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| PROJECT OVERVIEW page 1 | | | | | | | | | | | |
| **Name of Project:** | | Water, Water, Everywhere? | | | | | **Duration:** | | | September | |
| **Subject/Course:** | | Science~ Engineering | | **Teacher(s): Vickie Weiss** | | | **Grade Level:** | | | 4th-5th | |
| **Other Subject Areas to Be Included, if any:** | | Reading, Writing, Social Studies | | | | | | | | | |
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| **Project Idea**  **Summary of the issue, challenge, investigation, scenario, or problem:** | | This PBL unit will encompass many different core curriculum standards. As part of this defined. stem project, narrative and informational reading, persuasive writing, and a field trip to the water treatment plant will be included. In addition to learning about for places in the world without clean water, students will also focus on ways to protect our water resources in our community. | | | | | | | | | |
| **Driving Question** | | How does access and quality of water affect human lives? What are global drinking water concerns? What are water concerns in our community? | | | | | | | | | |
| **CCSS to be taught and assessed:** | | * (CCSS.ELA-Literacy.CCRA.W.2 ) Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content. * (CCSS.ELA-Literacy.CCRA.W.4 ) Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. * (CCSS.ELA-Literacy.CCRA.W.5 ) Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. * (CCSS.ELA-Literacy.CCRA.W.7 ) Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation. * (CCSS.ELA-Literacy.CCRA.W.8 ) Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. * (CCSS.ELA-Literacy.CCRA.W.9 ) Draw evidence from literary or informational texts to support analysis, reflection, and research. * (CCSS.ELA-Literacy.CCRA.W.10 ) Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences. | | | | | | | | | |
| **Additional Standards to be taught and assessed:** | | * (3-5-ETS1-1. ) Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. * (5-PS1-4. ) Conduct an investigation to determine whether the mixing of two or more substances results in new substances. * (5-PS1.CC.1.1. ) Cause and effect relationships are routinely identified, tested, and used to explain change. (5-PS1-4) * (S.IA.05.13. ) Communicate and defend findings of observations and investigations using evidence. * (S.IA.05.14. ) Draw conclusions from sets of data from multiple trials of a scientific investigation. * (8.1.2. ) Society often turns to science and technology to solve problems. | | | | | | | | | |
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| **21st Century Competencies to be taught and assessed:** | | Collaboration | | |  | Creativity & Innovation | | | | |  |
| Communication and Oral Presentation | | |  | Other: | | | | |  |
| Critical Thinking-Students will be able to decide what resources are useful and considers alternatives and implications in solving the engineering problem | | | X |  | | | | |  |
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| **Major Products & Performances** | Group: | | In small groups, students will work to encourage the government of a small African country to build a water treatment facility. Students will select their preferred method of presentation...blueprint/diagram, informational brochure, oral presentation or sales pitch. | | | | | **Presentation Audience**  **Presentation Audience:**    Class  School | | | |
| X | Class | | |
|  | School | | |
|  | Community | | |
| Individual: | |  | | | | |  | Experts | | |
|  | Web | | |
|  | Other: | | |

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| PROJECT OVERVIEW page 2 | | | | | |
| **Entry Event** to  launch inquiry  and engage students: | To launch the novel, *A Long Walk to Water,* show my slides of women and children in Uganda walking to get their source of water. Ask students, how far they would be willing to walk to get water.  To launch the Civil Engineering Water Treatment unit, make one gallon of “foul” water. Have students observe and smell samples at each table. Talk about what they would do if this was the water they found in their village. | | | | |
| **Assessments** | **Formative Assessments**  (During Project) | Quizzes/Tests |  | Practice Presentations |  |
| Journal/Learning Log | X | Notes |  |
| Preliminary Plans/Outlines/Prototypes |  | Checklists |  |
| Rough Drafts | X | Concept Maps |  |
| Online Tests/Exams |  | Other: |  |
| **Summative Assessments**  (End of Project) | Written Product(s), with rubric:  Project based rubrics developed by defined. stem  blueprint/diagram,informational brochure, | X | Other Product(s) or Performance(s), with  rubric:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Oral Presentation, with rubric  Project based rubric developed by defined.stem…  demonstration, oral presentation | X | Peer Evaluation |  |
| Multiple Choice/Short Answer Test |  | Self-Evaluation  Students to write about their personal experience |  |
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| **Resources Needed** | **On-site people, facilities:** | |  | | | |
| **Equipment:** | | Speaker-Jackson Kaguri founder of Nyaka Schools who also developed water systems for two villages in Uganda | | | |
| **Materials:** | | Copies of chapter book, A Long Walk to Water | | | |
| **Community resources:** | | Flint Water Treatment Plant | | | |
| WaWat Tlin | | | | | | |
| **Reflection Methods** | **(Individual, Group, and/or Whole Class)** | Journal/Learning Log | | X | Focus Group |  |
| Whole-Class Discussion | | X | Fishbowl Discussion |  |
| Survey | |  | Other: |  |