



# MCCS STEAM WATER CONSERVATION PROJECT

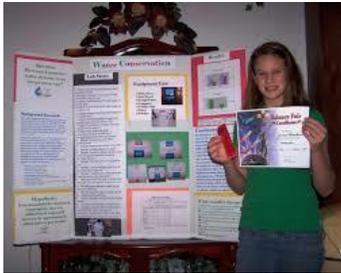
## Action Plan Academic Year 2019-2020

**Problem Statement:** Although over 70% of Earth’s surface is covered by water, less than 1% of this water is available for human consumption. The availability of clean drinking water on Earth is limited. Humanity is working on ways of purifying and conserving this critical resource. MCCS students will increase their environmental awareness and become active water conservationists through STEAM Education this academic year.

<b>Quarters</b>	<p><b><u>Quarter 1:</u></b>  <b><u>INVESTIGATE AND DRAW CONCLUSIONS</u></b>  <u>Investigate where water comes from and draw conclusions about how much drinking water we really have.</u></p> <p><b>Objective:</b> Students will investigate various natural and man-made water sources.</p> <p><b><u>Essential questions:</u></b></p> <ol style="list-style-type: none"> <li>Investigate where water for human consumption comes from.</li> <li>How would you determine where usable water located?</li> </ol>	<p><b><u>Quarter 2:</u></b>  <b><u>RESEARCH AND ASSESS:</u></b>  <u>Analyze water related problems.</u></p> <p><b>Objective:</b> Students will increase environmental awareness by researching issues related to water shortage and pollution.</p> <p><b><u>Essential questions:</u></b></p> <p>How can we support our community by reducing water waste and improving the quality of the drinking water?</p>	<p><b><u>Quarter 3: CREATE AND DESIGN STRATEGIES</u></b>  <u>Design and implement a water conservation solution.</u></p> <p><b>Objective:</b> Students will develop and test strategies for conserving water.</p> <p><b><u>Essential questions:</u></b></p> <p>How can we implement a water filtration system for the home and school drinking water?</p> <p>How do we create a prototype of a water treatment plant?</p> <p>How do we create a water reservoirs prototype?</p>	<p><b><u>Quarter 4:</u></b>  <b><u>EVALUATE AND SHARE:</u></b></p> <p><b>Objective:</b> Students will evaluate and share their outcomes with the community.</p> <p><b><u>EXPO:</u></b></p> <p>Be prepared to display your products.</p>

	<p>3. How would you determine if water shortage is a real problem?</p>			
<p><b>Guidelines</b></p>	<p>Students will investigate sources of fresh water available for consumption.</p> <p>1. The availability of fresh water on Earth and the methods that can be used to purify and conserve it.</p> <p>a) Where does the water originate and how is it managed along the way?</p> <p>b) Where do you think the water treatment plants are located?</p> <p>2. Understand the need for water conservation due to the limited fresh water supply.</p> <p>a) Why is it important to treat the water before sending it to home?</p> <p>b) How is the water treated after it leaves the school as wastewater?</p>	<p>Students will develop conclusions on water conservation issues.</p> <p>1. Research causes of water shortage and pollution.</p> <p>2. Generate and test solutions related to water problems.</p> <p>3. Propose some strategies to reduce water usage (Water Use Worksheet)</p>	<p>Students will identify and design strategies for conserving water.</p> <p>1. What water conservation techniques do countries use?</p> <p>2. How might the dams be changing the natural environment in this area?</p> <p>3. What conservation techniques can be used to help the natural ecosystem survive population increases?</p> <p>4. Compare the benefits and drawbacks of using different water management techniques.</p>	

<p>ELA</p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>
<p>READING</p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>
<p>MATH</p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>
<p>SCIENCE</p>	<p>Activities in the classroom:</p> <p>Students Will créate H2O Diary. They Will answer the question and support with research.</p> <p>Students Will sign up for Dream in green challenge, Farichild challenges.</p> <p>Field Trips...</p> <p>Products:</p> <p>H2O diary, presentation, picture collage on wáter problems, Short movie clip on wáter problems. Online</p>	<p><u>Activities in the classroom:</u></p> <p>Students will collaborate and present their findings.</p> <p>Products:</p> <p>Research paper, Presentation, Postings, Posters, Sketch of their designs, Songs etc</p>	<p><u>Activities in the classroom:</u></p> <p>Students Will work collaboratively and build their machines.</p> <p><u>Products:</u></p> <ul style="list-style-type: none"> <li>• Water filters</li> </ul>  <p>This shows the value of KEEPING trees, and plants living on our soil! As soon as we rip out all of the resources...we pollute our ground water...which becomes harder and harder to purify for us to then drink!!</p> <ul style="list-style-type: none"> <li>• Models</li> </ul>  <ul style="list-style-type: none"> <li>• Presentations</li> </ul>	<p><u>Activities in the classroom:</u></p> <p>MCCS SCIENCE FAIR</p> <p><u>Products:</u></p>

	<p>blog on wáter problems.</p> <p>Products:</p>		<ul style="list-style-type: none"> <li>• Posterboards</li> </ul> 	
TECHNOLOGY	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>
SOCIAL STUDIES/ ELECTIVES	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>
BILINGUAL	<p><u>Activities in the classroom:</u></p> <p>Reading articles related to the topics.</p> <p><u>Products:</u></p> <p>-Poems to raise awareness about the need to conserve water.</p> <p>-Digital Spanish Newspaper, to inform all the activities related with the STEAM Project (Once a Month).</p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>	<p><u>Activities in the classroom:</u></p> <p><u>Products:</u></p>

PHYSICAL EDUCATION	<b><u>Activities in the classroom:</u></b>  <b><u>Products:</u></b>	<b><u>Activities in the classroom:</u></b>  <b><u>Products:</u></b>	<b><u>Activities in the classroom:</u></b>  <b><u>Products:</u></b>	<b><u>Activities in the classroom:</u></b>  <b><u>Products:</u></b>

**Note: By Department, teachers should be able to complete this template with the “Activities” and the “Products” that they will implement in their classrooms. They should discuss the topics assigned by quarters.**

**Resources:**

[https://www.pbslearningmedia.org/resource/ess05.sci.ess.watcyc.lp\\_waterconservation/water-conservation/#.XVBBrvJKjZZ](https://www.pbslearningmedia.org/resource/ess05.sci.ess.watcyc.lp_waterconservation/water-conservation/#.XVBBrvJKjZZ)

<https://www.plt.org/stem-strategies/every-drop-counts/>

[https://www.thirteen.org/h2o/educators\\_lesson4.html](https://www.thirteen.org/h2o/educators_lesson4.html)

<https://www.climaterealityproject.org/blog/three-american-cities-could-be-next-cape-town>