We included the following in an online course evaluation:

- Thinking about the science Development and Implementation of a Water Quality Testing Module Across the Curriculum: and social justice, the module explores water as a limited resource, disease communicability, and the role of implementation to monitor human influences on public water systems. The module uses a simple protocol to monitor human influences on public water systems. The module uses a simple chromogenic assay ($\sim$1/student) to aid students in the understanding of a central biological concept: both genetics and environment determine metabolic phenotype. Additionally, lab share the basics of sterile technique, manipulation of variables, and the value of reference standards. Through the lens of sustainability and social justice, the module explores water as a limited resource, disease communicability, and the role of infrastructure design in mitigating downstream effects of climate change. We have adapted this module for different courses by incorporating additional selective assays, confirmatory biochemical reactions, and broadened the context by exploring point-of-use filtration techniques.

**Methods**

The Water Quality module is designed to teach the epistemology of science using bacterial coliform detection assay and highlights civic relevance by explaining how government agencies and citizen scientists implement this protocol to monitor human influences on public water systems. The module uses a simple chromogenic assay ($\sim$1/student) to aid students in the understanding of a central biological concept: both genetics and environment determine metabolic phenotype. Additionally, lab share the basics of sterile technique, manipulation of variables, and the value of reference standards. Through the lens of sustainability and social justice, the module explores water as a limited resource, disease communicability, and the role of infrastructure design in mitigating downstream effects of climate change. We have adapted this module for different courses by incorporating additional selective assays, confirmatory biochemical reactions, and broadened the context by exploring point-of-use filtration techniques.

**Collaboration with Faculty**

"Through this, I aimed to trace patterns of pollution and other environmental factors including water contamination - to discriminatory housing, land-use, and land-access patterns globally and locally. Additionally, I aimed to have the students anticipate how a data-driven experiment, see the results, and from this have "hard data" to put a face on the severity of this issue when met with patterns of social and spatial injustice."  

This is valuable far beyond the actual experimental design (and specific 'water quality' inquiry) for example, students learn the basics of sterile technique and lab etiquette... 'non-art' confidence, physical lab vocabulary, and comfort with inquiry of 'invisible things' like microbes in your water. By doing, these self-defined 'artists' are experiencing they are also implicitly scientists.

![Image](image-url)

**Sample Student Quote From Course Evaluation**

"I learned how to integrate science into design, and how seamlessly they work hand in hand. I also saw through experience that science does not have to be reserved for those heavily dedicated to the field; it is a subject that is both approachable and necessary for everyone to be able to understand."

**Conclusions**

The Water Quality module is a cost-effective and scalable approach to bringing lab learning to a wide range of undergraduates. Because The New School does not require math or science for matriculation, for some students this exposure provides them with some familiarity and context of scientific experimentation through a relatively simple but important assay. The Water Quality module is a cost-effective and scalable approach to bringing lab learning to a wide range of undergraduates. Because The New School does not require math or science for matriculation, for some students this exposure provides them with some familiarity and context of scientific experimentation through a relatively simple but important assay.

**Acknowledgments**


**Contact**

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