

Teacher Work	Student Work	Observer Work	Notes
Teachers will ask students to review notebook and remember their water treatment design and why they designed it the way they did.	Review notebook.		
<p>Posing the Task: Students need to design and test a water treatment solution to rid contaminated water of particulates and nitrates.</p> <p>Teacher will use data charts from the day before to review the level of particulates and nitrates in each sample of contaminated water.</p>	Students ask clarifying question and answer teacher questions.		
Review the Constraints and Criteria of the task	Students ask clarifying question and answer teacher questions		
Students will take their individual 3 step plan to decontaminate the water and working with their group, decide on one plan to be their group plan.	Students discuss each individual plan with their group and decide as group what their design will be.	Note how students engage in discourse with each other. Are they sharing their rationales for their designs.	

<p>Distribute the contaminated water sample and the components of the water treatment kit. (charcoal, coffee filters, clarity scale and nitrate test strips, containers)</p>			
<p>Students will begin to implement their 3 step treatment plant.</p> <p>Teacher will remind the questioner to look for failure points.</p>	<p>Students set up and test their design</p>	<p>Do students set up their design according to their plan?</p> <p>What do students say and do while the treatment process is happening?</p> <p>Is there any indication that the students are surprised about the results?</p>	
<p>After the treatment is complete, the tester should repeat the nitrate and water clarity testing.</p>	<p>Students test clarity of water.</p>	<p>What do students say about the results?</p>	
<p>Prompt each group to put their group results and steps on the class chart.</p>	<p>Students note results on chart</p>		

<p>Debrief Discussion: After all the groups have finished and recorded their data, the teacher will lead a debrief discussion.</p> <p>Teacher will use the anchor charts to guide students to evaluate the various treatment plans and construct arguments to support their evaluation.</p>	<p>Student engage in evidence based argumentation to evaluate the various treatment systems.</p>	<p>Note how students use evidence from the test to evaluate the various designs.</p> <p>Do students notice or talk about different ways a design can be evaluated?</p> <p>Do students identify any failure point?</p>	
<p>Students reflect on the activity, the treatment plan, test results and the process. They will use the prompt: As you consider the treatment plan you just used, how can such a process help to find a solution to a real life problem? What are some of the successes and challenges of this activity?</p>	<p>Students write in their science notebooks.</p>	<p>If you can see what students are writing, note it.</p> <p>Are students focused on how the in class test was a model of a real life solutions?</p> <p>Do students discuss realistic challenges for a real life design?</p>	