter and the growth of plants.

Objectives- Students will understand how soil saturation affects the processes of decomposition and plant growth. Students will describe conditions that promote decomposition.

Science: Nature of Science: Scientific Inquiry

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.5.A.1- Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method.

N.5.A.2- Students know how to compare the results of their experiments to what scientists already know about the world.

N.5.A.3- Students know how to draw conclusions from scientific evidence.

N.8.A.3- Students know different explanations can be given for the same evidence.

N.2.A.2- Students know tools can be used safely to gather data and extend the senses.

N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.

N.12.A.4- Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.

Science: Nature of Science: Science, Technology, and Society

N.2.B.1- Students know science engages men and women of all ages and backgrounds.

N.2.B.2- Students know that, in science, it is helpful to work in a team and share findings with others.

N.5.B.3- Students know the benefits of working with a team and sharing findings.

N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

N.12.B.4- Students know scientific knowledge builds on previous information.

Science: Physical Science: Matter

P.2.A.3- Students know matter can be categorized by observable properties, such as color, size, shape, and weight.

P.2.A.4- Students know different objects are made of many different types of materials.

P.5.A.4- Students know that, by combining two or more materials, the properties of that material can be different from the original materials.

P.8.A.4- Students know atoms often combine to form molecules, and that compounds form when two or more different kinds of atoms chemically bond.

P.12.A.5- Students know chemical reactions can take place at different rates, depending on a variety of factors (i.e. temperature, concentration, surface area, and agitation).

P.5.A.6- Students know materials are composed of parts that are too small to be seen without magnification.

Science: Life Science: Structure of life

- L.2.B.1- Students know humans and other animals use their senses to know their world.
- L.5.B.1- Students know plants and animals have structures that enable them to grow, reproduce, and survive.
- L.5.B.2- Students know living things have predictable life cycles.

Science: Life Science: Organisms and Their Environment

- L.2.C.1- Students know plants and animals need certain resources for energy and growth.
- L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.
- L.8.C.2- Students know how to characterize organisms in any ecosystem by their function.
- L.12.C.1- Students know relationships of organisms and their physical environment.
- L.2.C.3- Students know living things are found almost everywhere in the world.
- L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.
- L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.
- L.12.C.3- Students know the amount of living matter and environment can support is limited by the availability of matter, energy, and the ability of the ecosystem to recycle materials.

Science: Earth and Space Science: Earth's Composition and Structure

- E.2.C.3- Students know soils have different colors or textures depending on their composition.
- E.5.C.5- Students know soil varies from place to place and has both biological and mineral components.
- E.8.C.8- Students know soils have properties, such as color, texture, and water retention, and provide nutrients for life according to how their form.

English Language Arts:

- 7.2.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.
- 7.2.3, 7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.
- 7.2.5, 7.3.5, 7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.
- 8.2.3, 8.3.2., 8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.
- 8.2.4- Participate in group discussions following the turn-taking process. Ask relevant questions to clarify and gather information.
- 8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

- 2.3.3- Discuss how people view their own communities.
- 2.5.3- Describe the characteristics of their community and Nevada from different perspectives.
- 3.3.1- Recognize that plants and animals have habitats on both land and in water.
- 3.2.3- Identify some basic elements of a simple ecosystem, such as plants and animals.
- 3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.
- 3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.
- 3.8.3- Describe the interdependence among soil, climate, plant life, and animal life with different ecosystems.
- 3.3.4- Locate different ecosystems in their community.
- 3.3.5- Identify the living and nonliving elements of an ecosystem.
- 3.5.5- Investigate an ecosystem by asking and answering geographic questions.
- 3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.
- 3.12.5- Propose solutions to environmental problems using the concept of ecosystems.
- 5.2.4- Identify how people shape the physical environment at home and at school.
- 5.3.4- Compare different ways in which people modify the physical environment.
- 5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.
- 5.8.4- Describe the changes that result from human modification of the physical environment.
- 5.12.4- Develop possible responses to changes caused by human modification of the physical environment.

Mathematics:

- 5.2.1- Collect, record, and classify data in response to questions posed by teacher and/or students. Use tables, pictographs, and bar graphs to represent data.
- 5.3.1- Pose questions that can be used to guide data collection, organization, and representation. Use graphical representations, including number lines, frequency tables, and pictographs to represent data.
- 5.4.1- Pose questions that can be used to guide the collection of categorical and numerical data. Organize and represent data using a variety of graphical representations including frequency tables and line plots.
- 5.5.1, 5.6.1, 5.7.1, 5.8.1- Formulate questions and design a study that guides the collection of data. Organize, display, and read data including box and whisker plots (with and without technology).
- 5.12.1- Organize statistical data through the use of tables, graphs, and matrices (with and without technology).

Nature's Filter, p. 250

Grade Level K-3 (as demo), 4-12

Summary- Students test the filtering ability of several types of soil.

Objective- Students will describe the ability of wetland soils to filter pollutants from water.

Science: Nature of Science: Scientific Inquiry

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.5.A.1- Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method.

N.5.A.2- Students know how to compare the results of their experiments to what scientists already know about the world.

N.5.A.3- Students know how to draw conclusions from scientific evidence.

N.8.A.3- Students know different explanations can be given for the same evidence.

N.2.A.2- Students know tools can be used safely to gather data and extend the senses.

N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.

N.12.A.4- Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.

Science: Physical Science: Matter

P.2.A.3- Students know matter can be categorized by observable properties, such as color, size, shape, and weight.

P.2.A.4- Students know different objects are made of many different types of materials.

P.5.A.4- Students know that, by combining two or more materials, the properties of that material can be different from the original materials.

P.5.A.6- Students know materials are composed of parts that are too small to be seen without magnification.

Science: Life Science: Organisms and Their Environment

L.2.C.3- Students know living things are found almost everywhere in the world.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

L.12.C.3- Students know the amount of living matter and environment can support is limited by the availability of matter, energy, and the ability of the ecosystem to recycle materials.

Science: Earth and Space Science: Earth's Composition and Structure

E.2.C.3- Students know soils have different colors or textures depending on their composition.

E.5.C.5- Students know soil varies from place to place and has both biological and mineral components.

E.8.C.8- Students know soils have properties, such as color, texture, and water retention, and provide nutrients for life according to how their form.

E.12.C.5- Students know soil, derived from weathered rocks and decomposed organic material, is found in layers.

English Language Arts:

7.K.1, 7.1.1, 7.2.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and

distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.K.3, 7.1.3., 7.2.3, 7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.

7.K.5, 7.1.5, 7.2.5, 7.3.5, 7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.K.3, 8.1.3, 8.2.3, 8.3.3, 8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.K.4, 8.1.4, 8.2.4- Participate in group discussions following the turn-taking process. Ask relevant questions to clarify and gather information.

8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.5.5- Investigate an ecosystem by asking and answering geographic questions.

3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.

3.12.5- Propose solutions to environmental problems using the concept of ecosystems.

5.2.4- Identify how people shape the physical environment at home and at school.

5.3.4- Compare different ways in which people modify the physical environment.

5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.

5.8.4- Describe the changes that result from human modification of the physical environment.

5.12.4- Develop possible responses to changes caused by human modification of the physical environment.

Mathematics:

5.2.1- Collect, record, and classify data in response to questions posed by teacher and/or students. Use tables, pictographs, and bar graphs to represent data.

5.3.1- Pose questions that can be used to guide data collection, organization, and representation. Use graphical representations, including number lines, frequency tables, and pictographs to represent data.

5.4.1- Pose questions that can be used to guide the collection of categorical and numerical data. Organize and represent data using a variety of graphical representations including frequency tables and line plots.

5.5.1, 5.6.1, 5.7.1, 5.8.1- Formulate questions and design a study that guides the collection of data. Organize, display, and read data including box and whisker plots (with and without technology).

5.12.1- Organize statistical data through the use of tables, graphs, and matrices (with and without technology).

Section Five: Wetlands and People (culture and issues)

Activities that focus on the interactions between humans and wetlands. Contemporary social and political issues are considered, along with historic and cultural topics.

Hear Ye! Hear Ye!, p. 253

Grade Level 3-12

Summary- *Hear ye! Hear ye! Who has a say about what your community does with wetlands? You do!* Students conduct a mock public hearing to make a group decision on an important project.

Objectives- Students will describe the process of a public hearing. Students will analyze some effects of a development on an adjacent wetland. Students will weigh factors in a proposed building project and decide whether or not to proceed.

Science: Nature of Science: Scientific Inquiry

N.8.A.2- Students know how to critically evaluate information to distinguish between fact and opinion.

Science: Life Science: Organisms and Their Environment

L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.

L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.

English Language Arts:

1.3.5, 1.4.5, 1.5.5, 1.6.5, 1.7.5, 1.8.5, 1.12.5- Apply knowledge of high frequency words in text to build fluency and comprehension. Apply knowledge of content-specific vocabulary in text to build comprehension. Read fluently aloud and/or silently with a focus on prosody, accuracy, automaticity, reading rate.

7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.

8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

2.3.3- Discuss how people view their own communities.

2.8.3- Compare how cultural characteristics affect different points of view with regard to places and regions.

- 3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.
- 3.12.5- Propose solutions to environmental problems using the concept of ecosystems.
- 4.5.6- Investigate an economic issue by asking and answering geographic questions about location
- 4.3.9- Describe how cooperation and conflict affect people and places.
- 5.12.1- Compare and contrast how changes in the physical environment can increase or diminish its capacity to support human activity.
- 5.3.4- Compare different ways in which people modify the physical environment.
- 5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.
- 5.8.4- Describe the changes that result from human modification of the physical environment.
- 5.12.4- Develop possible responses to changes caused by human modification of the physical environment.
- 6.3.3- Recognize a geographic issue or theme that affects home, school, or community.
- 6.5.3- Discuss a geographic issue from more than one point of view.

Arts: Theater

- 2.3.2- Imitate the traits of a given person, animal, or object.
- 2.3.3 Use voice and body to show different emotions while portraying a character in a dramatized idea or story.
- 4.3.2- Identify similarities and differences between dramatic characters and real people.

Hydropoly, p. 261

Grade Level 4-12

Summary- *A game of wetlands management and “eco-nomics”!* Students play a board game to hone their decision-making skills.

Objectives- Students will infer and discuss land-use practices that affect wetlands. Students will make decisions and recognize personal priorities with regard to wetlands. Students will describe some of the economic factors that often drive land use.

Science: Nature of Science: Science, Technology, and Society

N.8.B.1- Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.

Science: Life Science: Organisms and Their Environment

L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.

L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.

English Language Arts:

2.4.3, 2.5.3, 2.6.3, 2.7.3, 2.8.3, 2.12.3- Select after reading strategies appropriate to text and purpose to recall details, restate main ideas, organize information, record information, synthesize text, evaluate text, evaluate the effectiveness of reading strategies.

7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

Social Studies: Geography

4.5.6- Investigate an economic issue by asking and answering geographic questions about location.

5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.

5.8.4- Describe the changes that result from human modification of the physical environment.

6.12.3- Analyze a contemporary issue using geographic knowledge, skills, and perspectives.

People of the Bog, p. 266

Grade Level 6-12

Summary- *Feeling bogged down? You're in good company- except they're 3,000 years old!*

Students construct a classroom bog and a mini-composter to observe the rate of decomposition in anaerobic (little or no oxygen present) and aerobic (oxygen available) environments.

Objectives- Students will describe characteristics of bog environments. Students will explain the conditions of bogs that allow for the preservation of artifacts from the past. Students will compare the rates of decomposition of articles in aerobic and anaerobic environments.

Science: Nature of Science: Scientific Inquiry

N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.

N.8.A.6- Students know scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists.

N.12.A.6- Students know models and modeling can be used to identify and predict cause-effect relationships.

Science: Physical Science: Matter

P.8.A.4- Students know atoms often combine to form molecules, and that compounds form when two or more different kinds of atoms chemically bond.

P.12.A.5- Students know chemical reactions can take place at different rates, depending on a variety of factors (i.e. Temperature, concentration, surface area, and agitation).

P.12.A.6- Students know chemical reactions either release or absorb energy.

P.8.A.5- Students know mass is conserved in physical and chemical changes.

P.12.A.7- Students know that, in chemical reactions, elements combine in predictable ratios, and the numbers of atoms of each element do not change.

Science: Life Science: Heredity

L.8.A.4- Students know some characteristics of an organism are the result of a combination of interaction with the environment and genetic information.

L.12.A.5- Students know how to predict patterns of inheritance.

Science: Life Science: Organisms and Their Environment

- L.8.C.1- Students know how matter and energy are transferred through food webs in an ecosystem.
- L.8.C.2- Students know how to characterize organisms in any ecosystem by their functions.
- L.12.C.1- Students know relationships of organisms and their physical environment.
- L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.
- L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.
- L.12.C.2- Students know how changes in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.
- L.12.C.3- Students know the amount of living matter an environment can support is limited by the availability of matter, energy, and the ability of the ecosystem to recycle materials.

Science: Life Science: Diversity of Life

- L.8.D.2- Students know fossils provide evidence of how life and environmental conditions have changed throughout geologic time.
- L.12.D.3- Students know the fossil record gives evidence for natural selection and its evolutionary consequences.
- L.12.D.4- Students know the extinction of species can be a natural process.
- L.8.D.3- Students know an organism's behavior is based on both experience and on the species' evolutionary history.
- L.12.D.5- Students know biological evolution explains diversity of life.

Science: Earth and Space Science: Earth's Composition and Structure

- E.8.C.1- Students know sedimentary rocks and fossils provide evidence for changing environments and the constancy of geologic processes.
- E.12.C.1- Students know how successive rock strata and fossils can be used to confirm the age, history, and changing life forms of the Earth, including how this evidence is affected by the folding, breaking, and uplifting of layers.

English Language Arts:

- 1.8.3, 1.12.3- Decode unknown words in text using structural analysis through spelling patterns, base words, root words, suffixes, prefixes, syllables, compound words.
- 1.8.5, 1.12.5- Apply knowledge of high frequency words in text to build fluency and comprehension. Apply knowledge of content-specific vocabulary in text to build comprehension. Read fluently aloud and/or silently with a focus on prosody, accuracy, automaticity, reading rate.
- 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.
- 7.8.3, 7.12.3- Expand vocabulary through listening.
- 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.
- 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

2.8.6- Describe how and why regions change over time.

2.12.6- Analyze why places and regions once characterized by one set of criteria may be defined by a different set of criteria today, and evaluate these changes.

2.8.7- Illustrate the relationship between the physical and cultural characteristics of a region.

2.12.7- Apply the concept of region to organize and study a geographic issue.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life within different ecosystems.

3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.

3.8.4- Compare and contrast the **biodiversity** and productivity of different ecosystems on Earth.

5.8.2- Compare and contrast the opportunities and constraints that the physical environment places on human activity.

6.8.1- Explain how different characteristics of people, places, and **resources** have affected events and conditions in the past.

6.12.1- Analyze the ways in which physical features and human characteristics of places and regions have influenced the evolution of significant historical events.

7.8.2- Use a variety of research skills, including field work and computer resources, to collect geographic information.

7.12.2- Locate and acquire a variety of primary and secondary information sources and assess the value of each.

Regulation Rummy, p. 270

Grade Level 9-12

Summary- *What are the rules?* Students play a card game designed to increase awareness of the multitude of federal wetlands regulations.

Objectives- Students will identify how wetlands regulations apply to certain activities. Students will analyze the complexity of wetland regulations, enforcement, and jurisdiction.

Science: Nature of Science: Scientific Inquiry

N.12.A.5- Students know models and modeling can be used to identify and predict cause-effect relationships.

Science: Nature of Science: Science, Technology, and Society

N.12.B.1- Students know science, technology, and society influenced one another in both positive and negative ways.

N.12.B.2- Students know consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.

N.12.B.4- Students know scientific knowledge builds on previous information.

English Language Arts:

- 1.12.3- Decode unknown words in text using structural analysis through spelling patterns, base words, root words, suffixes, prefixes, syllables, compound words.
- 1.12.5- Apply knowledge of high frequency words in text to build fluency and comprehension. Apply knowledge of content-specific vocabulary in text to build comprehension. Read fluently aloud and/or silently with a focus on prosody, accuracy, automaticity, reading rate.
- 2.12.1- Select before reading strategies appropriate to text and purpose to preview text, access prior knowledge, set purpose for reading, make predictions, determine reading rate, determine text type.
- 2.12.2- Select during reading strategies appropriate to text and purpose to use self-correcting strategies, make, confirm, and revise predictions, understand and use key vocabulary identify main idea and supporting details, make inferences, adjust reading rate apply knowledge of text type.
- 2.12.3- Select after reading strategies appropriate to text and purpose to recall details, restate main ideas, organize information, record information, synthesize text, evaluate text, evaluate the effectiveness of reading strategies.
- 7.12.3- Expand vocabulary through listening.
- 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.
- 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

- 2.12.2- Explain why places and regions are important to cultural identity and can serve as forces for both unification and fragmentation.
- 2.12.5- Analyze selected historical issues and questions using the geographic concept of regions.
- 2.12.6- Analyze why places and regions once characterized by one set of criteria may be defined by a different set of criteria today, and evaluate these changes.
- 3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.
- 3.12.5- Propose solutions to environmental problems using the concept of ecosystems.
- 5.12.2- Evaluate strategies to respond to constraints placed on human systems by the physical environment.
- 5.12.4- Develop possible responses to changes caused by human modification of the physical environment.
- 5.12.7- Develop policies for the use and management of Earth's resources that consider the various interests involved.
- 6.12.4- Predict possible outcomes and develop future policies for local or regional issues that have spatial dimensions.

Social Studies: History

- 2.12.2- Integrate, analyze, and organize historical information from a variety of sources.
- 10.12.11- Identify and explain the implications of scientific and technological achievements, including: personal computers, internet, satellites, biotechnology.

Summary- *Up a creek without a boat!* Students learn to appreciate wetlands' values to indigenous cultures as they build miniature boats with wetland plant materials.

Objectives- Students will demonstrate how wetland plants could be used to build boats. Students will increase their understanding of the value of wetland plants.

Science: Nature of Science: Scientific Inquiry

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.5.A.2- Students know how to compare the results of their experiments to what scientists already know about the world.

N.5.A.3- Students know how to draw conclusions from scientific evidence.

N.2.A.2- Students know tools can be used safely to gather data and extend the senses.

Science: Nature of Science: Science, Technology, and Society

N.2.B.1- Students know science engages men and women of all ages and backgrounds.

N.5.B.1- Students know that, throughout history, people of diverse cultures have provided scientific knowledge and technologies.

N.5.B.2- Students know technologies impact society, both positively and negatively.

N.2.B.2- Students know that, in science, it is helpful to work in a team and share findings with others.

N.5.B.3- Students know the benefits of working with a team and sharing findings.

Science: Physical Science: Forces and Motion

P.2.B.4- Students know things fall to the ground unless something holds them up.

P.5.B.5- Students know Earth's gravity pulls any object toward it without touching it.

Science: Life Science: Organisms and Their Environment

L.2.C.1- Students know plants and animals need certain resources for energy and growth.

L.2.C.3- Students know living things are found almost everywhere in the world.

L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystem.

English Language Arts:

7.1.3, 7.2.3, 7.3.3, 7.4.3, 7.5.3- Expand vocabulary through listening.

7.1.5, 7.2.5, 7.3.5, 7.4.5, 7.5.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback.

Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.1.2, 8.2.2, 8.3.2, 8.4.2, 8.5.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.1.4, 8.2.4, 8.3.4, 8.4.4, 8.5.4- Participate in group discussions following the turn-taking process. Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify and gather information and extend

ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information.

Social Studies: Geography

- 2.3.3- Discuss how people view their own communities.
- 3.2.3- Identify some basic elements of a simple **ecosystem**, such as plants and animals.
- 3.3.5- Identify the living and nonliving elements of an ecosystem.
- 3.5.5- Investigate an ecosystem by asking and answering geographic questions.
- 5.3.3- List tools, machines, or technologies that have changed the physical environment.
- 5.3.6- Describe ways humans depend on natural resources.
- 7.2.5- Display the results of a geographic inquiry.
- 7.3.5- Create a visual model to illustrate the results of a geographic inquiry.
- 7.5.5- Draw a conclusion by presenting geographic information in an oral or written report accompanied by maps or graphics.

Social Studies: History

- 2.3.1- Ask history-related questions.
- 2.5.1- Ask a historical question and identify resources to be used in research.
- 2.5.2- Organize historical information from a variety of sources.
- 7.5.9- Describe the contributions of immigrant groups to the United States.

Chrysti the Wordsmith on Wetlands, p.280

Grade Level 7-12

Summary- *Ever wonder where some of those wild wetland names came from?* Play a word game and research the etymology (word origins) of wetland names.

Objective- Students will recognize some of the many names for wetlands. Students will appreciate the derivation of words and the evolution of language. Students will use research skills to discover word derivations.

Science: Nature of Science: Scientific Inquiry

- N.8.A.2- Students know how to critically evaluate information to distinguish between fact and opinion.
- N.8.A.3- Students know different explanations can be given for the same evidence.
- N.8.A.7- Students know there are multiple methods for organizing items and information.

English Language Arts:

- 1.8.3, 1.12.3- Decode unknown words in text using structural analysis through spelling patterns, base words, root words, suffixes, prefixes, syllables, compound words.
- 1.8.4, 1.12.4- Comprehend, build, and extend vocabulary using homographs, homophones, syntax, parts of speech, synonyms, antonyms. Comprehend, build, and extend vocabulary using context clues and structural analysis. Apply alphabetic order to locate words in resources. Use resources to find and/ or confirm meaning of unknown words, word origins, Greek word roots, Latin word roots.
- 1.8.5, 1.12.5- Apply knowledge of high frequency words in text to build fluency and comprehension. Apply knowledge of content-specific vocabulary in text to build comprehension. Read fluently aloud and/or silently with a focus on prosody, accuracy, automaticity, reading rate.

7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.8.3, 7.12.3- Expand vocabulary through listening.

7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

2.8.3- Compare how cultural characteristics affect different points of view with regard to places and regions.

2.12.3- Compare and contrast the characteristics of places and regions from different points of view.

2.8.7- Illustrate the relationship between the physical and cultural characteristics of a region.

2.12.7- Apply the concept of region to organize and study a geographic issue.

5.8.7- Select a resource and evaluate different viewpoints regarding its use.

6.8.1- Explain how different characteristics of people, places, and **resources** have affected events and conditions in the past.

7.8.4- Evaluate and analyze information obtained from a variety of geographic sources.

7.8.5- Make generalizations by developing and presenting combinations of geographic information to answer geographic questions.

7.12.5- Complete a geographic inquiry by applying geographic models, generalizations, and theories to the analysis, interpretation, and presentation of information.

Wetland Tradeoffs, p.285

Grade Level 9-12

Summary- *What factors should we consider when we decide whether or not to alter a wetland for other uses?* Students make a simple inventory of wetland benefits, then debate the tradeoffs in a local wetlands issue.

Objectives- Students will compare economic, social, and environmental tradeoffs in various wetland conservation and development decisions. Students will describe the history of wetland development and protection in their community.

Science: Nature of Science: Scientific Inquiry

N.12.A.1- Students know tables, charts, illustrations and graphs can be used in making arguments and claims in oral and written presentations.

N.12.A.5- Students know models and modeling can be used to identify and predict cause-effect relationships.

Science: Nature of Science: Science, Technology, and Society

N.12.B.1- Students know science, technology, and society influenced one another in both positive and negative ways.

N.12.B.2- Students know consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.

Science: Life Science: Organisms and Their Environment

L.12.C.1- Students know relationships of organisms and their physical environment.

L.12.C.2- Students know how changes in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.

L.12.C.3- Students know the amount of living matter an environment can support is limited by the availability of matter, energy, and the ability of the ecosystem to recycle materials.

English Language Arts:

7.12.3- Expand vocabulary through listening.

7.12.5- Actively listen to oral communications. Listen to and participate in conversations.

Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions. Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

2.12.3- Compare and contrast the characteristics of places and regions from different points of view.

2.12.7- Apply the concept of region to organize and study a geographic issue.

3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.

3.12.5- Propose solutions to environmental problems using the concept of ecosystems.

4.12.9- Analyze how different cultures, points of view, and self-interests influence cooperation and conflict over territory and resources.

5.12.1- Compare and contrast how changes in the physical environment can increase or diminish its capacity to support human activity.

5.12.2- Evaluate strategies to respond to constraints placed on human systems by the physical environment.

5.12.4- Develop possible responses to changes caused by human modification of the physical environment.

6.12.3- Analyze a contemporary issue using geographic knowledge, skills, and perspectives.

6.12.4- Predict possible outcomes and develop future policies for local or regional issues that have spatial dimensions.

Summary- *How can people help wetlands?* Students who have acquired an understanding of wetland functions and benefits and an appreciation of wetland environments may want to help improve (enhance) a wetland site. The following projects will provide some direction.

Objectives- Students will research wetlands to identify need for enhancement. Students will build appropriate structures to enhance wetland habitat for plants and animals. Students will participate in projects to improve wetlands.

Science: Nature of Science: Scientific Inquiry

N.2.A.2- Students know tools can be used safely to gather data and extend the senses.

N.5.A.5- Students know how to plan and conduct a safe and simple investigation.

N.8.A.4- Students know how to design and conduct a controlled experiment.

N.8.A.5- Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.

N.12.A.4- Students know how to safely conduct an original scientific investigation using the appropriate tools and technology.

Science: Nature of Science: Science, Technology, and Society

N.2.B.1- Students know science engages men and women of all ages and backgrounds.

N.5.B.1- Students know that, throughout history, people of diverse cultures have provided scientific knowledge and technologies.

N.5.B.2- Students know technologies impact society, both positively and negatively.

N.8.B.1- Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.

N.12.B.1- Students know science, technology, and society influenced one another in both positive and negative ways.

N.12.B.2- Students know consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.

N.2.B.2- Students know that, in science, it is helpful to work in a team and share findings with others.

N.5.B.3- Students know the benefits of working with a team and sharing findings.

N.8.B.2- Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.

N.12.B.4- Students know scientific knowledge builds on previous information.

Science: Physical Science: Forces and motion

P.2.B.1- Students know the position and motion of an object can be changed by pushing or pulling.

P.5.B.1- Students know that, when an unbalanced force is applied to an object, the object either speeds up, slows down, or goes in a different direction.

P.2.B.2- Students know things move in many different ways and at different speeds (e.g., straight line, zigzag, vibration, circular motion, fast/slow).

P.5.B.2- Students know how the strength of a force and mass of an object influence the amount of change in an object's motion.

P.8.B.1- Students know the effects of balanced and unbalanced forces on an object's motion.

P.12.B.1- Students know laws of motion can be used to determine the effects of forces on the motion of objects.

Science: Life Science: Structure of Life

L.2.B.1- Students know humans and other animals use their senses to know their world.

L.5.B.1- Students know plants and animals have structures that enable them to grow, reproduce, and survive.

L.5.B.2- Students know living things have predictable life cycles.

Science: Life Science: Organisms and Their Environment

L.2.C.1- Students know plants and animals need certain resources for energy and growth.

L.5.C.1- Students know the organization of simple food webs.

L.5.C.2- Students know organisms interact with each other and with the non-living parts of their ecosystem.

L.8.C.1- Students know how matter and energy are transferred through food webs in an ecosystem.

L.2.C.2- Students know a habitat includes food, water, shelter and space.

L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.

L.8.C.2- Students know how to characterize organisms in any ecosystem by their functions.

L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.12.C.1- Students know relationships of organisms and their physical environment.

L.12.C.2- Students know how changes in an ecosystem can affect biodiversity and biodiversity's contribution to an ecosystem's stability.

L.2.C.3- Students know living things are found almost everywhere in the world.

L.5.C.4- Students know all organisms, including humans, can cause changes in their environments.

L.5.C.5- Students know plants and animals have adaptations allowing them to survive in specific ecosystems.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

L.12.C.3- Students know the amount of living matter an environment can support is limited by the availability of matter, energy, and the ability of the ecosystem to recycle materials.

English Language Arts:

7.K.1, 7.1.1, 7.2.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

7.K.3, 7.1.3, 7.2.3, 7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.12.3- Expand vocabulary through listening.

7.K.5, 7.1.5, 7.2.5, 7.3.5, 7.4.5, 7.5.5, 7.6.5, 7.7.5, 7.8.5, 7.12.5- Actively listen to oral communications. Listen to and participate in conversations. Listen to and evaluate constructive feedback. Provide constructive feedback. Focus attention on a speaker to solve problems by identifying, synthesizing, and evaluating data.

8.K.2, 8.1.2, 8.2.2, 8.3.2., 8.4.2, 8.5.2, 8.6.2, 8.7.2, 8.8.2, 8.12.2- Use precise language to describe feelings, experiences, observations, ideas. Apply Standard English to communicate ideas.

8.K.4, 8.1.4, 8.2.4- Participate in group discussions following the turn-taking process. Ask relevant questions to clarify and gather information.

8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

2.2.1- Identify basic types of landforms and bodies of water, such as mountains, valleys, islands, lakes, and rivers.

2.3.1- Identify differences between physical and human features.

2.5.1- Describe physical and human features and cultural characteristics of places and regions in the United States.

2.3.3- Discuss how people view their own communities.

2.5.3- Describe the characteristics of their community and Nevada from different perspectives.

3.2.1- Describe the weather conditions typical to each season in the community and in other places.

3.3.2- Recognize that plants and animals have habitats on both land and in water.

3.2.3- Identify some basic elements of a simple **ecosystem**, such as plants and animals.

3.3.3- Identify different types of simple **ecosystems**, such as ponds, streams, or fields.

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.8.3- Describe the interdependence among soil, climate, plant life, and animal life within different ecosystems.

3.12.3- Analyze the effects of physical and human forces on interdependence within different ecosystems.

3.3.4- Locate different ecosystems in their community.

3.3.5- Identify the living and nonliving elements of an ecosystem.

3.5.5- Investigate an ecosystem by asking and answering geographic questions.

3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.

3.12.5- Propose solutions to environmental problems using the concept of ecosystems.

4.2.7- Distinguish between wants and needs and describe how people fulfill them.

4.3.7- Compare the wants and needs of people in different communities and the means used to fulfill those wants and needs.

4.2.9- Identify places where cooperation and conflict take place.

4.3.9- Describe how cooperation and conflict affect people and places.

4.5.9- Describe issues of cooperation and conflict within the United States.

5.5.1- Describe ways in which changes in the physical environment affect humans.

5.8.2- Compare and contrast the opportunities and constraints that the physical environment places on human activity.

5.12.2- Evaluate strategies to respond to constraints placed on human systems by the physical environment.

5.2.4- Identify how people shape the physical environment at home and school.

- 5.3.4- Compare different ways in which people modify the physical environment.
- 5.5.4- Explore the impact of human modification of the physical environment on the people who live in that location.
- 5.8.4- Describe the changes that result from human modification of the physical environment.
- 5.12.4- Develop possible responses to changes caused by human modification of the physical environment.
- 5.3.6- Describe ways humans depend on natural resources.
- 5.5.6- Describe the patterns of **distribution** and use of natural resources in the United States.
- 5.3.7- List examples of how people use and manage natural resources within their communities.
- 6.2.4- Plan a spatial change for a classroom or school such as redesigning the playground or changing the location of furniture.
- 6.3.4- Predict possible geographic changes that could take place in their neighborhood or community.
- 6.5.4- Describe a geographic issue and the possible impact it could have in the future.
- 6.8.4- Describe several future outcomes of a geographic issue and defend one possible solution.
- 6.12.4- Predict possible outcomes and develop future policies for local or regional issues that have spatial dimensions.

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Grade Level K-12

Summary- *Are wetlands republican, democrat or independent?* Wetlands are everyone's concern. Students learn how to involve themselves in the grassroots process of wetland stewardship.

Objectives- Students will describe citizen's roles in the democratic process. Students will become aware of basic conservation measures. Students will participate in community service activities focused on wetland stewardship.

Science: Nature of Science: Scientific Inquiry

N.2.A.1- Students know how to make observations and give descriptions using words, numbers, and drawings.

N.8.A.1- Students know how to identify and critically evaluate information in data, tables, and graphs.

N.12.A.1- Students know tables, charts, illustrations and graphs can be used in making arguments and claims in oral and written presentations.

Science: Nature of Science: Science, Technology, and Society

N.2.B.1- Students know science engages men and women of all ages and backgrounds.

N.5.B.2- Students know technologies impact society, both positively and negatively.

N.8.B.1- Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.

N.12.B.1- Students know science, technology, and society influenced one another in both positive and negative ways.

N.12.B.2- Students know consumption patterns, conservation efforts, and cultural or social practices in countries have varying environmental impacts.

Science: Life Science: Organisms and Their Environment

L.5.C.3- Students know changes to an environment can be beneficial or detrimental to different organisms.

L.8.C.3- Students will evaluate how changes in environments can be beneficial or harmful.

L.12.C.1- Students know relationships of organisms and their physical environment.

L.8.C.4- Students know inter-related factors affect the number and type of organisms an ecosystem can support.

English Language Arts:

7.K.1, 7.1.1, 7.2.1, 7.3.1, 7.4.1, 7.5.1, 7.6.1, 7.7.1, 7.8.1, 7.12.1- Listen for a variety of purposes including gaining information, being entertained, understanding directions. Listen for and identify main idea, mood, purpose, messages, tone, persuasive techniques. Listen for and distinguish fact from opinion. Listen for and summarize ideas and supporting details. Listen for and evaluate the effect of the speaker's attitude on audience.

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8.K.4, 8.1.4, 8.2.4- Participate in group discussions following the turn-taking process. Ask relevant questions to clarify and gather information.

8.3.4, 8.4.4, 8.5.4, 8.6.4, 8.7.4, 8.8.4, 8.12.4- Contribute to conversations and discussion about a given topic. Respond to questions to clarify and extend ideas. Ask relevant questions to clarify information and extend ideas. Take a leadership role in conversations and discussions.

Distinguish between relevant and irrelevant information. Negotiate to arrive at consensus by proposing and examining possible options.

Social Studies: Geography

2.3.1- Identify differences between physical and human features.

2.5.1- Describe physical and human features and cultural characteristics of places and regions in the United States.

2.8.1- Describe the relationship between physical and human features, such as landforms and political boundaries.

2.12.1- Determine how relationships between humans and the physical environment lead to the development of and connections among places and regions.

3.2.3- Identify some basic elements of a simple ecosystem, such as plants and animals.

3.3.3- Identify different types of simple ecosystems, such as ponds, streams, or fields.

3.5.3- Identify the parts of different ecosystems, including soil, climate, plant life, and animal life.

3.3.4- Locate different ecosystems in their community.

3.8.5- Formulate a hypothesis about the changing nature of an ecosystem and use appropriate research skills to draw conclusions.

3.12.5- Propose solutions to environmental problems using the concept of ecosystems.

4.2.7- Distinguish between wants and needs and describe how people fulfill them.

4.3.7- Compare the wants and needs of people in different communities and the means used to fulfill those wants and needs.

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6.3.4- Predict possible geographic changes that could take place in their neighborhood or community.

6.5.4- Describe a geographic issue and the possible impact it could have in the future.

6.8.4- Describe several future outcomes of a geographic issue and defend one possible solution.

6.12.4- Predict possible outcomes and develop future policies for local or regional issues that have spatial dimensions.

7.2.3- Make simple lists and graphs and arrange visual materials to display geographic information.

7.3.3- Construct simple maps and graphs to display geographic information.

7.5.3- Create complex maps, graphs, or charts to display geographic information.

7.8.3- Create and prepare various forms of maps, graphs, diagrams, tables, or charts to organize geographic information.

7.12.3- Use a variety of tools and technologies to select and design appropriate forms of maps, graphs, diagrams, tables, or charts to organize geographic information.