Shad in the Classroom
Tank Troubleshooting Guide

1. The water is not being pumped up through the tube assembly.	• Is the pump submerged under water and plugged in? • Is the power strip turned on? • Is the pump securely fastened to the soft end of the tube assembly with a hose clamp? • Is the valve on the side of the tube assembly open?
2. Water is overflowing out of the upper reservoir	• Is the valve underneath the upper reservoir and plywood open?
3. Water is overflowing out of the lower reservoir	• Is the upper reservoir leaking into the bottom reservoir? (Water level in upper reservoir would also be low.) • Is the pump on?
4. The water coming out of the spout of the egg chamber is too fast. The eggs are floating to the top and pouring out of the spout.	• Dial back the pressure by adjusting the valve attached to the tube assembly at the side of the tank. This should decrease the amount of water that is coming out of the hard PVC end of the tube into the egg chamber.
5. The fry chamber is overflowing.	• The siphon is not working. Remove it and place it underwater to remove all the air inside of it. While covering one end of the tube, insert the mesh-covered end into the fry chamber and attach the binder clip to hold it in place. The water level should drop relatively quickly to the same level as the water in the upper reservoir. • Alternatively, place the fry chamber on a small stack of brick to raise it above the surface of the water. This should allow the fry chamber to remain in place with more stability. Add bricks before the arrival of the eggs and watch water chemistry closely for any changes.
6. The water coming out of the spout of the egg chamber is not landing in the fry chamber.	• Adjust the placement of the fry chamber by moving the rubber bands around and shifting the container. It will require a little finesse to get the rubber bands to hold the fry chamber just where you want it. Experiment with this before you get your shad eggs.

7. Fry are missing and it looks like they are in the bottom tank!	• Adjust the stand pipe cover – make sure that it is not lifting off the bottom of the upper reservoir. • As a back-up, cover the top of the small, attached stand pipe with a piece of a filter bag using rubber bands. • This could also be because the pump shut off and sucked water back down into the lower reservoir. Make sure to remove the clear PVC piece from the egg chamber before shutting the pump off, and make adjustments to flow as slowly and smoothly as possible. • Retrieve as many eggs/fry as possible and return to their proper location.
8. After testing our nitrates/ammonia levels, they are too high.	• Read the instructions on the ChlorAm-X bottle and add the appropriate amount to the lower reservoir. (NOTE: 1 ppm = 1 mg/L) • High ammonia levels are most often a result of dead eggs decaying in the system. Make sure to remove them 1-2 times daily and record the volume on your worksheet.
9. After testing our temperature, the water in the upper reservoir is too hot.	• Immediately put several frozen 2 liter soda bottles in the lower reservoir. • Check the temperature again in a few hours and adjust the frozen bottles, if necessary. • It's a good idea to keep a few frozen bottles on hand just in case. • You may need to put frozen bottles in tank at the end of the school day and change them out first thing in the morning to keep temperatures more even. • Experiment to find out how many frozen bottles you will need to keep the water at the right temperature. You should also pay attention to changes overnight if the school turns off the heat or AC.