Dear Student of Ypsilanti Community High School,

The Huron River Watershed Council (HRWC) in conjunction with the city of Ypsilanti is asking you to use the engineering cycle and act as an environmental engineer to clean up a the turbidity of the Huron river (Frog Island/Riverside Park). Turbidity is a pollutant to the animals that live in the water.

Whichever group of engineers can design the best water filter to decrease the turbidity of the water in the Huron river will receive a lot of money in the form of a special treat and a good grade on this project. Your task is to work with your fellow environmental engineers to design a small scale water filter that can be used by the city and the HRWC to create a larger filtering device that will decrease the turbidity of the Huron River. You will be expected to create at least one iteration of your model in order to produce the best filter possible.

Along the way, local experts from the HRWC will be working with us to help us learn more about what other types of issues the river has. Another major issue is the litter and shoreline trash that is negatively impacting the ecosystem at Frog Island and Riverside park. For this project, the HRWC has determined that your small scale filter will be constructed using a pop bottle as its base. In order to save money the following materials are available to you and your team to construct your filter: cheesecloth, window screen, gravel, sand, coffee filters, activated charcoal, cotton balls, and cardboard. Your engineering team has a total budget of $50 to spend in creating your filter, including all modifications. Each of the materials available to you has a cost associated with it; observe the supply list in the project journal to determine these costs. You will have the opportunity to investigate the materials to learn more about them before constructing your filter. All good engineers construct multiple “versions” of their product, so you must spend your money appropriately.

There are a number of items that must be submitted at the end of the project. These include the following: your individual project journal, your engineering team’s final model of the filter, and a group poster that summarizes the project. In addition, the group poster will be presented to the class. The final filter model will be submitted for testing the week of October 10th, 2016. Group presentations are scheduled for the week of October 24th, 2016.

Sincerely,
Huron River Watershed Council, Jason Frenzel, Stewardship Coordinator,
Mrs. Fontaine, Mrs. Hershberger and Ms. Saunders

Bio: Jason facilitates current and potential watershed stewards. Previously, he worked with the City of Ann Arbor’s Natural Area Preservation program for 10 years as its Volunteer and Outreach Coordinator. Jason holds a Bachelor of Science degree from Michigan State University in “facilitating tree hugging.” He joined HRWC in 2011 and lives in the Traver Creekshed.