

EDUCATION

# Tie-dye, blowing leaves and dog brushes

Students tackle gamut of topics

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THE PUEBLO CHIEFTAIN

A project three years in the making at a cost of \$1,500, the third part of Central High School senior Max Markuson DiPrince's "Windmill Efficiency" was designed to test "the polarization of magnetorestrictive solenoids to optimize oscillatory energy production on micro-scale natural leaf designs."

Or, for those without a college-level understanding of the principles of energy, a scholarly look into how a leaf blowing in the wind can generate energy with help from electric current-carrying magnets.

Markuson DiPrince's prize-winning presentation was anchored by self-designed plastic replicas of a tree branch and a leaf, attached to a voltage meter.

When given a simple jiggle, the leaf did its part to produce a tangible result on the meter.

Accented by incredibly detailed schematics, graphs, charts and results, Markuson DiPrince's submission was one of a host immaculately researched and assembled STEM-based assignments on display Friday at Central High School.

For the 16th annual Pueblo City Schools (D6o) District and



Max Markuson DiPrince, a Central High School senior, explains his innovative 'Windmill Efficiency' project during Friday's 16th annual Pueblo City Schools (D6o) District and Regional Science and Engineering Fair.

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JOHN JAQUES

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Regional Science and Engineering Fair, presented by Black Hills Energy and Pueblo Bechtel Team, more than 140 students in grades 3-12, both as individuals and teams, showcased the impressive fruits of their intellectual labors before fellow students, parents and judges.

In categories ranging from energy to medicine to engineering, the industriously curious youngsters used science and technology to answer pressing questions and resolve the most interesting of mysteries.

For example, if you're planning to tie-dye a piece

of clothing for this summer's Dead & Company tour, linen is your best choice for the brightest and boldest result.

If you're wondering about the relationship between social media and grades, here's the not-so-surprising news: "The more time that was spent on social media and social media apps, the lower the students grades were."

There was even a research-backed recipe for a healthier french fry, a plan for an inexpensive do-it-yourself dog brush — the key is attaching tiny brushes to the palm and ends of a glove — and "Super Manure," which touts the energy-producing carbon dioxide found in animal waste.

One more thing: if you'd

like to fully experience the wonders of self-folding origami, you're going to need a lamp that gives off plenty of hot watts.

"This year, we were excited to see a lot more participation in the area of engineering in the elementary area," said Morganlee Kempf, D6o's STEM/science specialist.

"From an innovative and creative level, the judges were very impressed with this year's entries, especially at the elementary school level. The judges thought those students are demonstrating knowledge well above their grade level."

Markuson DiPrince said he's been tweaking his wind-related project since his sophomore year, realizing that leaves, not

windmills, are the future of clean energy.

"This is revolutionary," Markuson DiPrince said of his idea. "I've practiced with other kinds of windmills, the ones that spin especially, but I decided to take it a step further and go somewhere no one has ever gone before."

"This is something that looks like it belongs in nature and it will revolutionize the industry. You will be seeing it later on because I plan to patent it."

From the local entries, a state judge determined that 23 will move on to the Colorado State Science and Engineering Fair, to be held next month in Fort Collins.

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