Respect & the Environment

EXPLORING APPROACHES TO GREEN AUTOMATION PROJECTS

RESPECT FOR OUR ENVIRONMENT needs to be ingrained into our mindset as a filter through which our thinking, creativity and daily choices translate into action. Many of the solutions to the planet's environmental woes will almost certainly include the design and application of automated systems.

In my grade 10 computer science class, students applied their coding theory to the design of products that were innovative, automated and custom-engineered. In previous years, they worked on an automated hydroponics system set up in the classroom; by August, the cucumber vines climbed up the windows and reached into the ceiling panels. Last year, several teams of computer science students worked on new hydroponic variations. The goal was to expand the systems, eventually reaching a point where some of the salads served in the dining hall would come from our own automated gardens. A larger system for growing lettuce and spinach is now housed in our greenhouse and uses rainwater that is collected, filtered and stored on site.

Students also developed a small, in-home aeroponics system that automatically supplies vegetable plants nourishment, oxygenated mist on the roots, and LED lighting for accelerated growth. The rationale was to see if it was feasible to grow small gardens at home during the winter, thus reducing reliance on imports that often carry a heavy CO_2 footprint.

Newcomers to this year's computer science class are considering ways in which these systems can be enhanced with more sophisticated controls. The passion, motivation and determination demonstrated on these green automation projects reflect our students' deep respect for the environment and their desire to contribute to its betterment.

CHRIS AUCLAIR, Teacher with Specialization in Computer Programming, Film & AP Psychology