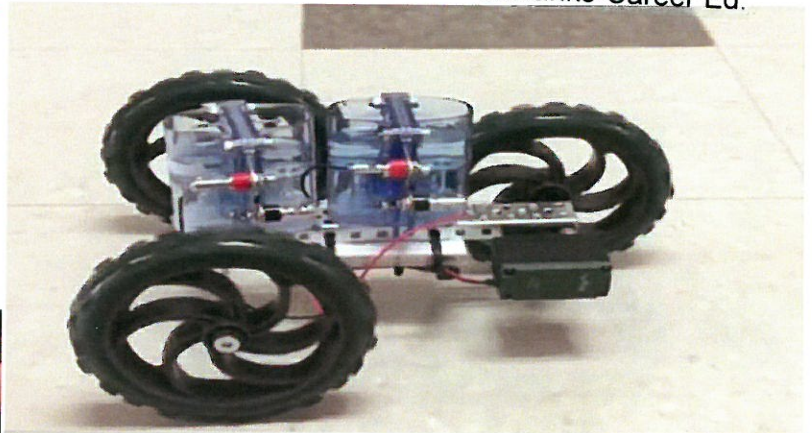


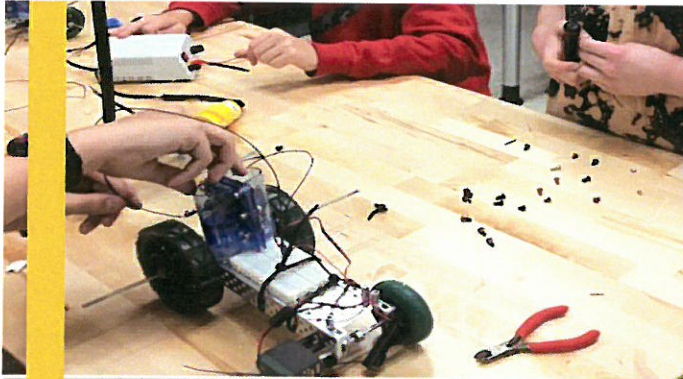
Arkansas STEM CTE: Renewable Energy

September 2018



The pictured alternative energy hands-on project is one that allows the students to learn in depth about hydrogen fuel cells as an alternative energy source. In this project they also work with solar power as an alternative energy source. Students ultimately utilize these energy sources to help them to fuel a small electric car they build by hand.

Russellville High School Pre-Engineering Classes



Examples of Alternative energy pre-engineering frameworks for Arkansas:

- Distinguish between nonrenewable, renewable, and inexhaustible energy sources and describe the process related in harnessing, storing, transporting, and converting energy.
- Identify the means of energy loss and calculate the efficiency of a system that converts electrical energy into mechanical energy.
- Design a system to convert solar power to mechanical power using photovoltaic and fuel cells.
- Design, construct, and test insulation materials for reducing thermal energy transfer.
- Analyze system energy requirements to select the best energy sources for a system.
- Predict and manipulate the amount of heat energy transferred in a system resulting from the material properties and system design.

Alternative Energy:

Education Opportunities Currently Available for Arkansas Students in Grades 7-12

Certain pre-engineering curriculum offered by schools in our state are an excellent resource for students to become educated in alternative energy sources. This exposure to alternative energy sources education can begin as early as 7th grade for some curriculum. At the 7th and 8th grade levels, pre-engineering curriculum is being offered at 76 schools. At the 9th through 12th grade levels, pre-engineering is being offered at 68 schools. The number of schools choosing to include alternative energy in their pre-engineering curriculum course work at the high school level is currently 42 high schools in the state. Without these courses, students may never be exposed to alternative energy options, or know why alternative energy is so important for our state's future energy needs.

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