

Darrell Turnbull & the Advanced Technology 120/Environmental Science class at Carleton North High School- Outstanding Energy Efficiency Achievement- Community Award

The students in the Advanced Technology 120/ Environmental Science class at Carleton North High School in Bristol have taken energy efficiency into their own hands. Led by teacher Darrell Turnbull, students spend the semester searching out opportunities for reducing energy consumption at their school and coming up with innovative and effective solutions to save energy and encourage energy efficient behaviours amongst their peers.



Front row: (L-R) Justice Ogden, Jordan Wade, Harris Bakker, Leigh Hunter, Cullan Harquail, Dextor Corey,

Back row: (L-R) Mr. Turnbull (teacher), Colby Prosser, Sarah Lord, Marcus Fenske, Keeghan Forsythe, Jacob Williams.

Missing: **Marty Holmes, Darrold Comeau**

The class' unique curriculum was developed by science teacher Darrell Turnbull, in partnership with Brian McCain of the Gaia Project, to create a project-based learning class that focuses on addressing environmental issues through technology. The rigorous work by Darrell and his class has influenced the expansion of the course throughout other schools in the province.

The Advanced Technology class enables students to become not only leaders in meticulous data collection and auditing procedures, but also advocates for energy efficiency and resource conservation in their schools, homes and communities.

“We start by asking, ‘have you seen a power bill in your home?’ and then look at the power bill of the school and

how it is generated,” says Darrell. The connections come rapidly to the students; “they begin to realize, quite quickly, that the cost of an appliance doesn’t end after you pay for it at the store, which then leads to the question of—‘how can you make its use most effective?’”

The class reviews fundamental concepts in ecology and surveys the history of the human pursuit of energy. “We then meet in an open forum to discuss ‘how to meet our energy needs at Carleton North’,” says Darrell. Students choose an area of the school to audit, expanding on the work done by the previous year’s class. This year teams of four students examined plug-in loads, heating, lighting and water consumption.

Students use the results of their studies to propose easy-to-implement energy savings solutions with calculated payback periods. The energy efficiency recommendations made by students this year included: lowering power consumption settings on classroom SMARTboard projectors in order to reduce energy costs associated with the projectors by 15%;



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closing drapes in classrooms at the end of the day to reduce heat loss, and installing waterless urinals to reduce water consumption by over 60%.

Over the course of the semester, the students essentially became energy advisors for their school. They actively gathered data, reassessed their methodologies and researched potential energy saving solutions. Rather than write an exam, students present their findings and make proposals to district and provincial school officials as well as local politicians and energy industry representatives.

The Advanced Technology 120 class is prepping cohorts of students to understand energy efficiency and the importance of making data-informed energy decisions; skills and decision making processes that will resonate throughout the rest of their lives.



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