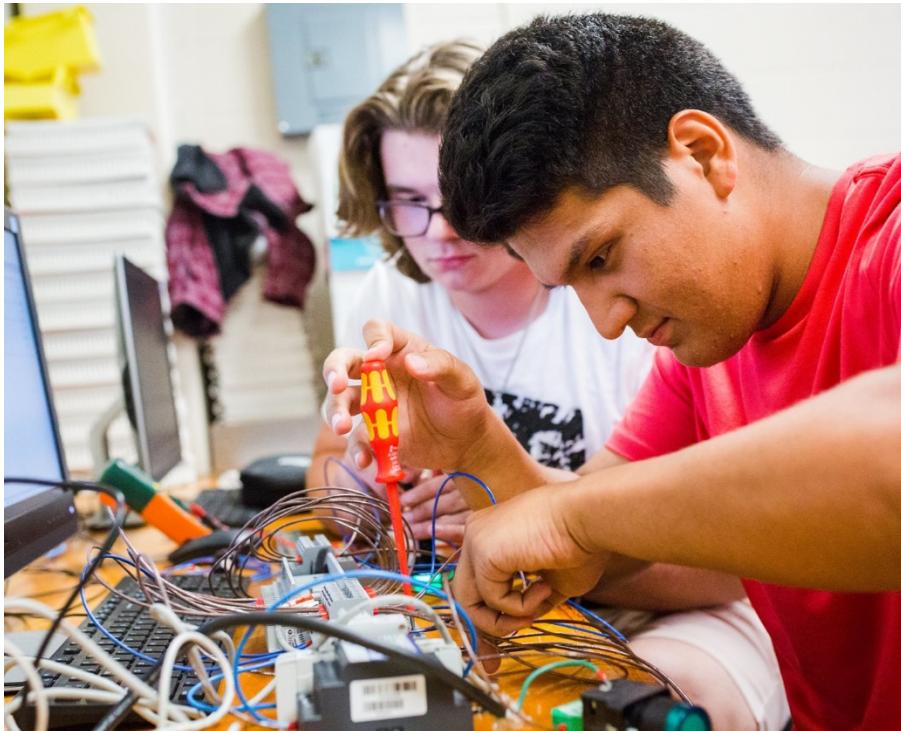


# CAREER & TECHNICAL EDUCATION



## CAREER & TECHNICAL EDUCATION REOPENING GUIDE

**NOTE:** All information in the document is non-regulatory guidance issued for general informational purposes only. This document is not intended to constitute legal advice. Because local school board policy and unique facts make dramatic differences in analyzing any situation, the Tennessee Department of Education advises each school district to consult with the local school board attorney for specific legal advice regarding the impact of the COVID-19 pandemic on school operations.

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**NOTE:** The Tennessee Department of Education developed this Tennessee specific guide using the Association for Career and Technical Education (ACTE) publication, [High-Quality CTE: Planning for a COVID-19 Impacted School Year](#) (June 2020). ACTE is the nation's largest not-for-profit association committed to the advancement of education that prepares youth and adults for successful careers. ACTE represents the community of CTE professionals, including educators, administrators, researchers, school counselors, guidance and career development professionals and others at all levels of education. You may learn more about ACTE at [www.acteonline.org](http://www.acteonline.org).

The Tennessee Department of Education acknowledges credit to ACTE and their stakeholders who contributed to the creation of that publication. We encourage local leaders to review the ACTE publication in its entirety for additional insight into providing high-quality CTE in Tennessee.

## Overview

The purpose of this document is to serve as a resource to assist districts and schools in planning for and providing high-quality career and technical education (CTE) experiences for students during a COVID-19 impacted school year. This guidance is organized into sections of broad topics which are related to the implementation of CTE relative to the three main instructional delivery models – traditional or **in-person** learning, virtual or **remote** learning, and blended or **hybrid** learning – which are expected for the 2020-21 school year or in response to a potential future closure. Each section will present overarching information and include overarching considerations, specific issues relevant to each instructional approach, and key questions to help guide local discussions.

Furthermore, this document may assist districts in development of the **Continuous Learning Plan** (CLP). Per Tennessee State Board of Education Rule 0520-01-17 and Policy 3.21, districts are required to develop a CLP for the 2020-21 school year to address disruptions which may occur as a result of the COVID-19 pandemic. In Section 3 of the CLP, districts must address Instruction that “reinforces evidence-based teaching approaches for core content, but also allows for students to have **career pathways and accelerated course work through in person and distance learning experiences**” and “**stay on track for career goals.**” In general, districts are strongly encouraged to develop and include CTE instructional plans and supports in the CLP submission.

**NOTE:** *Districts which received Perkins V funding during a COVID-19 impacted school year but choose not to provide or significantly limit student access to CTE instruction, will be considered out of compliance and at risk of losing funding.*

## Providing High-Quality CTE Instruction

### Considerations

Career and technical education (CTE) is unique for its applied, contextual nature. CTE programs are designed with hands-on experiences in mind and providing these experiences to develop technical skills and fulfill lab or shop hours is a major concern for CTE educators<sup>1</sup>. Providing high-quality instruction is perhaps the most difficult, yet also the most critical aspect of a COVID-19 impacted learning environment in Tennessee. Ultimately, all students benefit from CTE educator efforts to embed applied learning experiences and provide personalized instruction, regardless of the delivery model.

At the local level, CTE educators will need to consider:

- All options for project-based, hands-on and collaborative learning for social distancing or remote learning delivery by developing easy-to-navigate and accessible remote content and activities.
- Strategies and communication structures to ensure all students remain engaged through a positive and respectful classroom culture that supports students' social-emotional needs.

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<sup>1</sup> Association for Career and Technical Education, May 2020 survey

## In-Person

If nearly all students return to in-person learning:

- Hands-on and project-based learning can and should continue in person. Projects and lab work will need to be designed with social distancing in mind. Partner or small group collaboration may be less common. One option that educators have suggested for small group work during social distancing is for students to collaborate virtually using learning management system (LMS) tools or other software and apps, even when they are physically in the same classroom. This would also allow all students to participate in real-time group work with other students.
- Educators should consider using video or other virtual instruction strategies even in-person to minimize contact in the classroom; for instance, instead of automotive technology students gathering around a car to look inside, the educator could use a portable video camera to show the inside of the vehicle, while students remain in their seats.
- Creating a positive classroom culture of learning and respect, and offering flexibility and differentiation to students will also be critical as students return to in-person instruction. Each student has experienced the effects of the COVID-19 pandemic in different ways, and the return to in-person education may present additional challenges or fears to many.

## Remote

If instruction will take place entirely or mostly in a remote environment:

- Educators will need access to evidence-based online learning strategies. Fundamental strategies for engaging instruction online include chunking each course, course unit and lesson, and providing clear navigation throughout, with frequent check-ins that require students to respond and engage.
- Educators will need to communicate clear norms and expectations to students about using appropriate language, sharing speaking time online, responding constructively in discussion boards, when and how to use different media channels (e.g., when it's more appropriate to email the teacher versus starting a class discussion), and what to do in the event of cyberbullying or harassment. Learning management system (LMS) and other virtual tools enable educators to track the amount of time that a student is engaged online each day or class period, and can help educators to monitor student effort.
- Video demonstrations are an important instructional strategy for remote CTE educators. CTE educators may record modeling skills including everything from checking vital signs to making a meal to repairing the plumbing in their own house. These videos can be delivered synchronously or asynchronously, and paired with interactive features like Q&A or discussion sessions, chats and polls.
- CTE educators will also need clear guidance on the use of synchronous instruction, which can help to build the classroom community but is filled with challenges, such as student privacy

and scheduling issues. Even when synchronous instruction is available, the most critical content and information should be communicated in both synchronous and asynchronous formats for students who may struggle to be online at a certain day and time. A number of strategies can facilitate synchronous instruction and enable group work, discussion and reflection.

- Techniques used in the physical classroom, such as bell ringers and exit tickets, can easily translate to online courses. However, even synchronous instruction needs to be carefully planned to engage students — multitasking, distraction and technology issues can all reduce student participation and effective learning. The techniques below can help keep students engaged in this type of remote learning:
  - Where possible, split the class into smaller groups. Offering content at multiple times can also help students who struggle to attend class remotely because of other responsibilities or connectivity issues.
  - Include video of participants during introductions or questions, but when presenting content display only the speaker to reduce distractions.
  - Offer the equivalent of bell ringers through polls, quizzes or questions in the chat as students enter.
  - Prepare students to be called on, and use this strategy throughout. Adding different voices to the conversation breaks up the monotony.
  - Stop and take questions frequently and send visual signals of appropriate times for questions.
  - Consider how instruction will appear on screen. Check your lighting, framing and video angles and look into the camera rather than at the video stream.
  - Consider accessibility so that all students, including students with disabilities, may access and engage in the instruction.
- Project-based learning will also have to be redesigned, with more attention focused on projects that can be completed remotely. For instance, students could develop their own mock businesses with a budget and marketing plan. Educators may also be able to send home the supplies needed for students to complete projects, or use computer-based simulations to engage students remotely and allow for skills practice.
- If many students cannot access the internet or have limited access, then materials will need to be physical media: textbooks, paper packets and at home kits for hands-on practice that can be safely used at home.

## Hybrid

If instruction will take place in a mostly hybrid learning environment:

- CTE educators will need to consider all of the above for both virtual and in-person. While students in this model will have some time for in-person, on-campus instruction, it will be less time than normal and educators will need to differentiate their instruction based on scheduling and student engagement.

- To maximize students' limited time on site, educators may consider demonstrating techniques over video, reducing in-class time needed for demonstration.
- Certain aspects of skill practice can be shifted to the remote setting. Simulation packages that include both virtual and in-person modules may work in a hybrid setting. For instance, some virtual patient care simulations can be completed at home, while students practice with mannequins on campus.

## Key Questions

### General Questions

- How will you work to rebuild a classroom community and support learners' social-emotional needs?

### In-Person Questions

- How can you design projects and group work with social distancing in mind? Will learners and instructors have devices in the classroom so they can collaborate remotely and maintain distancing, even when they're in the same physical space?
- If you have learners who remain at home, how will you engage them in instruction and collaboration?

### Remote Questions

- Which instructional strategies have been most effective this spring in the remote environment and should continue to be used?
- What instructional techniques that work for you in the face-to-face classroom can be modified to the online space?
- How can you clearly organize learning to help students navigate online instruction? • How can you clearly communicate remote classroom norms and expectations to learners? How will you address negative behavior in the online space?
- How will you support students to collaborate, discuss and reflect on course content online? • How can learning be personalized in the remote space? How will you have periodic one-on-one interactions with learners?
- How will you apply project-based learning to the remote environment?
- What practical skills can you demonstrate over video? • If you send home textbooks or paper packets, how will you help learners engage with these materials? How frequently will materials be exchanged between students and instructors?
- If you send home kits of materials, how will you promote safe usage? What instructions will you include? How will students get completed kits back to you?

### Hybrid Questions

- How can you maximize in-person time by moving instruction and at least some demonstration to the remote space?

# Assessing CTE Students

## Considerations

CTE programs employ multiple forms of formative and summative assessments, founded on technical competencies that are aligned to program standards and allow students to demonstrate academic, technical and employability skills. Credentialing options such as certifications, licensures, certificates, and degrees are important parts of CTE student assessment that could be significantly impacted due to COVID-19. Socially distanced in-person, remote and hybrid instructional models could all affect how learners demonstrate their knowledge and skills for these credentials, and their ability to meet requirements. Assessments tied to industry certifications in particular are often administered by a third party, so educators will have to work closely with partners to provide students continued access in the new school year. CTE educator assessment of knowledge and skill gains is equally important. Regardless of the instructional model chosen, CTE educators will need to determine learning gains and losses when students return to campus after closure, particularly for students who are entering the next course in a sequence that assumes preexisting knowledge and skills.

At the local level, CTE educators will need to consider:

- Assessing learner gains and losses during and after any future closures.
- Providing multiple methods of assessment, multiple formats for feedback and accommodations or modifying performance assessments for social distancing or virtual platforms.
- Providing assessment materials to remote learners and how to take advantage of remote proctoring, alternative testing sites, and other testing flexibilities for credentialing exams.

## Instructional Approach

### In-Person

If nearly all students return to in-person learning:

- Many assessments can be carried out as normal. However, some assessment delivery may need to be modified to meet social distancing requirements. For instance, performance assessments in which students show their technical or employability skills through collaboration, such as working together to complete a construction task, may need to be modified to allow for more individual demonstration of knowledge and skills. Learners may also need additional personal protective equipment during assessments, and educators may need additional time to assess individual student skills in light of social distancing requirements.
- For industry certification or licensing exams, instructors may need to identify alternative sites for students to take assessments, such as TCAT or community colleges, if some testing centers remain closed or have limited capacity. Some testing sites may also limit the number of learners being assessed at a given time, leading to scheduling challenges.

### Remote

If instruction will take place all or mostly remotely:

- Assessing CTE student learning using remote methodologies will involve new techniques. A number of resources and tips exist that can help CTE instructors transition classroom

assessment online. Some recommendations include providing smaller and more frequent assessments spread out across the course, as well as using online quizzes and polls, student reflections, and multiple formats of instructor-to-learner feedback as well as feedback among students through virtual breakout groups or discussion boards.

- Feedback should be communicated via written comments, phone, email or video, in synchronous or asynchronous formats, and may be shared with a group or provided independently, depending on the technology used and the goals of the instructor.
- Some assessment options, such as quizzes, may be built into learning management systems or online textbooks.
- It is important to ensure any technology used for assessment is accessible and easy to navigate so that students' content knowledge and skills, rather than technology access or expertise, is being measured.
- Developing assessments that reduce cheating and are a valid representation of what students know is an issue raised frequently during remote instruction. Institutions can provide guidance and policies on academic integrity for remote assessments. One strategy is to strive for assessments that require knowledge or skills to be applied, rather than just recalled.
- Some CTE performance assessments can be adapted relatively easily to remote learning, such as a written business plan, a graphic design product or a presentation. For more hands-on demonstration of skills, research suggests that simulation-based assessment can be effective. Simulation tools or at-home kits that can be used for student practice.
- Students may be able to demonstrate skills using at-home kits and live or prerecorded video; for instance, a health care student could record themselves placing an IV into a training arm. If at-home kits are used for assessment, however, all the materials must be supplied to the student to ensure equity.

## **Hybrid**

If instruction will take place in a mostly hybrid learning environment:

- CTE educators will need to consider all of the above for both remote and in-person as students are assessed both remotely and in person, as necessary.
- In each field of study it will be important to determine which knowledge and skills are better assessed in-person and which knowledge and skills can be assessed remotely, without sacrificing the validity or reliability of assessments.

## Key Questions

### General Questions

- How will you assess learning loss in CTE when classes resume? Do you have any CTE-related remedial activities in place?

### In-Person Questions

- How can you modify assessments when performance tasks call for a group to work together in close quarters? Can more socially distanced tasks or simulations be substituted?
- How will changes made to assessments for social distancing impact accommodations for special populations?
- How will you schedule performance assessment to maintain social distancing?
- If your usual testing centers for industry certification or licensing exams remain closed, can you proctor assessments on campus or at a worksite?

### Remote Questions

- What assessments that work for you in the face-to-face classroom can be modified to the remote environment? How can your business partners contribute to these decisions?
- How will you provide feedback to learners?
- How will you manage the time needed to assess student skills, particularly if you must assess performance individually?
- How will you develop remote assessments that measure content knowledge and skills rather than skills using the online platform?
- How will you continue to provide accommodations with remote assessments?
- How can you use simulations, at-home kits, video or similar tools for assessment?
- How will you facilitate credentialing exams through remote proctoring, alternative testing sites or other flexibilities?
- What other aspects of industry credentials, such as seat time and work-based learning requirements, will be impacted by remote learning? How can your business partners help you navigate these challenges?

### Hybrid Questions

- How will you coordinate online and in-person assessments to cover course content without too much repetition?
- Which standards within your program are best assessed in person, and which can be evaluated remotely?

# Career & Technical Student Organizations

## Considerations

Career and technical student organizations (CTSOs) are an integral part of CTE instruction and a key element of CTE programs. These intracurricular organizations – DECA, FBLA, FCCLA, FFA, HOSA, SkillsUSA, and TSA – include thousands of Tennessee students and the collective impact on a students' educational aspirations, engagement, employability skills and more is undeniable. Continuing to engage students in CTSOs will be critical for their future career readiness, and the overall success of CTE programs. Many traditional CTSO activities, such as conferences, community service projects, competitive events and fundraisers, present added challenges in a COVID-19- impacted school year. The national and Tennessee CTSO organizations are working to address these challenges, with the majority planning to offer meetings and leadership training through multiple modes of engagement to support local chapters.

At the local level, CTE educators will need to consider:

- Involving students and parents/guardians on CTSO decision-making, like chapter meetings, elections, local competitions, etc. to explore all options to provide these experiences for students.
- Adjustments to recruitment and chapter engagement strategies to ensure students still have access to the important skill-building opportunities that CTSOs provide, including adapting fun and social activities to socially distanced or remote environments.
- Developing a local policy regarding student CTSO participation in competitions, activities, fundraisers and community projects with student safety and social distancing in mind and to maximize participation of learners on campus and at home.

## Instructional Approach

### In-Person

If nearly all students return to in-person learning:

- Districts and schools will still need to consider social distancing and safety requirements which could complicate some CTSO activities, especially those that have typically taken place outside of class time. Activities could be conducted during already scheduled class times, utilizing larger spaces where students can spread out, such as gyms or cafeterias; through virtual meetings; or smaller committee meetings rather than entire chapter meetings.
- Elections for leadership positions may need to be held virtually or over a longer period of time to reduce contact between students.
- Competitive events may be possible with minor modifications if learners return to campus, as most involve students working individually or in small teams. Projects should be evaluated for safety in light of the current local guidelines if they involve external activities, such as work in the community.

- Industry partners may still be able to mentor projects and serve as event judges in person, with appropriate social distancing; if public visitors are restricted on campus, business partners could connect remotely to meet and judge competitive events hosted on campus.
- Local CTSO chapters in Tennessee pride themselves on extensive community involvement. Districts and schools should follow local and state guidelines for external events to ensure student safety. Where possible, rethink activities and design projects where social distancing and other safety measures can be prioritized. For example, instead of picking up items for a food drive, students might place drop-off containers in easy-to-access locations, such as parking lots, where donations could be collected without direct contact among individuals.

## **Remote**

If instruction will take place all or mostly remotely:

- Meetings can be held through virtually and students can engage through platform discussion boards, etc.
- Some competitive events may not be possible in a fully virtual environment. However, many others will be possible. Explore all options to modify these competitions so that students can continue to experience these CTSO events in a virtual setting.
- Employer mentors and event judges can continue to engage with learners through virtual conferences, but communication about the virtual conference format should be clear and consistent to help these partners and your students make the switch from in-person to virtual events. For example, students could record read-alouds to be posted on social media for preschool children, virtually tutor elementary students, produce public service announcements, participate in appropriately socially distanced outdoor cleanups, conduct online or drop-off supply drives or fundraisers for important community needs, or donate their emerging skills to those in need, virtually or with minimal personal contact.

## **Hybrid**

If instruction will take place in a mostly hybrid learning environment:

- There may be added issues to think through since students may not be all together at once, or could be on campus for only part of the year. Use virtual platforms to host CTSO meetings and activities, or separate chapter meetings for different groups of students.
- Advisers will need to think carefully about how to maintain activities like fundraisers and service projects if not all students are on campus each day. Dividing responsibilities and careful planning will be critical to the success of projects in this model.

## Key Questions

### General Questions

- How can student leaders have a voice in decision-making about CTSOs in a COVID-19-impacted school year?
- How can you prepare students to move forward with projects given uncertainties like possible closures and pending decisions about competitive event formats?
- How will you communicate any changes in activities to students, families and partners, as appropriate?
- How can you continue to engage business and community partners?

### In-Person Questions

- How will you schedule chapter meetings for social distancing and to maximize participation? Even if students return to campus, can you meet virtually?
- How can you modify processes for electing officers or appointing committees for social distancing? Even if students return to campus, can you use remote tools for elections? • How can you help learners modify projects to comply with social distancing?
- Are there travel restrictions in place that affect student participation in events? • How can students participate in leadership training with social distancing, or virtually if in-person events are cancelled?
- How can you adapt fundraisers and service projects for social distancing? Are there new needs in your community your students could help meet?
- If you have members who remain at home because of illness, possible exposure or underlying medical conditions, how will you keep them involved?

### Remote Questions

- Is there an approved synchronous platform that you can use for meetings? How will you schedule virtual meetings to maximize participation?
- If your state will host competitive events virtually, which events will be available to students and how can you help them prepare?
- Which virtual leadership trainings can students participate in?
- How can your current service projects or fundraisers be adapted to the virtual space? What new opportunities might be available?

### Hybrid Questions

- How will you offer chapter meetings if some students are on campus while others are working remotely?
- If you have longer-term projects or fundraisers, how will you manage those without students on campus every day? Are there project roles that need to be reassigned or redistributed?

# Work-Based Learning Experiences

## Considerations

When considering how to offer work-based learning (WBL) in a COVID-19-impacted environment, CTE educators must be aware of and follow local and state public safety requirements and laws. This is critically important to ensure the safety and well-being of your CTE students. Furthermore, local unemployment, industry health and safety protocols and simply employers' willingness to accept liability for students in a WBL placement will have a major impact on the availability of WBL. However, incorporating a full continuum of WBL experiences across all CTE programming is critical and will build meaningful career readiness and relevant employability skills for students. Districts are strongly encouraged to explore all remote and hybrid options to provide WBL experiences for students.

At the local level, CTE educators will need to consider:

- Consulting with identified business and community partners to gauge their capacity and willingness to engage in various types of WBL.
- Developing a local policy regarding student WBL placement that includes strong safety protocols, including social distancing guidelines for in person WBL placements, relative to the student WBL placement.
- Providing or ensuring students have the technology and materials students need related to WBL placements. (e.g. access to internet, appropriate devices, school-based platforms, and materials).
- The district or school should provide or ensure students have the opportunity to enroll and access WBL placements. (e.g. transportation to/from placement, on-campus or School Based Enterprise (SBE) placement options)
- The school counselor, WBL Coordinator, and student/parent or guardian should discuss all potential WBL opportunities to ensure the WBL placement aligns with the student's educational and career goals.

## Instructional Approach

### In-Person

If nearly all students return to in-person learning:

- Districts and schools may allow WBL students to participate in WBL placements, tours, job shadows, internships and/or apprenticeships. All required WBL documentation will need to be completed and WBL coordinators must make the required minimum number of placement visits (one per grading period).
- Districts should consider asking students/parent or guardians to sign a waivers for WBL participation. These waivers or other guidelines should be developed with legal counsel.

- CTE programs should also consider whether and how to provide transportation to the worksite, so that students do not have to use public transit, and make plans for educators to monitor student placements in person, including the safety aspects of the jobsite.
- If campuses are open, but local conditions preclude worksite-based experiences, school-based or simulated models can be used. SBEs, like campus stores or restaurants, may need to limit services to students and staff and operate using social distancing and disinfection protocols, or switch to an online order and delivery model. SBEs that serve external customers, like automotive service centers and pet grooming services, may need to close; if able to stay open, they will need to follow state and local social distancing and safety protocols. The easiest SBEs to continue operating with social distancing will be those that serve clients remotely, such as a 3D printing firm that takes online orders and mails completed products to clients.

## **Remote**

If instruction will take place all or mostly remotely:

- Remote WBL most frequently takes the form of virtual worksite tours, interviews with industry professionals and virtual mentoring sessions. These can vary in intensity from a few minutes of pre-recorded video to live, interactive meetings with industry professionals on the worksite.
- There are several platforms like BenchFly (<https://benchfly.com/>), Virtual Job Shadow (<https://www.virtualjobshadow.com/>), Nepris (<https://www.nepris.com/>), etc. that can help educators and students connect virtually with industry leaders.
- Virtual internships and apprenticeships are another option, although there may be some areas that require specialized equipment that would limit this option. For example, health science students may not be able to take part in simulated clinicals if equipment is not readily available.
- Extended reality (XR) and other simulations can also help students practice employability skills through authentic workplace scenarios.
- Some SBEs and other simulated experiences can be operated remotely or with limited social interaction, such as the 3D printing business described above, or others in fields like graphic design or video production.

## **Hybrid**

If instruction will take place in a mostly hybrid learning environment:

- In a blended learning environment, educators may be able to combine worksite, school-based and virtual WBL models.
- The implementation of school-based models would differ most significantly in the blended scenario, as limited time on campus would impact the design and operations of industry-driven projects, simulated businesses and SBEs. These activities would need to be designed with more remote elements in mind, or with tasks split between student groups if the blended model involves cohorts that rotate on and off campus.

## Key Questions

### General Questions

- Has your local department of health, county government, state, or district provided any guidance, waivers or other changes to WBL requirements?
- What capacity for WBL do local businesses have? Do they need interns and apprentices?
- Do they have time to coordinate job shadows or similar experiences?
- How will you continue to align WBL training plans with desired learning outcomes?

### In-Person Questions

- Will your local department of health, county government, state, or district allow students to go to a worksite? Will your industry partners allow students and/or teachers on the worksite? Are there essential businesses in which you could place students?
- If students can be on worksites, how will educators monitor the safety of students in those placements, as well as the desired learning outcomes? How will you address liability?
- If students would normally use public transit or school buses to get to the WBL placement, can another transportation option be found?
- How can you integrate WBL into the classroom through industry-driven projects or by transforming the classroom into a simulated business?
- If off-campus WBL activities are cancelled during the year, do you have the ability to switch to another delivery model?

### Remote Questions

- How can you use virtual WBL platforms and other remote tools that connect students and industry partners and help students learn about work?
- Does your CTE program lend itself to virtual internships, apprenticeships or clinicals? Do you have industry partners who are in a position to support virtual interns or apprentices?
- How can you integrate WBL into the remote classroom through industry-driven projects or by transforming the remote classroom into a simulated business?
- How can you use simulations to enable students to practice employability skills in authentic workplace scenarios?

### Hybrid Questions

- How will scheduling decisions facilitate access to WBL experiences for all students?
- How can you design school-based WBL projects and activities to accommodate limited time on campus?
- If you are operating an SBE, how will you assign tasks to different groups of students as they rotate on and off campus?

# Facilities, Lab Areas, Equipment, & Materials

## Considerations

As mentioned in the section *Providing High-Quality CTE Instruction*, CTE programs are designed with hands-on experiences in mind and providing these experiences is a major concern for CTE educators. That said, accessing and utilizing CTE facilities, lab/shop areas, equipment, and materials during a COVID impacted school year will require additional protocols. Local CTE Educators must remain attentive to the alignment, appropriateness, and safety of the physical components of the program when considering the use of facilities and equipment during COVID impacted learning.

At the local level, CTE educators will need to consider:

- Setting up any in-person classrooms, labs and other facilities to ensure social distancing and safety.
- Cleaning and sanitizing facilities, equipment and technology used by students or staff and ensuring adequate personal protective equipment, as necessary.
- Providing access to technology, equipment and instructional materials to students engaged in remote learning.

## Instructional Approach

### In-Person

If nearly all students return to in-person learning:

- CTE programs will likely be required to adapt their classrooms and labs/shop areas to meet new state and local safety requirements and guidelines for social distancing. This may be accomplished with fewer desks or workstations that are six feet apart. CDC guidelines also recommend setting up desks so that learners are not facing each other, instead facing ahead. Where space does not allow for six-foot distancing, another option being explored by administrators is erecting clear Plexiglas barriers between students.
- Where weather permits, classes or labs could even occur outside. Similarly, learning that already takes place in the open air, such as on a farm or construction site operated by the institution or district, could likely continue.
- While some CTE programs already make use of individual workstations that are spaced for safety, classrooms and other laboratory or hands-on spaces that are more collaborative will be impacted by socially distanced layouts that discourage students from working in small groups in the same space.
- Another adaptation will be cleaning and safety protocols. CDC guidelines recommend frequent disinfection of high-touch surfaces with EPA recommended disinfectants. Individual teachers will likely bear at least some responsibility for cleaning and sanitizing within their classroom and lab spaces. Districts and schools are encouraged to discuss cleaning and sanitation methods with the local department of health.

- Districts and schools may consider assigning smaller equipment, tools and supplies to only one student to reduce the need for cleaning and the spread of germs. This will likely require purchasing more tools and supplies than usual.
- Requiring even more frequent handwashing or sanitizing than usual within labs and shared spaces will be an important preventative measure as well.
- Business partners may be able to recommend best practices on cleaning and safety protocols within specific industries. Another consideration is providing general personal protective equipment (PPE) to learners and staff, such as masks and gloves, as well as providing and cleaning occupation-specific PPE.
- Many CTE programs are replacing PPE that was donated to health care professionals during the pandemic in order to keep students and staff safe. Cost increases and high demand for these products, leading to back orders, will impact availability. Business and community partners may be able to donate some supplies, depending on their financial resources and capacity back to districts and schools.

## **Remote**

If instruction will take place all or mostly remotely:

- Districts and schools are encouraged to coordinate with partnering postsecondary institutions or businesses for lab-based activities. For instance, if a local community college is open while the high school campus is closed for in-person learning, individuals or groups of high school students may be able to schedule time in the college lab.
- CTE educators can supplement or replace hands-on and lab/shop based instruction through video, simulations and mobile labs, as well as at-home kits of materials. Several Tennessee districts have explored and are utilizing this strategy to increase access to instruction and hands-on skill development.
  - Virtual simulations can be an option for replacing access to lab equipment. For example, simulated patient interactions in health science, may be good alternatives for certain programs of study. Many simulation packages include both computer modules and physical equipment such as an extended reality (XR) helmet and stylus, or a mannequin arm. This equipment could be checked out to learners to use at home on a rotating basis. Any materials that are checked out will need to be disinfected before and after use.
  - If the district or institution allows it, mobile labs could offer learners the chance to practice hands-on skills in a contained space that can be disinfected and minimally staffed. These labs typically rotate among multiple schools, and could be used to supplement mostly remote instruction for students who need to complete in-person credentialing assessments.
    - These technology-heavy options require start-up costs, which may include physical components, software updates, maintenance and technical support, and access to high-speed internet. However, these costs can be shared among

districts and institutions.

- At-home kits of materials may include industry standard tools and equipment, the simulation tools described above or non-industry standard materials like cardboard in place of wood. Examples of kits sent home this spring include materials and tools for building Adirondack chairs; mannequin heads, color mixing bowls and hair clips; and ingredient kits for recipes.
  - Safety would be a paramount concern with these at home kits, and parent/guardian permission and oversight may be needed if there is any risk of injury.
- CTE educators could access to video technology to demonstrate hands-on techniques and students in a fully remote environment will also need access to online videos, modules, digital or print textbooks.
- When you are considering how to adapt facilities and equipment, remember that equitable access is a constant concern. Districts and schools across Tennessee reported issues during spring COVID related closures due to the availability of internet and connection quality. Districts and schools may need to explore other technology options, including low-tech experiences for remote learning to ensure all students can access CTE.

## Hybrid

If instruction will take place in a mostly hybrid learning environment:

- CTE educators will need to consider all of the above for both remote and in-person as students, as necessary.
- In the hybrid model, districts and schools should consider additional safety protocols for include cleaning between groups of students, ensuring student access to appropriate material usage both at home and on campus, and transporting tools or equipment between learning locations.
  - Many of these decisions will be heavily influenced by the blended model adopted. For example, if students are physically present every other day, and working remotely other days, all lab activities may be completed during class time, with no need for materials or equipment to be sent home with learners. Instead, students would need virtual access to the instructional materials discussed above, such as online modules, digital textbooks and software to complete assignments while learning remotely. However, if the blended approach does not provide enough time to complete hands-on activities in the lab, students may need remote access to equipment or technology, such as the simulations or at-home kits described above.

## Key Questions

### In-Person Questions

- How can furniture and equipment in labs be arranged so that students remain socially distanced during class time? If this cannot be accomplished, can you use clear barriers between workstations or even situate labs outside?
- How will you efficiently clean and sanitize classrooms, lab spaces and tools? Will learners be responsible for cleaning and sanitization before and/or after usage? How much time will you schedule for cleaning?
- How can you reduce the sharing of tools or equipment among students?
- Do you have enough PPE for staff and students? How will you restock supplies of PPE in time for classes to resume?

### Remote Questions

- Can learners access facilities and equipment through affiliated campuses, partner institutions, local union training centers or businesses for in-person, hands-on instruction?
- What equipment or technology do students need to practice applied skills remotely? Can that be accomplished using video, simulations or mobile labs? Could you band together with other districts or institutions for the start-up costs for simulators or mobile labs?
- Which instructional resources, such as online textbooks, modules or videos, can be made available online for students (assuming internet access issues have been addressed)? • Are there personal tools, supplies or manipulatives that could be made available to students learning from a distance? How will you distribute and collect, as well as sanitize, personal tools and supplies?
- How will safety concerns be addressed with personal tools and supplies used at home? What instructions/remote training will you provide?

### Hybrid Questions

- How will equipment and facilities be transported and deep cleaned between different groups of students?

For additional questions or concerns regarding the implementation of CTE during a COVID impacted school year, please contact your regional CTE CORE Consultant or [CTE.Questions@tn.gov](mailto:CTE.Questions@tn.gov).