

LESSON TITLE	San Clemente Dam Removal Webquest		
SUBJECT (S):	Biology, Earth Science, Environmental Science		
GRADE LEVEL:	6-12	AUTHOR:	Rebecca L. McKinney, MS
TYPE OF LESSON (activity, lab, project...)	Activity	DAY(S):	4 to 5

OBJECTIVE

Students will investigate the San Clemente Dam Removal and Carmel River Reroute Project in order to design and create a poster that either SUPPORTS or OPPOSES the project.

NGSS/CC STANDARDS **ASSESSMENT(S) & GRADING/RUBRIC**

<p>NGSS Science and Engineering: 4, 5, 6, 7, 8 Crosscutting Concepts: 2, 3, 6, 7 Core Ideas: ESS3, LS2, LS4, ETS1</p> <p>PERFORMANCE EXPECTATIONS Earth and Space Science: HS-ESS3-4, MS-ESS3-2, MS-ESS3-4 Life Science: HS-LS2-6, HS-LS2-7, HS-LS4-5, MS-LS2-1, MS-LS2-5 Engineering Design: HS-ETS1-3, MS-ETS1-2</p> <p>CC MATH HS - MP.2, MP.4, HSN-Q.A.2, HSA-SSE.A.1, HSS-IC.B.6; MS – MP.2, 7.RP.A.2, MP.4, 6.SP.B.4</p> <p>CC ELA/LITERACY HS - RST.11-12.7, RST.11-12.8, RST.11-12.9, WHST.9-12.1, WHST.9-12.7, WHST.9-12.9, SL.11-12.4; MS – WHST.6-8.7, RST.6-8.7, WHST.6-8.9, SL.8.5, RST.6-8.4, SL.8.4</p>	<p>Rubric provided</p> <p>Mastery considered at >70%</p>
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SUBJECT AREA(S):

This activity could easily fit the following courses as follows:

LIFE SCIENCE: ecosystems*

EARTH and ENVIRONMENTAL: ecosystems*, natural resources, human impacts

**Can be used before, during or after the studies on ecosystems*

TEXTS/MATERIALS/TECHNOLOGY/AUDIO-VIDEO/OTHER RESOURCES:

Poster boards or butcher paper, computers, internet, colors (markers, colored pencils, etc.)

INSTRUCTIONAL STRATEGIES/PROCEDURES/GROUPING:

DAYS 1-2: Students will need to form teams of 2 to 4 students. Send them to this website: <http://watereducationtoday.com/the-assignment/>. They will be researching the San Clemente Dam in order to design a poster that SUPPORTS or OPPOSES this project. Most teams will need two days to do their research and answer all of the questions.

DAY 3: Students should use this day to assemble their poster. If needed, an additional class day can be provided.

DAY 4: The day that the posters are due, it is suggested that a gallery walk be performed so that students can *self* and *peer* grade the work using the provided rubric. Depending on the amount of posters, this could take up to 30 minutes. The remainder of the class day can be used to then debate if the San Clemente Dam should have been removed, or this short video can be shown to summarize the overall project:

<https://www.youtube.com/watch?v=CqunxDpkQi4>

In addition, a quick writing assignment could be given with the following prompt: How does the San Clemente Dam removal and Carmel River reroute affect you and your family?

SAFETY/SECURITY ISSUES:

N/A

REFERENCES

<http://www.nextgenscience.org/next-generation-science-standards>

<http://www.cde.ca.gov/re/cc/>

<http://www.sanclementedamremoval.org/>

<http://www.amwater.com/caaw/customer-service/rates-information/monterey-san-clemente-dam-removal-project.html>

<http://www.ksbw.com/news/central-california/monterey/steelhead-trout-without-water-in-dry-carmel-river/23932236>

<http://www.carmelriversteelheadassociation.org/FishCounts/sanclemente.html>

<http://oceanservice.noaa.gov/facts/fish-ladder.html>

NOTES/REFLECTIONS/EXTENSIONS:

For those classes that would like to explore this topic in more depth, the following National Geographic video can be shown: https://www.youtube.com/watch?v=6LKw9R_rXjI This could be followed up with discussion about comparisons between the dam shown in the video and the San Clemente Dam.

Students could also write a “letter to the editor” style paper about their opinion of the San Clemente Dam removal project. You could even have the students submit their letter to the paper.



CALIFORNIA
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SAN CLEMENTE DAM REMOVAL WEBQUEST - GRADING RUBRIC

CRITERIA		1	2	3	4
PAPERWORK	Introduction Content	No analysis of topic No explanations No data/graphs	Minimal analysis Poor explanations Minimal data/graphs	Good analysis Adequate explanations Some data/graphs	Excellent analysis Excellent explanations Excellent data/graphs
	History of Dam Content	No analysis of topic No explanations No data/graphs	Minimal analysis Poor explanations Minimal data/graphs	Good analysis Adequate explanations Some data/graphs	Excellent analysis Excellent explanations Excellent data/graphs
	Dam Removal Content	No analysis of topic No explanations No data/graphs	Minimal analysis Poor explanations Minimal data/graphs	Good analysis Adequate explanations Some data/graphs	Excellent analysis Excellent explanations Excellent data/graphs
	Environment Content	No analysis of topic No explanations No data/graphs	Minimal analysis Poor explanations Minimal data/graphs	Good analysis Adequate explanations Some data/graphs	Excellent analysis Excellent explanations Excellent data/graphs
	Conclusions Content	No analysis of topic No explanations No data/graphs	Minimal analysis Poor explanations Minimal data/graphs	Good analysis Adequate explanations Some data/graphs	Excellent analysis Excellent explanations Excellent data/graphs
POSTER	Position (PRO or CON)	Not stated Mostly informational poster	Stated Somewhat supported Somewhat contradicts	Clearly stated Mostly supported Does not contradict	Clearly stated Well supported Does not contradict
	Grammar and Literacy	Multiple errors in spelling/grammar	Some errors in spelling/grammar	Minimal errors in spelling/grammar	No spelling/grammar errors
	Organization	Cluttered Hard to follow No organization	Hard to follow Somewhat organized	Some evidence of refinement Mostly polished	Easy to follow Very polished
	Creativity	No use of color or images Boring and bland Does not catch attention Sloppy	Minimal color Some images, diagrams Somewhat engaging Somewhat sloppy	Good use of color Some images, diagrams Engaging but does not stimulate audience Neat	Excellent use of color Excellent images, diagrams Very engaging/motivating Very Neat Effort is obvious