Main Page Scenario

* Click on the Lead in Water Mission.
* Note that the only way to truly unlock all the prize will be to actually test someone’s water and fix a problem. The teacher will need to upload this data for the student.
* The participant is approached by a dolphin that is always in some water. When he talks he makes dolphin noises, but you can read the text. He tells them to come on a mission. He explains how lead gets into water. Connections between city lines and homes can be made of lead. Older homes and buildings can contain lead pipes. Fixtures can contain lead. He explains that if you pay attention in chemistry class, you can understand how to prevent lead from getting into water. You can test for lead in water and easily remove it, if necessary. You will need to know a little bit about chemistry to complete the mission.
* The dolphin points to a map of lead exposure in the US.
* On a screen they see Dr. Bellamy working in a city. The city water supply is connected to a river. The water is treated properly.
  + Add water treatment sections to remove organics, set the pH, add corrosion inhibitor. Don’t give specifics since they will need to figure this out.
* Dr. Bellamy states that the town needs his flavored water. Give it a French name.
* As soon as he starts to sell flavored water, the town’s water goes bad.
* He uses a SciFi tool that he developed to view the water system. Note that this technology only is available to Dr. B!
  + The coatings on the connection pipes and on the faucets react away.
  + The iron pipes and lead pipes then begin to react.
  + The water turns brown.
* Dr. Bellamy puts up billboards advertising his water.
* Dr. Bellamy gives public service information about the dangers of lead poisoning, especially in children.
* He explains that the big risk factors are the age of the home, and poverty. The main source of lead exposure is through old paint, but it can be in soil and water too. Lead is especially bad for children under the age of 6, since their bodies are developing rapidly. He explains that lead can be in rural areas too.
* The people stand in line to purchase it.
* Task One from Agent Dolph: Test the pH of the water in peoples’ houses. It will be acidic. This is bad.
* Send to training about acids and bases so that they can solve more problems and help agent Dolph in the future.
* Check that the water-treatment plant is adding CaO.
* Task Two: Test the alkalinity of the water. It will be ok since the water will contain carbonate, but the concentration of Ca2+ ions will be low. This is bad.
* Send to precipitation reaction training.
* Task Three: Check a section of pipe for corrosion. Lead and iron pipes will be pitted. The CaCO3 film will be gone. The Ca3(PO4)2 film will be gone.
* Send to REDOX Reaction Training. Includes information about why Cl- is bad and SO42- is good.
* Since the pH is low and the water does not contain Ca2+, you suspect that Dr. Bellamy did something to the towns.
* Task Four: Check surveillance cameras and see Dr. B digging tunnels to switch the water supply to the river.
* Task Five: Reconnect the pipe.
* Retest the water. It will still be high in lead.
* Task Six: Check the corrosion inhibitor based on knowledge about precipitation reactions. You will see Dr. B in disguise drive up in a truck delivering NaCl instead of Na3PO4 to the water treatment plant.
* Buy corrosion inhibitor. Test the water. Retest the pH and alkalinity. Your mission is done.

Add part about ion-exchange filters installed in schools.

Add tasks: Pb in food such as apple sauce and chocolate. Lead in pottery, toys, cosmetics. Maybe put two in each lead mission section. Dr. Goodfriend buys the house next door. He tears it down and builds a battery recycling center. He might sabotage their vacuum cleaner in the lead paint scenario.