Investigation Instructions

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| **5E Model of Instruction** | **Activity** | **Time** |
| Engage | • Show a water bottle filled with dirty (muddy) water and ask, “Would you drink this? What if it was all you had?”  • We have clean water readily available, how could we get water to these people on the other side of the world?  • Begin a discussion with the students and help them to understand the implications of their choices.  • Introduce the book, *A Long Walk to Water* (Park, 2010).  • View *Just Add Water* - promotional video for Water for South Sudan.  • Share the article, Global Concerns-Water ([www.concernusa.org)](http://www.concernusa.org)). | 1 class period |
| Explore | • Research other possible solutions for obtaining clean water (Figure 3).  • Students incorporate the [*Claim, Evidence, Reason*](http://www.paesta.psu.edu/sites/default/files/scaffolding_claims_evidence_and_reasoning.pdf)model for supporting their opinions.  • Students present their findings to the class following guidelines (Figure 4).  • Hands-on activities at various levels of understanding and independence (Figure 5).  1. Design, build, and test a model of the Warka water tower.  2. Design, build and test a water filter.  3. Build and test a scripted model of a water well.  4. Build and test a model of a desalination plant.  • Draw and label a diagram of the LifeStraw, Warka water tower, Janicki Omniprocessor, or well. | 5-6 class periods |
| Explain | • Students discuss including what it is, how it works, pros, and cons each of the possible solutions.  • More resources are added, including books about the water crisis and additional websites.  • Teacher leads a brief overview discussion of each of the possible solutions. | 1-3 class periods |
| Elaborate | • See cross disciplinary connection activities listed in Figure 6. | Multiple class periods |
| Evaluate | • Students design and present projects expressing their supported opinion for the best solution to the water crisis.  • Students incorporate the [Claim, Evidence, Reason](http://www.paesta.psu.edu/sites/default/files/scaffolding_claims_evidence_and_reasoning.pdf) model for supporting their opinions (See Figure 4 for Evaluation Rubric). | 3-4 class periods |