The goal of Project Wet is to facilitate and promote awareness, appreciation, knowledge, and stewardship of water resources. Project Wet is a collection of innovative, water-related activities that are hands-on, easy to use, and fun! This unit is a journey of water resource discoveries.

This unit is organized to introduce the student to water as a natural resource. The next step is to provide a context for water in the Earth's systems. To understand the importance of water resources, students must realize they are managed. The last step to awareness is to understand water resources exist within social constructs. Through the eleven lessons in this plan, students should become more aware of personal and societal uses of water and how to preserve this precious commodity.

	Lesson #1
Title of Unit	Water Meter
Content Area	Mathematics, Science: Environmental, Health
Topics	Natural Resources: Uses, current; Management: Conservation
Activity Focus	Construct a water meter and keep track of personal water use.
Area of Study	Water Users
Learning Goal (Context)	Students will become more fully aware of their daily use of water. This activity serves as a good introduction to home water uses. Students should understand that water is a shared, limited resource.
Environmental Education Framework	Affect, Ecological Knowledge, Determinants of Environmentally Responsible Behavior
Assessment Strategies	Written communication; development of skills
Skills	Gather, Organize
Teaching Methods	Calculations, Record data, Graph/Map, Large group
Time Required	Approximately 1 week
Technology Standards	Creativity and Innovation • apply existing knowledge to generate new ideas, products, or processes • create original works as a means of personal or group expression

	Communication and Collaboration
	  • develop cultural understanding and global awareness by engaging with learners of other cultures
	Research and Information Fluency
	  • process data and report results
	Critical Thinking, Problem-Solving, and Decision-Making
	  • plan and manage activities to develop a solution or complete a project
	Technology Operations and Concepts
	  • understand and use technology systems
	  • select and use applications effectively and productively

Technologies Integrated	Students will use graphic organizers, word processing, and spreadsheet programs. I will use word processing and Powerpoint.
Resources	Project Wet Curriculum & Activity Guide
Unit Outline	Students use water throughout the day. Monitoring water use helps students analyze the quantity of water they use and how they use it. Recognizing how involved they are with water on a daily basis should foster an appreciation for the resource. What are the reactions to the amount of water used every day? What is the average for the entire class? Can students predict how much water the would use in 1-10 years? Students will research actual water usage for a local community. They will present their findings in a one-page document.

	Lesson #2
Title of Unit	Get the Ground Water Picture
Content Area	Mathematics, Social Studies: Government, Science: Earth, Environment, Ecology
Topics	Earth systems: ground water; Natural resources: miscellaneous; Management: quality, career
Activity Focus	Create an "Earth window" to investigate ground water systems
Area of Study	Ground water

Learning Goal (Context)	Students will "get the ground water picture" and learn about basic ground water principles as they create their own geologic cross section or earth window. Students will identify the parts of a ground water system. They will compare movement of water through diverse substrates. Students will also relate different types of land uses to potential ground water contamination.
Environmental Education Framework	Affect, ecological knowledge, knowledge of environmental issues
Assessment Strategies	Verbal communication, development of skills
Skills	Organize, analyze, interpret
Teaching Methods	Whole body, inquiry, calculations, graph/map, model, large group, small group
Time Required	Approximately 2 hours
Technology Standards	Creativity and Innovation • create original works as a means of personal or group expression • use models and simulations to explore complex systems and issues Research and Information Fluency • process data and report results Critical Thinking, Problem-Solving, and Decision-Making • plan and manage activities to develop a solution or complete a project Digital Citizenship • exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity • demonstrate personal responsibility for lifelong learning Technology Operations and Concepts • understand and use technology systems • select and use applications effectively and productively
Technologies Integrated	Students will use graphic organizers, word processing, internet programs, and drawing programs. I will use the same technologies.
Resources	Project Wet Curriculum & Activity Guide

Unit Outline	Students may be unaware they drink ground water every day. Creating a geologic cross section helps students become aware of this hidden source of water. Through observations, research, and demonstrations students will create their own personal cross section. They will research geological maps for local areas for comparison. They will create a presentation to share with the rest of the class. There will be a one-page summary of analysis.

	Lesson #3
Title of Unit	Old Water
Content Area	Mathematics, Fine Arts, Social Studies: History/Anthropology, Science: Earth
Topics	General Surface Water, Distribution, Water History
Activity Focus	Create a mural that relates events to the age of Earth, water, and life
Area of Study	General Surface Water, Distribution, Water History
Learning Goal (Context)	Students construct a time line to illustrate and interpret water's history. They will learn to appreciate the age of water. They will compare the proportion of time that water and life processes have existed on Earth.
Environmental Education Framework	Affect, Ecological Knowledge
Assessment Strategies	Product, drawn communication, development of skills
Skills	Organize, analyze, interpret, apply
Teaching Methods	Art form, calculations, research, large group
Time Required	Approximately 2 hours

Technology Standards	Creativity and Innovation • apply existing knowledge to generate new ideas, products, or processes • create original works as a means of personal or group expression Communication and Collaboration • interact, collaborate, and publish with peers, experts or others employing a variety of digital environments and media • communicate information and ideas effectively to multiple audiences using a variety of media and formats • develop cultural understanding and global awareness by engaging with learners of other cultures Research and Information Fluency • locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media • process data and report results Digital Citizenship • exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity • demonstrate personal responsibility for lifelong learning Technology Operations and Concepts • understand and use technology systems • select and use applications effectively and productively • transfer current knowledge to learning of new technologies
Technologies Integrated	Students will use graphic organizers, word processing, and drawing programs. I will use Powerpoint, a drawing program, and word processing.
Resources	Project Wet Curriculum & Activity Guide
Unit Outline	Compared to water's existence on Earth, humans have been around a significantly shorter amount of time. This can be difficult to conceptualize. Through proportional reasoning skills, students apply the abstract concept of time to a concrete example. Students will research data on actual time analysis for given samples. They will use the information to construct a portion of a time line.

	Lesson #4
Title of Unit	After Math
Content Area	Mathematics, Language Arts, Social Studies: Government, Science: Environmental
Topics	Earth Systems, Surface Water, general Natural Resources, miscellaneous Management, general
Activity Focus	Assess economic effects of water-related disasters
Area of Study	Natural Disasters
Learning Goal (Context)	By calculating economic loss that results from flooding in a specific area, students investigate how people are affected by floods and other weather events. Students will interpret how economic damage reports present individual and community losses from a natural disaster, differentiate between emotional and economic loss from a natural disaster, and recognize why some natural events are classified as disasters.
Environmental Education Framework	Affect, Socio-political Knowledge, Knowledge of Environmental Issues, Skills
Assessment Strategies	Verbal and written communication, skills developed
Skills	Gather, Organize, Analyze, Interpret, Apply
Teaching Methods	Whole body, Calculations, Record data, Graph/Map, Simulation, Large group
Time Required	Approximately 1 hour

Technology Standards	Creativity and Innovation
	  • use models and simulations to explore complex systems and issues
	Research and Information Fluency
	  • plan strategies to guide inquiry
	  • locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
	  • evaluate and select information sources and digital tools based on the appropriateness to specific tasks
	  • process data and report results

	Lesson #4
	Critical Thinking, Problem-Solving, and Decision-Making • plan and manage activities to develop a solution or complete a project • collect and analyze data to identify solutions and/or make informed decisions Technology Operations and Concepts • understand and use technology systems • select and use applications effectively and productively
Technologies Integrated	Students will create an electronic collage, a summary report of their findings, and a Powerpoint or news program. I will be creating be creating a small video, a powerpoint, and a digital grading rubric.
Resources	Project Wet Curriculum & Activity Guide
Unit Outline	Is it possible to "buy back" everything lost in a flood? Each student will locate news articles describing water-related natural disasters. They will also research the nature of each disaster, including: how much rain, snow, etc. fell and total cost of damage reported. Information collected will be made into a collage covering the past 25 years. The final project will be done through small groups by creating a 60 second news report.

	Lesson #5
Title of Unit	Reaching Your Limits
Content Area	Mathematics, Social Studies: Government, Science: Environmental, Health
Topics	Management: Quality, Career
Activity Focus	"Limbo" to learn basic water quality concepts and standards development
Area of Study	Wastewater Management
Learning Goal (Context)	Through a game of "limbo," students experience the effort involved in meeting drinking water quality standards. Simulating how polluted water requires more energy for treatment to meet standards than cleaner water helps students appreciate the importance of keeping water supplies clean.

Environmental Education Framework	Water resources are managed. Multiple use of water resources leads to diverse and sometimes conflicting demands, which require water resource management practices. Management decisions involve distribution of water resources and protection of acceptable water quality and quantity.
Assessment Strategies	Product, verbal and written communication, development of skills
Skills	Organize, analyze, interpret
Teaching Methods	Whole body, simulation, game, large group
Time Required	Approximately 1 hour
Technology Standards	Communication and Collaboration • communicate information and ideas effectively to multiple audiences using a variety of media and formats Research and Information Fluency • locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media • process data and report results
	Critical Thinking, Problem-Solving, and Decision-Making • plan and manage activities to develop a solution or complete a project • collect and analyze data to identify solutions and/or make informed decisions Technology Operations and Concepts • understand and use technology systems • select and use applications effectively and productively
Technologies Integrated	Students will create a spreadsheet and graph. I will use word processing and a graphic organizer.
Resources	Project Wet Curriculum & Activity Guide
Unit Outline	Students will describe the relationship between water quality and water treatment. They will become aware of the ratio one to a million. Students will simulate various water contaminations and treatments. They will use this information to predict how long and costs are related to polluted water sources.

	Lesson #6
Title of Unit	Money Down the Drain
Content Area	Mathematics, Science: Environmental
Topics	Natural Resources: miscellaneous, Management: conservation
Activity Focus	Observe and calculate water waste from a dripping faucet
Learning Goal (Context)	Through observation and simple calculations, students learn that a dripping faucet wastes a valuable resource. Students will calculate the amount of water wasted by a dripping faucet. They will analyze the financial benefits of fixing leaking faucets.
Environmental Education Framework	Affect, Knowledge of Environmental Issues
Assessment Strategies	Verbal communication, development of skills
Skills	Gather, organize, analyze, interpret, apply
Teaching Methods	Calculations, Record data, Simulation, Research, Large group, Small group
Time Required	Approximately 1 hour

Technology Standards	Research and Information Fluency
	  • process data and report results
	Critical Thinking, Problem-Solving, and Decision-Making
	  • plan and manage activities to develop a solution or complete a project
	Technology Operations and Concepts
	  • understand and use technology systems
	  • select and use applications effectively and productively

Technologies Integrated	Students will use calculators, graphic organizers, spreadsheets, and word processing. I will use word processing and a drawing program.
Resources	Project Wet Curriculum & Activity Guide

Unit Outline	This introductory activity could be done to illustrate processes and costs involved in delivering clean water to students' homes. After observing and recording data, students will analyze the amount of water lost from a leaky faucet. They will create a one-page summary answering questions. Do you think the amount of money lost from 24 hours of leaking was significant? Students will calculate how much water is lost. They will research the cost and time for a plumber to fix the leak. Posters will be created to promote proper water system maintenance.

	Lesson #7
Title of Unit	Macroinvertebrate Mayhem
Content Area	Mathematics, Science: Environmental & Ecology
Topics	Natural Resource: non-point, Management: quality, career
Activity Focus	Illustrate, through a game of tag, how macroinvertebrate populations indicate water quality
Area of Study	Wastewater Management
Learning Goal (Context)	Students play a game of tag to simulate the effects of environmental stressors on macroinvertebrate populations. Students will illustrate how tolerance to water quality conditions varies among macroinvertebrate organisms. They will explain how population diversity provides insight into the health of an ecosystem.
Environmental Education Framework	Ecological knowledge, knowledge of environmental issues, determinants of environmentally responsible behavior, skills
Assessment Strategies	Product, verbal communication, development of skills
Skills	Gather, organize, analyze, interpret, apply
Teaching Methods	Whole body, calculations, record data, simulation, game, research, large group
Time Required	Approximately 2 hours

Technology Standards	Technology Operations and Concepts
	    • understand and use technology systems
	    • select and use applications effectively and productively
	    • troubleshoot systems and applications
	    • transfer current knowledge to learning of new technologies

Technologies Integrated	Students will use word processing, graphic organizers, calculators, and internet programs. I will use word processing and Powerpoint.
Resources	Project Wet Curriculum & Activity Guide
Unit Outline	Students may have already learned certain ways to test water quality and may have conducted macroinvertebrate stream studies. Simulating how environmental stressors affect macroinvertebrate populations helps students relate to the concept of biodiversity to the health of the aquatic ecosystems. Students will research their given organism and prepare a presentation for the class. Students will play a simulation tag game to obtain information on stressors on aquatic life. Observations will be recorded and analyzed. Using this information, they will further research a local area for changes in aquatic life due to environmental and man-made stressors.

	Lesson #8
Title of Unit	Every Drop Counts
Content Area	Mathematics, Language Arts, Social Studies: Government, Science: Environmental
Topics	Management: Conservation
Activity Focus	Identify and implement water conservation habits
Area of Study	Water Users
Learning Goal (Context)	Students identify and implement water conservation habits to learn how this essential resource can be shared with other water users of today and tomorrow. Students will determine how water conservation practices save water. They will identify water conservation habits they can change or adapt. They will recognize that water conservation is important.

Environmental Education Framework	Socio-political knowledge, knowledge of environmental issues, skills, determinants of environmentally responsible behavior, environmentally responsible behavior
Assessment Strategies	Observation, written communication, development of skills
Skills	Gather, interpret, apply, evaluate
Teaching Methods	Whole body, hands-on, art form, calculations, record data, graph/map, simulation, large group, small group
Time Required	Approximately 1 week
Technology Standards	Research and Information Fluency • plan strategies to guide inquiry • locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media • evaluate and select information sources and digital tools based on the appropriateness to specific tasks • process data and report results Critical Thinking, Problem-Solving, and Decision-Making • collect and analyze data to identify solutions and/or make informed decisions • Digital Citizenship • advocate and practice safe, legal, and responsible use of information and technology • exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity • demonstrate personal responsibility for lifelong learning Technology Operations and Concepts • understand and use technology systems • select and use applications effectively and productively
Technologies Integrated	Students will create a one-page summary of activities. I will use word processing, Powerpoint, and graphic organizers.
Resources	Project Wet Curriculum & Activity Guide
Unit Outline	By participating in simple water-saving measures, students experience ways they can positively contribute to the conservation of water. Students will record personal water use for one week. They will keep journals on their observations, a "water journal." After data is collected,

	students will determine if any uses were above expected or needed water needs. They will also research material on suggested water usage for every day activities. They will create a presentation to summarize their findings.

	Lesson #9
Title of Unit	Back to the Future
Content Area	Mathematics, Social Studies: Government, Science: Earth & Environmental
Topics	Earth Systems: Surface Water, general; Natural Resources: miscellaneous; Management: general, career
Activity Focus	Analyze streamflow data to predict floods and water shortages
Learning Goal (Context)	Students analyze streamflow monitoring data to determine the safest location for a future community. Students will analyze and interpret streamflow data. They will identify the risks and benefits of development in a floodplain.
Environmental Education Framework	Ecological knowledge, socio-political knowledge, knowledge of environmental issues, skills, determinants of environmentally responsible behavior
Assessment Strategies	Verbal communication, drawn communication, development of skills
Skills	Organize, analyze, interpret, apply, evaluate
Teaching Methods	Calculations, graph/map, debate, small group
Time Required	Approximately 90 minutes
Technology Standards	Creativity and Innovation • use models and simulations to explore complex systems and issues • identify trends and forecast possibilities Communication and Collaboration • develop cultural understanding and global awareness by engaging with learners of other cultures • contribute to teams to produce original works or solve problems •

	Research and Information Fluency
	   • locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
	   • process data and report results
	Critical Thinking, Problem-Solving, and Decision-Making
	   • collect and analyze data to identify solutions and/or make informed decisions
	Technology Operations and Concepts
	   • understand and use technology systems
	   • select and use applications effectively and productively

Technologies Integrated	Students will use electronic news sources, internet programs, word processing, graphic organizers, and word processing. I will use PowerPoint, word processing, and a spreadsheet.
Resources	Project Wet Curriculum & Activity Guide
Unit Outline	Students analyze streamflow monitoring data to determine the safest location for a future community. Students should understand the basics of watersheds. Students will analyze and interpret streamflow data. They will identify the risks and benefits of development in a floodplain. Students will research videos on streamflow in a given area. They will follow the flow of water, observing all fluctuations. In addition, they will research local water community planning maps. Using the data obtained, they will create a "simulation" to present their findings to the rest of the class.

	Lesson #10
Title of Unit	Easy Street
Content Area	Mathematics, Language Arts, Social Studies: History/Anthropology, Science: Environmental
Topics	Natural Resources: Historic uses, Management: Conservation
Activity Focus	Compare quantities of water used in the late 1800s and in the present
Area of Study	Water history

Learning Goal (Context)	Students compare the quantities of water used by a contemporary family to one in the late 1800s, and investigate changes in water use habits. Students will compare and contrast contemporary and historical water uses. They will identify water conservation strategies.
Environmental Education Framework	Socio-political knowledge, knowledge of environmental issues, skills
Assessment Strategies	Verbal and written communication, development of skills
Skills	Gather, analyze, interpret, apply, evaluate
Teaching Methods	Inquiry, reading, calculations, record data, large group, small group
Time Required	Approximately 90 minutes
Technology Standards	Creativity and Innovation • identify trends and forecast possibilities Research and Information Fluency • plan strategies to guide inquiry • locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media • process data and report results Technology Operations and Concepts • understand and use technology systems • select and use applications effectively and productively
Technologies Integrated	Students will use internet programs, search engines, graphic organizers, and word processing. I will use Powerpoint and a spreadsheet.
Resources	Project Wet Curriculum & Activity Guide
Unit Outline	Too often, we take water for granted. This was not always so. In many parts of the world, including some regions of North America, hauling water was and is a common practice. Students will imagine how differently they would feel about water if they had to pump and carry it by hand. Also, the effects of drought or pollution on the life-giving supply we too easily think of as infinite will be investigated.

Students will choose a decade within the 1800s to research. They will look for information on common family and farm life. In addition, they will be given a local area to research. They will read through and take part in a simulation. All observations will be used to compare current and past water usage. Students will prepare a presentation to answer specific questions like, what lifestyles and activities impact water usage today?

	Lesson #11
Title of Unit	Choices and Preferences
Content Area	Mathematics, Social Studies: Government, Science: Environmental
Topics	Natural Resources: Current uses
Activity Focus	Develop a "water index" to rank water uses
Area of Study	Public process, water users
Learning Goal (Context)	Students rank and compare different uses of water. The class develops a "water index," an indication of the group's feelings and values about water and its uses. Students will analyze how people perceive the value of various water uses differently.
Environmental Education Framework	Affect, socio-political knowledge, skills
Assessment Strategies	Verbal communication, self/peer evaluation, development of skills
Skills	Gather, organize, analyze, interpret
Teaching Methods	Inquiry, calculations, record data, graph/map, debate, large group, small group
Time Required	Approximately 1 hour

Technology Standards	Creativity and Innovation
	  • create original works as a means of personal or group expression
	  • use models and simulations to explore complex systems and issues
	Communication and Collaboration
	  • contribute to teams to produce original works or solve problems
	  •

	Research and Information Fluency • plan strategies to guide inquiry • process data and report results Technology Operations and Concepts • select and use applications effectively and productively
Technologies Integrated	Students will use word processing, movie making programs, and a drawing program. I will use the same technology.
Resources	Project Wet Curriculum & Activity Guide
Unit Outline	Students should understand their list of favorites may differ from another person's. Involving students in learning how their peers rank water resource uses will help them appreciate how differing opinions influence water resource management strategies. Students will use graphing, basic math skills, and interviews to collect data on water resources uses. They will analyze their findings. In addition, small groups will create a presentation based on the average. As a final project, students will research water resource policies for a local area.