**Objective**

Encourage an interest in STEM in K-12 students delivering a working prototype of an affordable, simple device to collect environmental data.

**Background**Current educational curriculum in the US lacks a focus on Science, Technology, Engineering, and Mathematics (commonly referred to as STEM). According to the United States department of education, only %16 of American high school seniors are proficient in mathematics and interested in a STEM career[[1]](#footnote-1). With a growing demand for STEM related jobs and declining interest in such fields, it is important to get high school graduates into a STEM focused degree program in college. Doing so, however, requires an early start in younger students. In studies referenced by the Business Education Compact, a non-profit focused on bringing STEM education to younger and underserved classrooms, negative interest begins in elementary classrooms where %33 of fourth grade students’ attitudes are already hostile towards science and math; that number goes to %50 by 8th grade[[2]](#footnote-2).

Unfortunately, many student oriented projects currently available are not as practical or affordable as would be desired to get students encouraged. Many projects that students get their hands on involve simple data analysis which is not necessarily the best way to get young energetic kids involved the sciences. Other types of projects are available which are fairly cheap to start out, but require the use of chemicals which are usually required to be kept in the classroom and are harder to collect actual data from. Lastly, there are data acquisition modules which are great for collecting actual data but generally require more advanced setup (such as programming) and usually cost more than $100 per unit. An example of one such device is the LabJack data acquisition device.

Another issue facing the proliferation of STEM subjects in schools is teacher education and resources. Unfortunately many teachers do not have the time or resources to put together detailed lesson plans or learn complicated material with the small amount of time available. The department of education states that one issue with STEM proliferation is limited teacher resources and education.

In order to drive interest in STEM, students need access to a means of not only collecting data but analyzing it as well. Collection and analysis needs to be both educational and interesting, while remaining simple and easy to use. This simplicity needs to extend to the teachers as well, with example plans and experiments available to ensure a smooth teaching and learning experience.

1. www.ed.gov/stem [↑](#footnote-ref-1)
2. http://becpdx.org/nem/stemconnect.aspx [↑](#footnote-ref-2)