



Minnesota Association of Secondary School Principals



Star of Innovation Award Application Form

School Name Fairmont Jr./Sr. High School Grade Levels 9-12

Name of School District Fairmont Area Schools

Name of Principal Chad Brusky

Application Submitted By Chad Brusky

School Street Address 900 Johnson St.

City, Zip Fairmont, 56031

Telephone Number 507-238-4411

MASSP Division Southwest

Name of Program H-VAC Progression on Site

Please answer the following questions on a separate sheet/s of paper.

- Description of the program.
- How has it impacted your school?
- What difficulties did you encounter in its implementation?
- What issue/s might another school encounter in replicating this program?
- Do you have any data to show the impact of this program? If so, please share it with us.

Applications must be submitted to MASSP offices by March 1.

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 MASSP • 2 Pine Tree Drive • Suite 380 • Arden Hills, MN 55112

Questions? Please contact:
 Bob Driver, Executive Director
 612-361-6159

Fairmont Jr./Sr. High School HVAC Programing

Description:

In the Fall of 2022, CTE programming was able to move into the new CTE building at the Fairmont Jr./ Sr. High School site. One of the new pathways developed as part of this space is an on-site HVAC pathway for students. The pathway consists of 5 different HVAC classes (Intro to HVAC, Foundation of HVAC, Principles of Heating, Principles of Cooling and Advanced HVAC) focused on general skills needed to work as an installer, or to expedite acquisition of a Tech degree. These courses have been developed based on the needs expressed by Minnesota Tech school and local HVAC business owners. These partners have also been integral in identifying and acquiring equipment to best serve the needs of the students while keeping cost to a minimum.

Classes have been successful avenues for students to get hands-on experiences in a variety of skills across several trades. Electrical, pipe-fitting, metal fabrication, schematic reading and chemical safety are incorporated into the Intro and Foundational classes. Additionally, students are provided real-world experience in concepts learned in class such as, thermodynamics, phase change, chemical properties, Ohm's Law, Conservation of Energy and Work just to name a few.

Student reviews of the class have been very positive. Students report interest in continuing in the pathway after the Introduction and Foundations classes. Throughout the rest of this year, the principals of heating and cooling will be developed and ready for implementation in the 23-25 school year. We anticipate these classes will be full based on student interest surveys of students who have completed the prerequisite.

The principal's work in this process was to develop a vision for the space. To do this Tech Schools who offer HVAC from around the state were interviewed to find what common skills these schools are looking for. From that list, partnerships with local HVAC businesses and South Central College were developed to assess these skills and determine the appropriate equipment for the space. Lastly, the principal developed a pathway based on the scope and sequence of the skills needed to be successful as an installer or student in a post-secondary certification program.

How has it impacted your school?

While other schools may partner with local tech school to provide HVAC experience, at Fairmont we are able to provide this opportunity without the barriers that can present themselves when needing to partner. Transportation, scheduling and SPED services do not interfere in student's accessing this pathway.

The HVAC pathway has also expanded the offering we are able to provide our students as part of their education experience. The goal of all of our CTE courses is to provide students not planning to go to college a clear connection to local opportunities for a career. The nature of HVAC not only has opened doors to other trades such as electricians and plumbers who have some cross over skills with HVAC. Additionally, as with other CTE courses, the HVAC programs have served as a hook for some students who have traditionally struggled in school. This specific offering has provided students with

motivation to complete their high school education while providing a clear path to local employment after their K-12 education.

What difficulties did you encounter in its implementation?

There are very few schools who provide an HVAC pathway for students in grades 9-12. Therefore, there was heavy lifting on the front end by interviewing Tech schools throughout the state on what skills would make our students most competitive for the workforce and to accelerate pursuing a postsecondary degree in HVAC. Once those skills and knowledge base were determined, a scope and sequence was developed with the input from our local experts and advisors from South Central College's HVAC department tailored to the abilities of students in grades 9-12.

Curriculum was non-existent, so working with South Central, essential standards for HVAC were created and learning intentions were devised to reflect the developmental readiness of our learners. By using the Tech Schools course materials, the principal and instructor for the HVAC program were able to research different vendors and resources to find an appropriate fit for the program.

Equipment was another hurdle to overcome. At first a manufacturer proposed equipment which was out of budget and according to educators at South Central, would be more appropriate for students in their final year of HVAC certification. The faculty at South Central College provided great ideas to the principals on the importance of forming partnerships with local HVAC companies to acquire parts and equipment that better address the needs of the students for pennies on the dollar. As a result, multiple meets were set up with local HVAC businesses to inquire about equipment and parts. These meets were very fruitful as the vendors these businesses use provided full heating and cooling units to use in the lab. These business partners also help design projects for students and gave important input to the Amatrol simulators to purchase for the program.

What issue/s might another school encounter in replication this program?

Finding a qualified instructor for the program may be difficult. At Fairmont we had a Welding instructor who was willing to dive into the HVAC pathway and has taken the lead in the continual refinement of the program.

Designing projects and curriculum may be another difficulty as there are very few on-site HVAC programs nationally. Fairmont is committed to expanding this program to other schools and welcomes school visits and will share resources developed in order to help other schools implement or assess the viability of similar programs.

Equipment can be a challenge, but we have found our local businesses are eager to support our endeavor by working with vendors to get free units for the program. Most vendors jump at the chance to donate equipment and even HVAC specific tools. Building strong relationships with local companies must be utilized to make the outfitting of the HVAC lab affordable and appropriate for the local area.

Do you have any data to show the impact of this program? If so, please share it with us.