Cal Water H_2O Challenge Rubric

School Name	School District	Grade Level	Evaluator Name and Number

Teacher Name	Cal Water H_2O Challenge Project Name	Total Score

	POSSIBLE POINTS	SCORE
1. Cal Water H_2O Challenge Impact (45 Points)		
A. Importance of Cal Water H_2O Challenge Issue	15	
B. Design to Action Plan: Coherence	10	
C. Design to Action Plan: Science and Engineering Accuracy	10	
D. Prediction of Long-Term Environmental Impact	10	
2. Impact ON STUDENT Learning (40 Points)		
A. Integral to Student Learning	10	
B. Student Participation	15	
C. Student Reflection	15	
3. Presentation (10 Points)		
A. Overall Quality of the Presentation of the Portfolio	10	
4. Impact ON Teacher Practice (5 Points)		
A. Teacher Reflection	5	

Grand Total

COMPONENT #1:
Cal Water H_2O Challenge Impact
(Total possible points: 45)

A. Importance of Cal Water H_2O Challenge Issue
(Total possible points: 15)

Guiding Questions:

- Which "design to action (solution)" did the class or school-based club choose to do this Cal H_2O Challenge:
  ____Design and Implement; or ____Design and Build Model Working Models; or ____Design a Solution and Conduct an Advocacy Campaign
- Why would this Cal Water H_2O Challenge be important to the school and community?

15 Points	10 Points	5 Points	1 Point
Cal Water H_2O Challenge **FULLY DEMONSTRATES** student understanding of **ONE** key water issue or concern in the school **AND** local community based on science concepts with evidence that the topic of the Cal Water H_2O Challenge is important to the community and school and addresses California's water supply **AND** Demonstrates understanding of how iterative designs contribute to problem solving.	Cal Water H_2O Challenge **FULLY DEMONSTRATES** student understanding of **ONE** key water issue or concern in school **OR** local community based on science concepts with limited evidence that the topic of the Cal Water H_2O Challenge is important to the community OR school and addresses California's water supply **AND** Demonstrates understanding of how iterative designs contribute to problem solving.	Cal Water H_2O Challenge **DEMONSTRATES LIMITED** student understanding of **ONE** key water issue or concern in school and/or local community based on science concepts with some or little evidence that the topic of the Cal Water H_2O Challenge is important to the community/school and may or may not address California's water supply **AND** Demonstrates how designs contribute to problem-solving.	Cal Water H_2O Challenge includes **MORE THAN ONE** key water issue with multiple activities that may or may not connect to one another with some or little evidence that the topic of the Cal Water H_2O Challenge is important to the community/ school and may or may not address California's water supply.

Use specific evidence from the portfolio to support your score.

POINTS

COMPONENT #1:
Cal Water H2O Challenge Impact
(Total possible points: 45)

B. Design and Action/Solution Plan: Coherence
(Total possible points: 10)

Guiding Questions:

- What is the relationship between the identified problem/goal to be solved, design plan and action/solution?
  (Design and Implement, Design and Build Working Models, Design a Solution and Conduct Advocacy Campaign)
- How were results of the action/solution communicated to the school and community?

10 Points	5 Points	1 Point
There is a **Clear LINK** from the identified problem/goal to the design plan and to the actions/solution to address the identified water issue **AND** A plan exists to communicate findings and action from the plan with school **AND** community.	There is a **Moderate LINK** from identified problem/goal to the design plan and to the actions/solution to address the identified water issue **AND** A plan exists to communicate findings and actions from the plan with school **AND/OR** community.	There is a **NO LINK** from identified problem/goal to the design plan and to the actions/ solution to address the identified water issue **AND** Findings and actions from the plan **May OR May NOT BE Communicated** to school and/or community.

Use specific evidence from the portfolio to support your score.

POINTS

COMPONENT #1:
Cal Water H2O Challenge Impact
(Total possible points: 45)

C. Design and Action/Solution Plan: Science and Engineering Accuracy
(Total possible points: 10)

Guiding Questions:

- What is the accuracy of the science concepts in the project?
- What is the accuracy of the engineering design principles in the project?

10 Points	5 Points	1 Point
Learning experiences of the Cal Water H2O Challenge **Are Based** on sound scientific concepts related to the issue **AND** Learning experiences of the Cal Water H2O Challenge **Are Based** on sound engineering design principles (define problem, develop solutions through multiple trials; optimize to improve based on results of simple tests) related to the issue.	Learning experiences of the Cal Water H2O Challenge **Are Somewhat Based** on sound scientific concepts related to the issue **AND** Learning experiences of the Cal Water H2O Challenge **May or May NOT be Based** on engineering design principles (define problem, develop solutions through multiple trials; optimize to improve based on results of simple tests) related to the issue.	Learning experiences of Cal Water H2O Challenge **are NOT Based** on sound scientific concepts related to the issue **OR** Learning experiences of Cal Water H2O Challenge **do not follow sound engineering design principles**.

Use specific evidence from the portfolio to support your score.

POINTS

COMPONENT #1:
Cal Water H_2O Challenge Impact
(Total possible points: 40)

D. Potential of Long-Term Environmental Impact
(Total possible points: 10)

Guiding Questions:

- How was this Cal Water H_2O Challenge important to students, the school and/or community?
- Will we see the effects of this Challenge in 3-5 years? What is (are) the enduring aspect(s) of this Cal Water H_2O Challenge?

10 Points	5 Points	1 Point
There is **Clear EVIDENCE** that the Cal Water H_2O Challenge resulted in a change in student thinking about short- and long-term responsible actions related to the goal(s) of the Cal Water H_2O Challenge. **AND** **Potential LONG-TERM** impact of the Cal Water H_2O Challenge on water conservation within the school **AND/OR** community is **Clearly PREDICTED**.	There is **SOME EVIDENCE** that the Cal Water H_2O Challenge resulted in a change in student thinking about short- and long-term responsible actions related to the goal(s) of the Cal Water H_2O Challenge **AND** **Potential LONG-TERM** impact of the Cal Water H_2O Challenge on water conservation within the school or community is **Somewhat PREDICTED.**	A change in student thinking that may lead to short- and long-term responsible actions related to the goal(s) of the Cal Water H_2O Challenge **IS NOT PREDICTED** **OR** Only **SHORT-TERM** impact is **PREDICTED**.

Use specific evidence from the portfolio to support your score.

POINTS

COMPONENT #2:
Impact on Student Learning
(Total possible points: 40)

A. Integral to Student Learning
(Total possible points: 10)

Guiding Questions:

- How did this Cal Water H_2O Challenge improve upon or enhance student learning beyond the regular classroom curriculum?
- In what ways did the Cal Water H_2O Challenge help students use science and engineering practices, design process, mathematical practices and English language arts skills to understand the issues and work collaboratively to address the issues?

10 Points	5 Points	1 Point
Student work **Clearly Demonstrates** it is an integral part of the regular classroom or club curriculum. Evidence **includes citations** from NGSS and CCSS as well as students using the science and engineering practices to build understanding. **AND** **CLEARLY** connects classroom or after school learning with real world applications.	Student work **Demonstrates** it is an integral part of the regular classroom or club curriculum. NGSS or CCSS **citations are lacking**. **AND** **HAS MODERATE connections** with real world applications.	Student work **DOES NOT Indicate That it is an Integral Part** of the regular classroom or club curriculum. **AND** **HAS LIMITED OR NO connections** with real world applications.

Use specific evidence from the portfolio to support your score.

POINTS

COMPONENT #2:
Impact on Student Learning
(Total possible points: 40)

B. Student Participation
(Total possible points: 15)

Guiding Questions:

- In what ways were students actively involved in the selection, research, investigation, and evaluation of the Cal Water H_2O Challenge? In what ways did student thinking change because of their direct involvement in the Cal Water H_2O Challenge?

15 Points	10 Points	5 Points	1 Point
Student work demonstrates **Clear EVIDENCE** that students were involved in **all** of the following: inquiry, design, research, implementation, evaluation, and documentation. There is a documented evolution of the design plan over time.	Student work demonstrates **SOME EVIDENCE** that students were involved in **all** of the following: inquiry, design, research, implementation, evaluation, and some documentation of the evolution of the design plan over time.	Student work demonstrates **Clear OR SOME EVIDENCE** that students were involved in **SOME** of the following: inquiry, design, research, implementation, evaluation, and documentation of the evolution of the design plan.	Student work demonstrates that students were involved in **FEW OR NONE** of the following: inquiry, design, research, implementation, evaluation, and documentation of the evolution of the design plan.

Use specific evidence from the portfolio to support your score.

POINTS

COMPONENT #2:
Impact on Student Learning
(Total possible points: 40)

C. Student Reflection
(Total possible points: 15)

Guiding Questions:

- What evidence of student learning do I have? How will that learning be sustained?
- How did students move from awareness to stewardship and possible long-term, responsible action?
- In what ways did the Cal Water H_2O Challenge help students use critical thinking skills to evaluate water issues and make informed decisions to address those issues through their design solution?

15 Points	10 Points	5 Points	1 Point
Student reflection indicates: **Quality Learning** (i.e., multiple opportunities to develop and demonstrate critical thinking to evaluate WATER ISSUES and design solutions addressed in the Cal Water H_2O Challenge and make informed decisions) **AND** **Quality Learning** (i.e., multiple opportunities to develop and demonstrate skills and knowledge) **about OTHER aspects** of the Cal Water H_2O Challenge (e.g., using technology, writing, art, working as a team, etc.)	Student reflection indicates: **Quality Learning** (i.e., multiple opportunities to develop and demonstrate critical thinking to evaluate WATER ISSUES and design solutions addressed in the Cal Water H_2O Challenge and make informed decisions) **AND** **Quality Learning** (i.e., multiple opportunities to develop and demonstrate skills and knowledge) **about OTHER aspects** of the Cal Water H_2O Challenge (e.g., using technology, writing, art, working as a team, etc.)	Student reflection indicates: **Quality Learning** (i.e., multiple opportunities to develop and demonstrate critical thinking to evaluate WATER ISSUES and design solutions addressed in the Cal Water H_2O Challenge and make informed decisions) **OR** **Quality Learning** (i.e., multiple opportunities to develop and demonstrate skills and knowledge) **about OTHER aspects** of the Cal Water H_2O Challenge (e.g., using technology, writing, art, working as a team, etc.) **AND** **May OR May NOT** identify appropriate personal action to sustain **EITHER** learning.	Student reflection indicates **LITTLE OR NO** meaningful learning or personal action.

Use specific evidence from the portfolio to support your score.

POINTS

COMPONENT #3: Presentation

(Total possible points: 10)

A. Overall Quality of the Presentation of the Portfolio

(Total possible points: 10)

Guiding Questions:

- Can the reader understand the goals and outcomes of Cal Water H_2O Challenge from the presentation?
- How does the presentation demonstrate originality and creative efforts by the students and teacher?
- How were students involved in completing the presentation of the Challenge?

10 Points	5 Points	1 Point
Portfolio **IS COMPLETE** and displays all Challenge components, linking goals with Cal Water H_2O Challenge activities. **AND** Overall presentation of Cal Water H_2O Challenge is original, creative, and artistic, showing **Sustained EFFORT** and **Quality** attention to detail. **AND** There is **Clear EVIDENCE** that students were involved in the preparation of the portfolio.	Portfolio **IS COMPLETE** and displays all Challenge components, linking goals with Cal Water H_2O Challenge activities. **AND** Overall presentation of Cal Water H_2O Challenge is **Moderately** creative, showing **SOME EFFORT** and attention to detail. **AND** There is **Clear EVIDENCE** that students were involved in the preparation of the portfolio.	Portfolio **IS NOT COMPLETE**. **AND/OR** Overall presentation of Cal Water H_2O Challenge shows **LITTLE EFFORT** and attention to detail. **AND/OR** There is **SOME OR LITTLE EVIDENCE** that students were involved in the preparation of the portfolio.

Use specific evidence from the portfolio to support your score.

POINTS

COMPONENT #4:
Impact On Teacher Practice
(Total possible points: 5)

A. Teacher Reflection
(Total possible points: 5)

Guiding Questions:

- How do I know this Cal Water H_2O Challenge was successful and is making a difference?
- What evidence of student learning do I have? How will that learning be sustained?
- How did this Cal Water H_2O Challenge change my teaching practices to engage all students in meaningful learning experiences?
- How did this Cal Water H_2O Challenge improve upon or enhance student learning beyond the regular classroom curriculum?
- How did having to design a solution to a real-world problem challenge your students to think differently?

5 Points	1 Point
Teacher Reflection indicates **IN DEPTH REFLECTION** on topics such as: challenges and success; educational benefits such as changes in student learning (including engineering), interactions, and classroom culture; next steps for sustainability; social responsibility for water conservation. How did students understand the engineering process and the role of design to developing a solution to a real-world problem?	No teacher reflection included with Cal Water H_2O Challenge submission. **OR** Teacher Reflection **Overall Lacks DEPTH** of reflection on topics such as: challenges and success; educational benefits such as changes in student learning (including engineering), interactions, and classroom culture; next steps for sustainability; social responsibility for water conservation.

Use specific evidence from the portfolio to support your score.

POINTS