

| *“An ounce of prevention is worth a pound of cure.” – Benjamin Franklin*

Building a Stronger, Safer Community

A Report and a Memoir

Misty D Jones

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By Misty D. Jones

*“An ounce of prevention is worth a pound of cure.” --Benjamin Franklin
Simply stated: it's easier to stop something from happening in the first place than to repair the damage after it has happened.*

During the Fall semester 2018, Brenda Edwards and I facilitated a series of four OSHA 10-Hour General Industry safety classes at Unicoi County High School in Erwin, TN. Several organizations came together to schedule and to support making these classes successful. The following “report” is both objective and subjective. It is difficult to be completely objective when one believes in the importance of the work they are doing.

Organizations

The United Steelworkers (USW) Tony Mazzocchi Center offers OSHA Outreach training in both General Industry and Construction, 10-Hour and 30-Hour. The training provides a solid foundation of the OSHA safety regulations so that workers understand their rights and know the employers' responsibilities. The USW, along with many other labor unions, have fought and lobbied for the safety and health of workers for many years. This outreach training provides workers the knowledge to help protect themselves at work.

The USW-TMC utilizes worker-trainers to facilitate training classes. Each worker-trainer has a USW-represented job/trade from which they have real-world experience. Being a worker-trainer is a part-time job for most. I have been a worker-trainer for nearly twelve years; I am currently the lead [union] trainer at my facility. Brenda Edwards has been a worker-trainer for about eight years. We both received our OSHA Authorized Trainer status in June 2017.

Brenda and I are employed full-time at BWXT's Nuclear Fuel Services in Erwin, TN (County of Unicoi), a small town nestled in the foothills of the Appalachian Mountains. NFS is the largest employer in the county. Nuclear Fuel

Services is also the sole provider of nuclear fuel to the United States Navy. Although they did not officially participate in the Fall series of classes, much was provided from within the organization.

The hourly employees at NFS are collectively represented by the United Steelworkers Local 9-677. This local is actively involved in the community on several levels. Many of our members live in Erwin/Unicoi and have or are raising their children here. Our local sponsors Little League teams with many of our children playing and their parents coaching. We also give back through school supply donations, The D.E.S.K. Project and sponsorship of the Angel Tree at the Center on Aging and Health. In conjunction with NFS, USW Local 9-677 spearheads efforts for the Unicoi County United Way campaign.

Unicoi County, with a population of approximately 18,000, has one education system which has only one high school, Unicoi County High School. Enrollment in UCHS is approximately 1,000 students. Because they are a public school, the teachers, principals and directors must comply with standards set forth by the government. They welcomed us with enthusiasm and not a day went by that they did not thank us.

Background

After assisting another Local to facilitate OSHA training at the Union County Center for Technology and Education (CTE), I began having conversations with Kevin Lingerfelt, Director of the Unicoi County High School CTE. He involved the school's principal, Dr. Chris Bogart, and school system superintendent, Mr. John English. On my part, I began conversations with our USW Local President, Andrew Nelson, and the USW-TMC Program Coordinator, David Cassidy, as well as NFS management and persons in the Industrial Safety Department.

After much discussion, we settled on November as our target timeframe. The schedules of students had to be rearranged to accommodate attending the class and we had to switch up our class schedule a time or two to accommodate the school schedule. Because of the close-approaching dates and the amount of time it takes for the USW print shop to get us the class materials, I drove to USW Local 288 in Oak Ridge to pick up books they so graciously agreed to loan us.

Value

The word value has different meanings to different people, depending on their role or function. Merriam-Webster defines value to be “the monetary worth of something or the relative worth, utility or importance” of something. The OSHA 10-Hour General Industry safety course holds value on many different levels.

School administrators assess the value of this course monetarily and educationally. This course can cost a participant up to \$175 each depending on type of delivery, i.e. in a classroom or online, quality, etc. The USW Tony Mazzocchi Center is providing this community outreach training at no cost to the school system, the high school or the student. They provide any and all materials needed, the trainers and the official OSHA card that the students receive after course completion. The card alone costs \$8 each.

Administrators and counselors appreciate the training for what it is on the surface, an introduction to safety at the workplace, but the value is so much more. When assisting these students as they journey into post-secondary education or join the workforce, school staff must follow guidelines set forth by the state and/or federal government. In the State of Tennessee, former Governor Haslam and his Department of Education instituted the “Ready Graduate” Indicator. This indicator is used to assess the high school and the school system in their abilities to produce graduates who are ready to enter post-secondary education or the workforce and succeed in their chosen paths. The OSHA 10-Hour General Industry course is one of the listed courses that counts as an Industry Certification required for the Ready Graduate.

For the student, the value of this class is attained on multiple levels or stages of their lives. As mentioned previously, completion of this course and obtaining the certification assists them in becoming a Ready Graduate in the State of Tennessee (See Attachment A). The Industry Certification, as identified by the state (See Attachment B) also helps them obtain the “Work Ethic” endorsement for their high school diploma (See Attachment C). This endorsement gets their “foot in the door,” if you will, with certain businesses/employers and guarantees an interview with those employers. The course certification also carries over into college. If the student is required to

take a safety course in their field of study, they can pay a nominal fee and test out of that course versus spending the time and money for the entire semester's course.

For these young workers, the importance of this class will not come today or tomorrow; it may be ten years before they "get it." One day, they could be faced with a situation in the workplace that causes them concern for their safety or that of a co-worker. That moment is when the value of this training becomes apparent. They will think back to this class and say, "Maybe those two crazy old ladies knew what they were talking about after all." In that moment, I hope, and it is my sincerest intention, that they are empowered to stop and evaluate the situation for safety's sake.

I have told every class that I have facilitated, especially for high school students, that, for me, the value in this class is not how much it could have cost them monetarily, but that they understand this very basic statement: As a worker, you have the right to a safe and healthful work environment. As young workers ourselves many years ago, we did not have someone who reassured us of that. As a union member we say that we are our brothers' keeper. Unwritten in that statement is that we are also the keepers of their children as well. As a mother knowing one day my child will enter the workforce and knowing I would want someone to assure him, I am doing the same for someone else's child. Considering the report's opening quote of Benjamin Franklin, we can be the ounce of prevention for these students at the workplace now so that they, or anyone else, do not have to find the pound of cure after an incident has occurred. Just like many others, it could be too late.

High School Students

A collective body of high school students is a completely different animal. Not only are they a bit socially awkward or physically not fully developed, they also lack workplace skills and knowledge. This is said not to demean these students, but to give background into how classes were approached and how they flowed. Much of the curriculum developed by the USW-TMC targets folks who are already workers or have been workers. We, as trainers, needed to make sure they understood the material.

Brenda and I conducted a series of four classes, two classes during Week 1 and two classes during Week 2. Essentially, we had one class of students before lunch and a completely different class of students after lunch. Each class was nearly maxed out; OSHA specifies no more than forty (40) students per class. (*What in the world had we gotten ourselves into?!?*) Each class had a different “personality” and we, as trainers, had to adapt to each one.

After a couple of days, we noticed that the students lost focus at some point. It didn't matter if we were speaking from the front or they were working within the Small Group Activity method at their tables. Brenda and I brought in focal points, if you will, after noticing. Candy, suckers, cookies and doughnuts sure will keep a teenager focused when brought out at the right moment! (*On another note: we're pretty sure that teenagers eat pens and pencils as well, but that's a story for another time.*)

Delivering the Material

All the students who participated in the classes were taking a CTE class for the semester. Because of this, they had knowledge of what OSHA was and some of the safety standards; however, the knowledge was limited. Before being allowed to go onto the shop floor, the hands-on area of their classroom, each student must take a safety exam and pass it with no less than a perfect score. If they did not get 100% of the questions correct, they were required to study more and retake the exam until a perfect score was achieved.

With that being said, we took the approach that they did not have any workplace safety knowledge. From the first session, Intro to OSHA, to the last session, we made sure they understood the material by quizzing them as a class. Some students answered more quickly, but, eventually, they were all giving answers aloud. They all got it. As trainers, those are the moments that make the job worthwhile.

Every single day, after greeting them, I would begin the statement, “As workers, you have the right to...” and the class, in unison, would reply, “a safe and healthful work environment.” Then, I would say, “Because you have that right, your employer is responsible for...” and their response would be, “providing a safe and healthful work environment.” More detail was discussed that it was a safe and healthful work environment free from *known* hazards. Much discussion

was also held regarding their responsibility to follow the rules and regulations as well.

We, as trainers, expressed to them the importance of them having this training at such a young age and before most of them enter the workforce. We made it comparable to learning and beginning to drive. They are at higher risk and higher probability of being injured or killed on the job:

Researchers at the National Institute for Occupational Safety and Health (NIOSH), in a study published by the Center for Disease Control, stated, *“Through work experiences, youth learn responsibility, develop social skills, and gain independence; however, youth are at a high risk for work-related injuries due in part to unique physical and psychosocial characteristics.”**

That statement grabbed their attention. To further drive the point, we showed them the video, “First and Last Day,” a video about a young worker whose first day being on the job – for only an hour – was his last.

Throughout the week and with each different session, Brenda and I tried to keep the students engaged through personal stories and show-and-tell. Combined, Brenda and I have nearly sixty years of combined work experience as well as nearly twenty years combined worker-trainer experience. We have experienced and heard many stories regarding workplace safety or the lack thereof. Brenda made it very clear to them that we didn't get this kind of training when we entered the workforce and wanted them to listen and hear what we were providing them.

The most poignant personal story came not from us, but from one of their teachers. Mark Watson, who also received his certification during this set of classes, is the Welding teacher at the UCHS-CTE. He is/was a welder by trade and a Subject Matter Expert. We allowed time for him to speak directly to the students during the Hazard Communication session. He told a personal story during his time as a young welder.

* NIOSH [2017]. Young worker injury deaths: a historical summary of surveillance and investigative findings. By Perritt KR, Hendricks KJ, Goldcamp EM. Morgantown, WV: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2017-168

Mr. Watson had recently gone back to a small “mom-and-pop” company from a larger, more mainstream company. The larger company had provided him lots of safety training that he took to heart. One of the jobs that he was assigned to had him torch-cutting a large tub and the job needed to be completed as soon as possible. Mark began to question what had been in them and wanted to see an MSDS (prior to the HCS 2012 standard). The boss didn’t have one readily available, but he would get him one. They reassured him that it was nothing to be concerned with. Could he please just get this job done. To a small business, time really is money. So, Watson did the job.

Later in the evening, Mr. Watson was having trouble breathing. He couldn’t seem to catch his breath at times. As time passed, it was not getting any better. He sought medical attention. He had what the doctor termed “chemical pneumonia.” The tub he had been cutting had contained chemical that, in the right circumstances, was harmful if inhaled. Mark learned that once the MSDS was given to him. He expressed how thankful he was that his condition had not turned out any worse than it did, but he understands that it very well could have. He pleaded with the students to take the time, no matter what, to know what they are working with, working in and working around; their health and possibly their lives depended on it. He went on to tell a couple more stories about things he had experienced. The students listened to him tell his story because THAT had happened to someone they know.

For our show-and-tell, we had items related to safety. These items were donated by Industrial Safety Specialists at NFS. During the session on Walking, Working Surfaces including Fall Protection, we were able to show them a harness and lanyard, pieces of a fall-arrest system. We also had a couple of different lock-out/tag-out devices to see when they were learning the OSHA standards on Electrical.

By far, the best demonstrations came during the session on Personal Protective Equipment. Our selection was limited at the time, but we had enough commonly used items that it was enough. Because these are young workers who do not have much experience and will likely enter the workforce in jobs requiring the use of PPE, we spent more time on PPE than we did any other topic. And, let’s face it, personal protective equipment is usually the easiest, quickest and cheapest solution to a safety hazard or condition and PPE is what will be required of them by their employers.

The students did more than just look at the pieces of PPE. They passed them around, inspected them for condition and some tried them on. *Note: no one was allowed to wear the respirator. They were reminded of our discussion on medical exams and training that OSHA requires for a worker to be qualified for respirator use. We also played the game "hot potato" while passing around the pretty pink USW hardhat as well as the many types of safety eyewear. As the items made their way around the room, I would call hot potato. Whoever had the item(s) would look for the designation asked for. If they had safety glasses, they had to look for the ANSI Code. If they had the hardhat, they had to look for and determine the class for which the hardhat was rated. We spent time on the proper way to put earplugs in the ear; I even gave a how-to demonstration.

Conclusion and Final Thoughts

Putting together a set of classes of this magnitude for the first time was an undertaking. Many organizations came together to make the inaugural Fall 2018 OSHA 10-Hour General Industry certification class a success! We officially certified 147 students and 1 teacher with only one participant lacking two hours to complete their certification. We are hopeful that this collaboration in Health and Safety will continue indefinitely. These students ARE the Next Generation of safety in the workplace.

***Please continue past the attachments for photos.

Attachment A



Ready Graduate Indicator Overview

Overview

The *Ready Graduate* indicator is a new accountability metric in Tennessee's Every Student Succeeds Act (ESSA) plan and is aligned to the goals in the department's strategic plan, *Tennessee Succeeds*. The *Ready Graduate* indicator measures the percentage of students who earn a diploma from a Tennessee high school and meet success milestones that increase their probability of seamlessly enrolling in postsecondary education and securing high-quality employment.

Implementation Timeline

The department's proposed implementation plan for the *Ready Graduate* indicator is outlined below. Note that the *Ready Graduate* indicator is based on lagged data, so the accountability indicator that is made public this fall (2018) is based on data from seniors who graduated in spring/summer 2017.

Accountability Release Date	Graduation Cohort	Ready Graduate Indicator Implementation Snapshot	Specific Ready Graduate Indicator Requirements by Year
Fall 2018	2016-17 Graduates	✓ ACT/SAT only	<ul style="list-style-type: none"> earn a composite score of 21 or higher on the ACT or a 1060 or higher on the SAT
Fall 2019	2017-18 Graduates	<ul style="list-style-type: none"> ✓ ACT/SAT ✓ 4 EPSOs ✓ 2 EPSO + earn an industry certification ✓ 2 EPSOs + earn an ASVAB AFQT score of military readiness 	<ul style="list-style-type: none"> earn a composite score of 21 or higher on the ACT or a 1060 or higher on the SAT; or complete four early postsecondary opportunities (EPSOs); or complete two EPSOs + earn an industry certification; or complete two EPSOs + earn a score of 31* on the Armed Services Vocational Aptitude Battery (ASVAB) Armed Forces Qualifying Test (AFQT).
Fall 2020	2018-19 Graduates	<ul style="list-style-type: none"> ✓ ACT/SAT ✓ 4 EPSOs ✓ 2 EPSO + earn an industry certification ✓ 2 EPSOs + earn an ASVAB AFQT score of military readiness ✓ 2 EPSOs + earn a WorkKeys NCRC level TBD 	<ul style="list-style-type: none"> earn a composite score of 21 or higher on the ACT or a 1060 or higher on the SAT; or complete four early postsecondary opportunities (EPSOs); or complete two EPSOs + earn an industry certification; or complete two EPSOs + earn a score of 31* on the Armed Services Vocational Aptitude Battery (ASVAB) Armed Forces Qualifying Test (AFQT); or complete two EPSOs + earn a WorkKeys National Career Readiness Certificate (level TBD)

Ready Graduate Indicator Overview

Ready Graduate Indicator Evidence of Completion

The *Ready Graduate* indicator is meant to capture evidence of student performance beyond academic proficiency to represent a holistic, well-rounded education. The following table indicates what evidence will indicate a student has met each of the measures of readiness.

Early Postsecondary Opportunities	Evidence of Completion
<i>Advanced Placement (AP)</i>	<i>Complete course and attempt exam</i>
<i>Cambridge International Examinations (CIE)</i>	<i>Complete course and attempt exam</i>
<i>College Level Examination (CLEP)</i>	<i>Earn a passing score of 50 or higher on exam</i>
<i>Dual Enrollment</i>	<i>Complete course</i>
<i>Industry Certification (IC)</i> <i>Note: An IC could count for additional EPSO credit.</i> <i>Please refer to the ESSA Industry Certification Conversion Chart for full details.</i>	<i>Earn passing score on exam and/or complete licensure requirements</i>
<i>International Baccalaureate (IB)</i>	<i>Complete course and attempt exam</i>
<i>Local Dual Credit</i>	<i>Complete course and attempt exam</i>
<i>Statewide Dual Credit</i>	<i>Complete course and attempt exam</i>
Other Indicators of Readiness	Evidence of Completion
<i>American College Testing (ACT)</i>	<i>Earn a composite score of 21 or higher</i>
<i>Armed Services Vocational Aptitude Battery (ASVAB)</i> <i>Armed Forces Qualifying Test (AFQT)</i>	<i>Earn a score of 31 or higher*</i>
<i>Scholastic Aptitude Test (SAT)</i>	<i>Earn a composite score of 1060 or higher</i>
<i>WorkKeys National Career Readiness Certificate (NCRC)</i>	<i>Earn an NCRC level TBD by earning aligned scores on the three WorkKeys exams: Applied Math, Graphic Literacy, and Workplace Documents</i>

*Students must earn a minimum ASVAB AFQT score required to qualify for admission into at least one branch of the military as of June 1 following a student's graduation in order to demonstrate military readiness for the indicator. Future years' scores may change based on needs of the U.S. Department of Defense (DOD). Scores will be determined on June 1 annually for the following year's accountability.

The department is continuing to gather feedback on the implementation plan and plans to release final business rules in November 2018. For additional information, please email TNEducationAccountability@tn.gov.

Attachment B (An excerpt, page 1 of 9)



Tennessee Promoted Industry Certifications

The department's goal is that every student in Tennessee graduates high school prepared for postsecondary coursework and qualified for quality employment. To achieve this, high schools are encouraged to place students in career-aligned learning pathways through robust career and technical education (CTE) programs that culminate in the achievement of nationally recognized industry certifications, capstone work-based learning experiences, and/or attainment of postsecondary credit hours through early postsecondary opportunities (EPSOs).

Certification	Aligned Course	Program(s) of Study	Career Cluster(s)
Level I Siemens Certified Mechatronic	Mechatronics II (6157)	Mechatronics	Advanced Manufacturing
Machining Level I - Measurement, Materials, and	Principles of Manufacturing (5922)	Machining Technology; Electromechanical Technology;	Advanced Manufacturing
Production Certification (CPT)	Principles of Machining (5929), Introduction to Electromechanical (6091)	Machining Technology; Electromechanical	Advanced Manufacturing
AWS SENSE Entry Level Welder	Welding I (6078)	Welding	Advanced Manufacturing
AWS SENSE Advanced Level	Welding II (6033)	Welding	Advanced Manufacturing
American Welding Society	Welding II (6033)	Welding	Advanced Manufacturing
NCCER Core Curriculum - OSHA 10*	Welding I (6078)	Welding	Advanced Manufacturing
OSHA 30 General Industry*	Principles of Manufacturing (5922)	Machining Technology; Electromechanical	Advanced Manufacturing
Precision Measurement Instruments	Any Level 3 or 4 Advanced Manufacturing course	Machining Technology; Electromechanical	Advanced Manufacturing
FANUC	Principles of Manufacturing (5922)	Machining Technology; Electromechanical	Advanced Manufacturing
FANUC	Robotics & Automated Systems (6143)	Mechatronics	Advanced Manufacturing
Tennessee Specific Industry Certification	Veterinary Science (5961)	Veterinary and Animal Science	Agriculture, Food, & Natural Resources



Tennessee

Work Ethic Diploma Standards

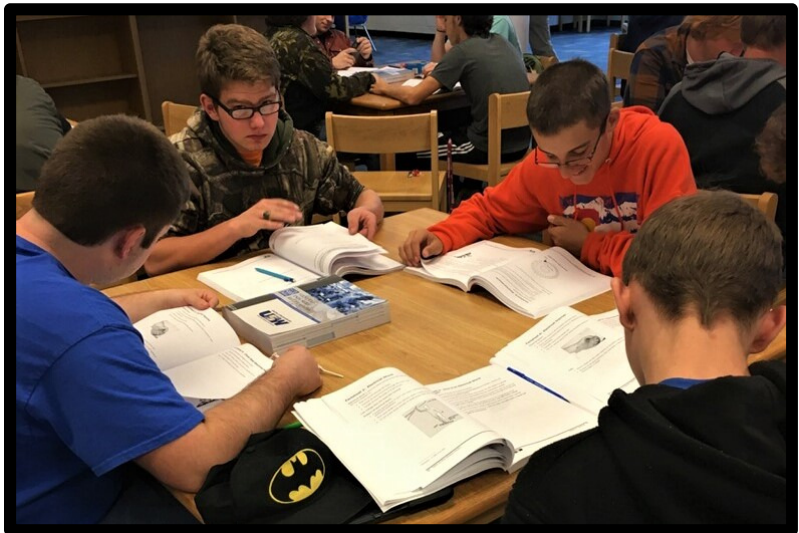
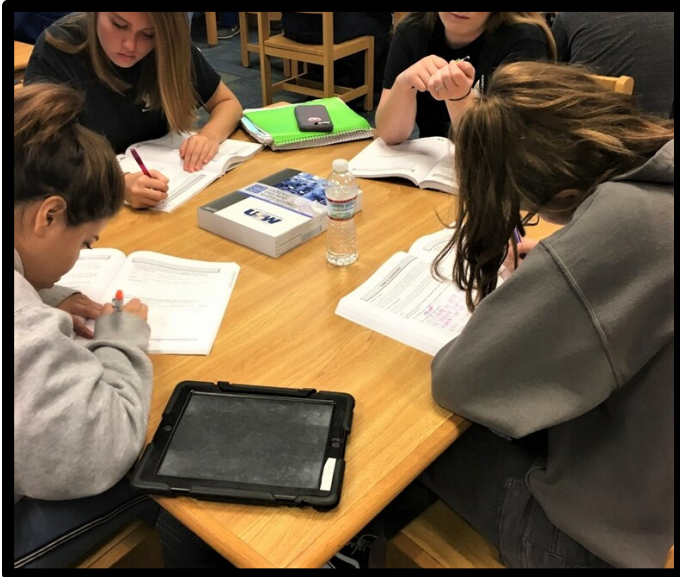


- 1. Attendance Standard**
 - (1 pt.) Student has no more than 5 absences from school during the senior year.
 - (2 pts.) Student has no more than 3 absences from school during the senior year.
 - (3 pts.) Student has no more than 1 absence from school during the senior year.
- 2. Absence Standard**
 - (1 pt.) Student has no more than one unexcused absence from school during the senior year.
 - (2 pts.) Student has no unexcused absences from school during the senior year.
- 3. Tardiness Standard**
 - (1 pt.) Student has no more than two unexcused tardies to school during the senior year.
 - (2 pts.) Student has no more than one unexcused tardy to school during the senior year.
- 4. Discipline Standard**
 - (1 pt.) Student has no more than one discipline referral during the senior year.
 - (2 pts.) Student has no discipline referrals during the senior year.
- 5. Overall Grade Point Average Standard**
 - (1 pt.) Student has an overall GPA of 2.0 to 2.9
 - (2 pts.) Student has an overall GPA of 3.0 to 3.4
 - (3 pts.) Student has an overall GPA of 3.5 or above
- 6. Drug Free Standard**
 - (5 pts.) Student voluntarily presents written proof as being drug free.
- 7. CTE Coursework Standard**
 - (1 pt.) Student has successfully completed at least one CTE course by the end of the senior year.
 - (2 pts.) Student has successfully completed two CTE courses by the end of the senior year.
 - (3 pts.) Student has successfully completed three or more CTE courses by the end of the senior year.
- 8. CTE Competition Standard**
 - (1 pt.) Student has competed in an approved regional level CTE competition during the senior year.
 - (2 pts.) Student has competed in an approved state level CTE competition during the senior year.
 - (3 pts.) Student has competed in an approved national level CTE competition during the senior year.
- 9. TN Promise Standard**
 - (2 pts.) Student is in good standing with TN Promise and has completed the required 8 hours of community service.
- 10. Dual Enrollment/Credit Standard**
 - (2 pts.) Student has successfully completed a Dual Enrollment, Dual Credit, or Advanced Placement course and has been granted credit by any post-secondary institution during or before the senior year.
- 11. Industry Certification Standard**
 - (2 pts.) Student has received a national industry certification during or before the senior year. (i.e., Snap-on Metering Certificate, NCCER Certificate, etc.)
- 12. Enrollment in Post-Secondary Standard**
 - (2 pts.) Student is registered or has applied at a post-secondary institution for the fall of the graduating year.
- 13. Career Readiness Certificate Standard**
 - (2 pts.) Student has achieved a Bronze Level Career Readiness Certificate.
 - (4 pts.) Student has achieved a Silver Level Career Readiness Certificate.
 - (8 pts.) Student has achieved a Gold or Platinum Level Career Readiness Certificate.
- 14. Industry Awareness Standard**
 - (1 pt.) Student has participated in one industry awareness event during the senior year.
 - (2 pts.) Student has participated in more than one industry awareness event during the senior year.
 - (3 pts.) Student has participated in an internship or work based learning activity.

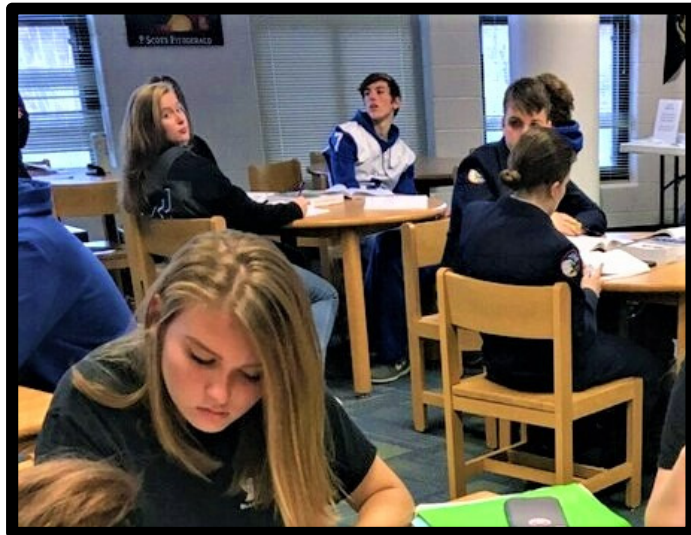
To receive the Work Ethic Diploma distinction a student must earn a minimum of 20 points and a regular high school diploma

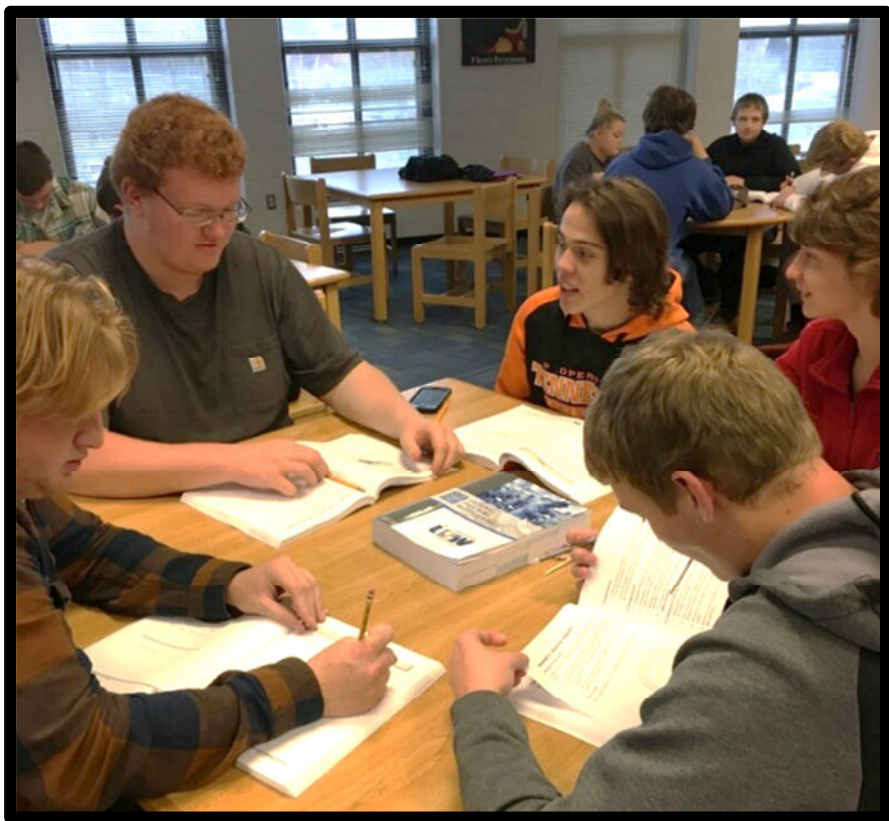
Building a Stronger, Safer Community

The Classes in Photos†



† Note: all students in photos have Media Release forms on file. These forms allow us to use their images and likenesses for public release.









Having some fun!



**Mark Watson, Welding Teacher, speaks
on personal experiences, in his former
career**

