Lesson Plan
4 of 4

A Water Plan for the Future

Created: 07/2025 by the National FFA Organization

Description of Lesson: This project-based lesson challenges students to apply their knowledge of water conservation to real-world scenarios, creating personalized, actionable water conservation plans. Students will develop a water-saving strategy for their household, school agriculture facilities or a local business. Through research, collaboration and presentation, students will gain a deeper understanding of how individual actions can make a significant impact on conserving this vital resource.

Thank you to our current partners in sustainability:

Student Learning Objectives:

After completing these activities, students will …

1. Apply knowledge of water conservation to create a personalized or community-based plan.

Suggested Grade Level:

Grades 9 and 10 (This lesson is written so instructors can scale up or down based on class needs.)

Suggested Time:

90 minutes (*Time requirements may vary based upon student understanding and class schedule.)

Resources/References:

1. Website: U.S. Environmental Protection Agency (EPA), Our Water, https://www.epa.gov/watersense/our-water
2. Website: U.S. EPA, How We Use Water, https://www.epa.gov/watersense/how-we-use-water
3. Website: U.S. EPA, Water Topics, https://www.epa.gov/environmental-topics/water-topics

Related Resources:

1. Food and Agricultural Literacy Curriculum, Natural Resources, Unit 3: Water, https://FFA.box.com/s/w5ypjcs5s1v6h5er5819j2lcvicvzdoq
2. AgExplorer Sustainability Systems Focus Area, AgExplorer.FFA.org/focus/sustainability-systems/
3. Introduction to Sustainability Lesson Series, https://FFA.box.com/v/introtosustainability
4. Darling Ingredients Educational Resources, https://FFA.box.com/s/3ko8e9w6zygohv1ewfsnc8byobjzeuxa
5. Valent — Sustainability in Agriculture Lesson Series, https://FFA.box.com/v/sustainabilityinagriculture

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Equipment and Supplies Needed:

1. A copy of the "Let's Make a Plan" student activity sheet for each student
2. Student devices with internet access

Vocabulary:

1. Conservation

Cross-Curricular Connections:

English/Language Arts	Social Studies
Write a water conservation plan for personal use, the school's agriculture facilities or a local business. Present the plans in small groups.	Explore how water conservation strategies impact the community.

SAE and FFA Connections

1. Environmental and Natural Resources CDE, FFA.org/participate/cdes/environmental-and-natural-resources/
2. Agricultural Proficiency Areas: Environmental Science and Natural Resources Management, FFA.org/participate/awards/proficiencies/
3. Foundational SAE Connections: Agricultural Literacy

Student Activity Sheets:

Direct access to student activity sheets without lesson plan or answer key for easy upload to a learning management system or printing for classwork.

https://ffa.box.com/s/c4wbpe06pv1a9k51y05204p3udohgvvv (Word)
https://ffa.box.com/s/nejmcyk6d73b1m47z8vfjl3z5fx7xsr7 (Word, Non-designed)
https://ffa.box.com/s/6owdwc6flpwhacti8y8bdt3yjhbmldzk (PDF)
https://docs.google.com/document/d/1aqAcsONQ5oF7Tb6oUD9EpevjhisliBMXRmiQIUjQRWE/copy (Google)

These Activities Are Aligned to the Following Standards:

AFNR Performance Element

- CS.03. Examine and summarize the importance of health, safety and environmental management systems in AFNR workplaces.
- CS.04. Demonstrate stewardship of natural resources in AFNR activities.
- NRS.01. Plan and conduct natural resource management activities that apply logical, reasoned, and scientifically based solutions to natural resource issues and goals.
- NRS.02. Analyze the interrelationships between natural resources and humans.
- NRS.04. Demonstrate responsible management procedures and techniques to protect, maintain, enhance, and improve natural resources.

FFA Precept

- FFA.PL-A.Action: Assume responsibility and take the necessary steps to achieve the desired results, no matter what the goal or task at hand.
- FFA.PL-C.Vision: Visualize the future and how to get there.
- FFA.PL-E.Awareness: Understand personal vision, mission and goals.
- FFA.PL-F.Continuous Improvement: Accept responsibility for learning and personal growth.
- FFA.CS-N.Decision Making: Analyze a situation and execute an appropriate course of action.

Common Career Technical Core

- AG3 Examine and summarize the importance of health, safety, and environmental management systems in AFNR businesses.
- AG4 Demonstrate stewardship of natural resources in AFNR activities.
- AG-NR1 Plan and conduct natural resource management activities that apply logical, reasoned, and scientifically based solutions to natural resource issues and goals.
- AG-NR2 Analyze the interrelationships between natural resources and humans.

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- AG-NR4 Demonstrate responsible management procedures and techniques to protect or maintain natural resources.

NASDCTEc

- AGPE01.01 Conduct system management activities in natural habitats to demonstrate recognition of the important relationships between natural resource preservation and human intervention.
- AGPE01.03 Apply scientific principle and processes when planning and conducting natural resource management activities to determine the need, feasibility and application of logical, reasoned solutions to natural resource system problems and issues.
- AGPE01.05 Practice responsible control and management procedures and techniques to protect or maintain natural resources in a variety of settings.

Common Core – Writing

- CCSS.ELA-Literacy.W.9-10.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
- CCSS.ELA-LITERACY.W.9-10.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Common Core – Speaking and Listening

- CCSS.ELA-LITERACY.SL.9-10.4 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

Common Core – Language

- CCSS.ELA-LITERACY.L.9-10.6 Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Common Core – Science & Technical Subjects

- CCSS.ELA-Literacy.RST.9.10.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.

Common Core – Literacy in Science & Technical Subjects: Writing

- CCSS.ELA-Literacy.WHST.9.10.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Next Generation Science

- HS-ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

Green/Sustainability Knowledge and Skill Statements

- AFNR Career Cluster, Statement 1 Apply understanding of ecosystems and systems thinking to the management of natural resources to maximize the health and productivity of the environment, agriculture, communities, and society.
- AFNR Career Cluster, Statement 3 Communicate the impact of green and sustainability principles on agriculture, food and natural resource systems.
- AFNR Career Cluster, Statement 7 Demonstrate an understanding of green and sustainability trends that are impacting processes and markets in AFNR.
- AFNR Career Cluster-Natural Resources Systems Pathway, Statement 2 Develop strategies to influence natural resource management and utilization policies and practices through application of sustainability principles.

AFNR Career Ready Practices

- CRP.02. Apply appropriate academic and technical skills. Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive.
- CRP.04. Communicate clearly, effectively, and with reason. Career-ready individuals communicate thoughts, ideas and action plans with clarity, whether using written, verbal and/or visual methods.
- CRP.05. Consider the environmental, social and economic impact of decisions. Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organizations and the environment.

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- CRP.06. Demonstrate creativity and innovation. Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization.
- CRP.08. Utilize critical thinking to make sense of problems and persevere in solving them. Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem.
- CRP.11. Use technology to enhance productivity. Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems.

Partnership for 21st Century Skills

- Communication
- Critical Thinking and Problem Solving
- Environmental Literacy
- Global Awareness
- Information, Communications, and Technology Literacy
- Initiative and Self-direction
- Leadership and Responsibility
- Technology Literacy
- Think Creatively

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Lesson Plan:

1. **Bell Ringer:** Think about your home, school or a business you know. What are three ways water is used there? What changes could be made to save water?

2. **Introduction:** Say: *Water is essential to perform different functions and activities at home, at school or in a business, but sometimes, we use more than we need. It can be easy to go a little overboard with our water use if we're not being intentional. Today, we are going to apply everything we've learned about water conservation to a real-world project. You'll each create a water conservation plan for either yourself and your family, a local business or our school's agriculture facilities. The goal is to identify ways to reduce water usage and create a plan that's specific and actionable.*

3. **Activity:** *(75 minutes)* Each student needs a copy of the student activity sheet "Let's Make a Plan."
    a. **Teacher Note:** You may have students complete this activity on their own or in pairs, depending on what context works better for your classroom.
    b. **Part 1:**
        i. Students will have the option to choose one of three contexts for their water conservation plan.
            1. Personal water conservation plan: Create a plan for your household that reduces water use. Think about the different ways you and your family use water on a daily basis and where you can make changes.
            2. School agriculture facilities water conservation plan: Develop a plan to reduce water usage in the agriculture facilities at your school, such as reducing irrigation waste, managing livestock watering or conserving water in farm structures.
            3. Local business water conservation plan: Create a plan for a local business, like a restaurant or farm, to reduce their water consumption. Consider their daily operations and how they might conserve water in areas like dishwashing, production, irrigation and landscaping.
        ii. Students will use the provided graphic organizer and rubric to outline their plan for their selected context. In doing so, they will identify the following items for their plan:
            1. Current water use
            2. Areas for improvement
            3. Proposed water conservation strategies
            4. Measurable goals
            5. Resources needed
            6. Timeline
            7. Reflection and expected outcomes
        iii. Provide students with 45 to 55 minutes to work through their research and their plans.
        iv. If possible, allow students to take the project home and converse with their family or the local business owner or employees to provide even more real-world context to the project.
    c. **Part 2:** Divide students into small groups (three to five individuals or pairs per group) and have them present their plans within their groups. Allow each student or pair five or six minutes to explain their plan to the others in their group. After each person or pair presents, the other students in the group will provide feedback and suggestions for improvement or refinement. Students will record these suggestions on their student activity sheets and answer a few reflection questions. Students may also record strategies or ideas from other groups' plans that they think they could add to their own.

4. **Follow-up:** Have each small group choose the "best" plan from their group to be shared with the class. Hold a wrap-up discussion with the class. Good discussion points could include the following:
    a. Strengths of the plans they saw and heard about
    b. The differences in conservation plans for households, businesses and agricultural facilities
    c. Potential challenges to implementing water conservation strategies
    d. Local attitudes and efforts toward water conservation programs
    e. The importance of continuing to learn about and advocate for responsible and conservative water use

    To sum up the lesson, say: *The work of water conservation is and will be constant. As new challenges, tools and technologies arise, water conservation plans and strategies will always need to be adapted. We must always be aware of our water use and look for ways in which we can use water more efficiently. That goes for us as*

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individuals as well as entire industries like agriculture. We only have so much water on Earth; it's our job to ensure it is being used responsibly.

5. **Optional – Extended Learning Opportunities (Not factored into time requirement):**
    a. Have students present their plans to their families, the local business or you, depending on which context they chose. Have them solicit feedback from those entities and revise their plans. Students could then work collaboratively with those people to implement their strategies.

6. **Exit Ticket:** Share one interesting or surprising water conservation strategy you learned from a classmate.s presentation.

Teacher Note: This lesson's activities depend wholly on students' personal results, thoughts and reflections, so no answer keys are included.

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Let's Make a Plan

Aligned to the following standards:
CS.03; CS.04; NRS.01; NRS.02; NRS.04; FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PL-F; FFA.PL-N; AG3; AG4; AG-NR1; AG-NR2; AG-NR4; CCSS.ELA.W.9-10.2; CCSS.ELA.W.9-10.7; CCSS.ELA.SL.9-10.4; CCSS.ELA.L.9-10.6; CCSS.ELA.RST.9.10.4; CCSS.ELA.WHST.9.10.7; HS-ETS1-3; CRP.02; CRP.04; CRP.05; CRP.06; CRP.08; CRP.11;

Part 1

Directions: Use the graphic organizer throughout the next few pages to create your water conservation plan.

Check the box for which type of water conservation plan you will be creating.

☐	Personal/Household	☐	School Agriculture Facilities	☐	Local Business

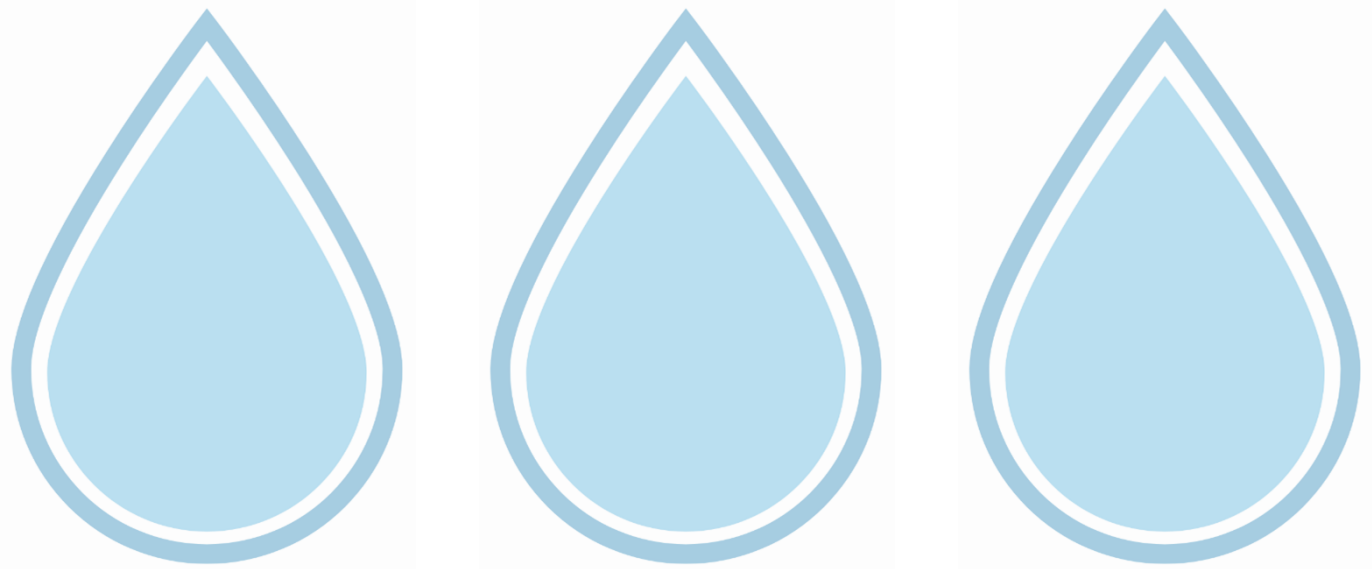
1. Current Water Use:

Where is water currently used in this setting? How much is being used?
List as many specific uses for water as you can think of and record actual usage if available or your best estimate of either volume (gallons, acre-feet, etc.) or percentages for each use.

Water Use	Amount Used

2. Identifying Areas for Improvement:

Highlight the three areas above that use the most water and write them at the tops of the water droplets below. Then, in each droplet, list two or three water-saving strategies that could be applied to that area.



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3. Proposed Water Conservation Strategies:

On the sticky note below, list four strategies you plan to implement.
Be specific and provide actionable steps.

1.

2.

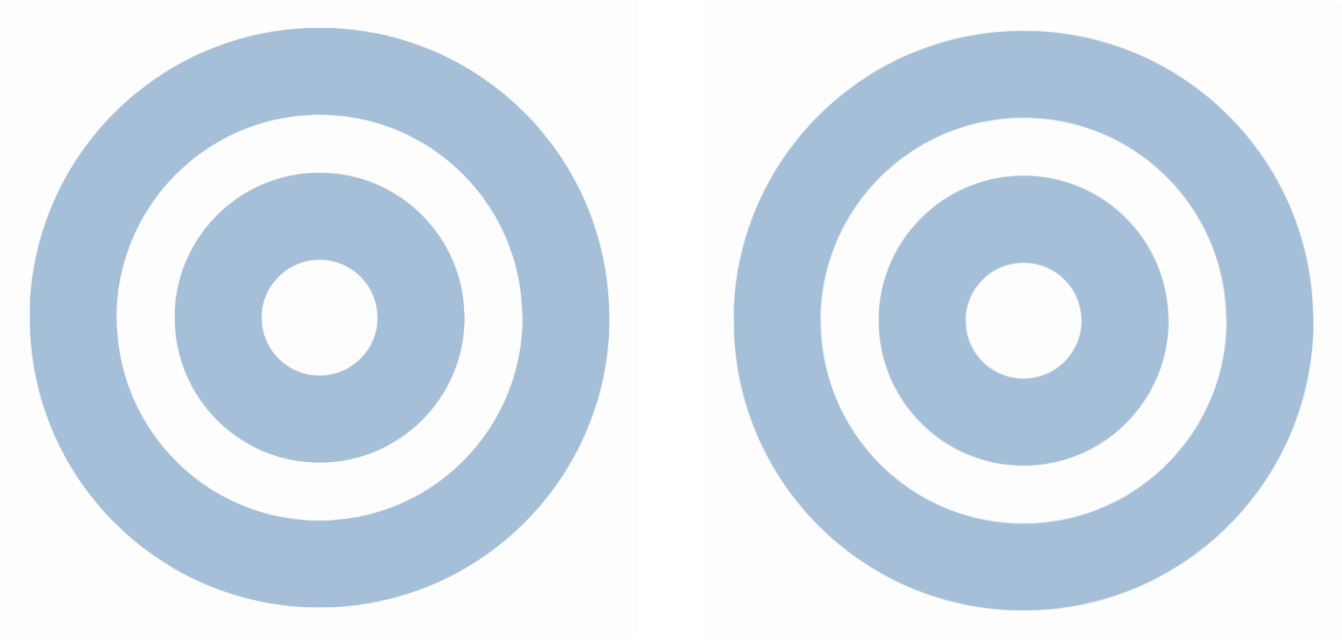
3.

4.

Why do you think the strategies you listed are the best strategies for your plan? *(Explain in two to three sentences.)*

4. Measurable Goals:

What are your targets for water savings? Record one goal on each of the targets below.
Make sure your goals are measurable (amount of water saved, percentage of consumption reduced, etc.).

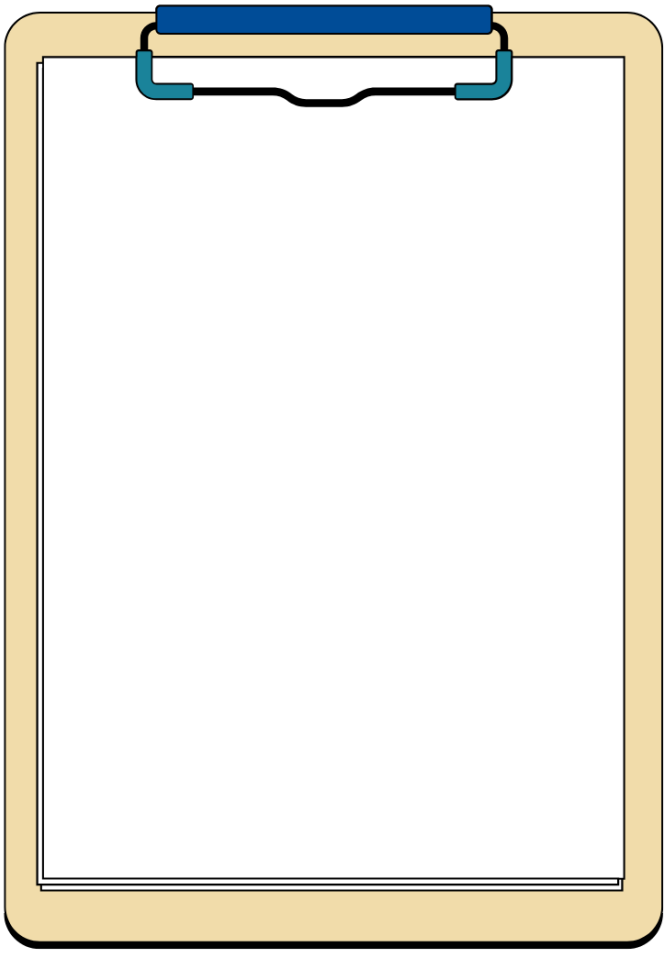


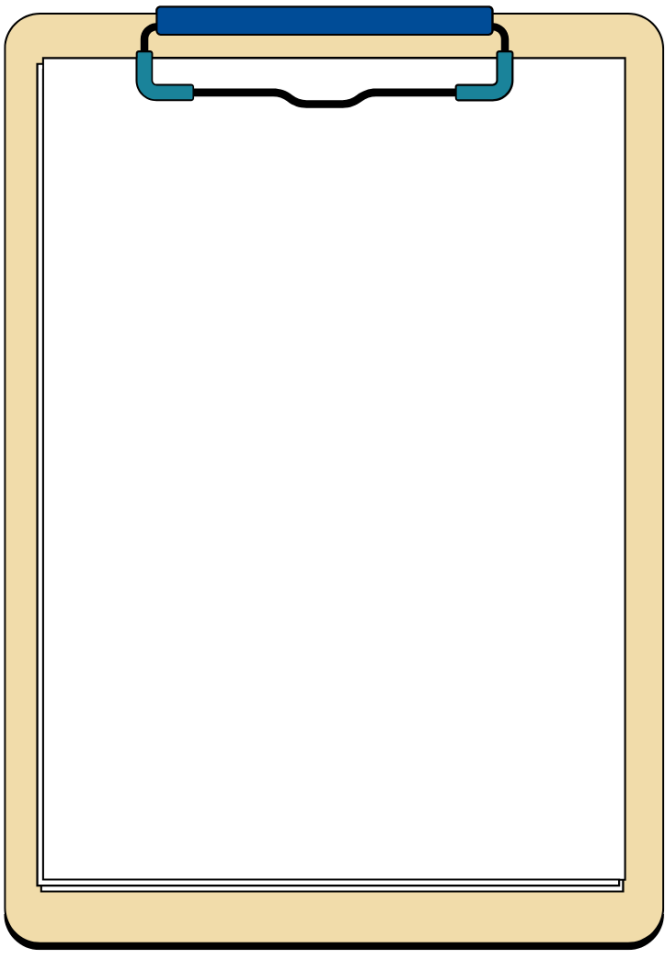
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5. Resources and Help Needed:

Conserving water does require certain resources and people to help us accomplish our goals. On one of the clipboards below, list out any materials or resources you will need to help implement your plan. On the other clipboard, list other people who you are going to need to partner with in order to accomplish your goals.





6. Timeline:

On the blank timeline below, record at least three projected milestones for your conservation plan as well as a projected start date and projected completion date for implementation. Of course, water conservation work is never fully complete; this timeline is merely projecting when your plan will be fully implemented.

Start Date: **Completion Date:**

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Name: _____

7. Reflection and Expected Outcomes:

Answer the questions below to reflect on your water conservation plan.

1. How will you measure the success of your water conservation plan? What metrics will you use to track your progress?

2. What are two challenges or obstacles you might face when implementing your plan?

    a.

    b.

3. What new information or insights did you gain as you were developing your plan? List three things.

    a.

    b.

    c.

4. In your own words, explain why water conservation is important to you and your community. *(Explain in four or five sentences.)*

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Water Conservation Plan Rubric

Category	Excellent (5 pts)	Good (3-4 pts)	Developing (2 pts)	Needs Improvement (0-1 pt)
Content and Accuracy	Plan is detailed, well-researched and shows deep understanding of water conservation techniques. Includes realistic, effective strategies	Plan is clear and accurate with relevant strategies, though some minor details could be further developed.	Plan is incomplete or has inaccurate details. Some strategies are unclear or unrealistic.	Plan lacks detail or accuracy. Strategies are missing or not applicable to the setting.
Creativity and Innovation	The plan is highly creative, offering unique and practical solutions. Shows original thinking	The plan demonstrates some creativity and includes practical solutions.	The plan has minimal creativity or overly basic solutions.	The plan lacks creativity and relies on obvious or impractical solutions.
Measurable Goals	Goals are clear, measurable and ambitious. Includes specific numerical targets	Goals are clear and measurable but could be more specific or ambitious.	Goals are vaguely defined and lack measurable criteria.	Goals are unclear or missing entirely.
Presentation	Presentation is well-organized, engaging and thoroughly covers all aspects of the plan.	Presentation is organized and covers most aspects but may lack some depth or clarity.	Presentation is disorganized or omits some key elements.	Presentation is unclear, incomplete or difficult to follow.
Implementation and Feasibility	The plan is highly feasible with clear steps for implementation and realistic timelines.	The plan is mostly feasible with a realistic approach to implementation and timeline.	The plan may be difficult to implement or has unrealistic steps.	The plan is not feasible with unclear or unachievable steps.
Reflection and Analysis	The reflection is thoughtful, analyzing the impact of the plan and its potential benefits in-depth.	The reflection is clear and provides a reasonable analysis of the plan's impact.	The reflection is brief or lacks depth in analyzing the benefits of the plan.	The reflection is missing or lacks any analysis of the plan's impact.
			Total Score	**/30**

Comments: _____

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