



# CAREER AND TECHNICAL EDUCATION

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ISD 709 Duluth Public Schools  
Danette Seboe, CTE Coordinator  
February 2022

# PERKINS V

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*The Strengthening Career and Technical Education for the  
21st Century Act of 2018*

# PERKINS V

- Designed to improve and expand high-quality Career and Technical Education (CTE) programs that meet both student and employer needs.
- Maintains a strong focus on academic rigor in CTE programs, while also emphasizing development of technical skills and employability skills that prepare students to be career and college ready after graduation.
- Promotes stronger connections
  - Between secondary and postsecondary education through greater emphasis on Programs of Study (POS)
  - Between education and industry through greater emphasis on work-based learning (WBL) experiences and industry-recognized credentials.

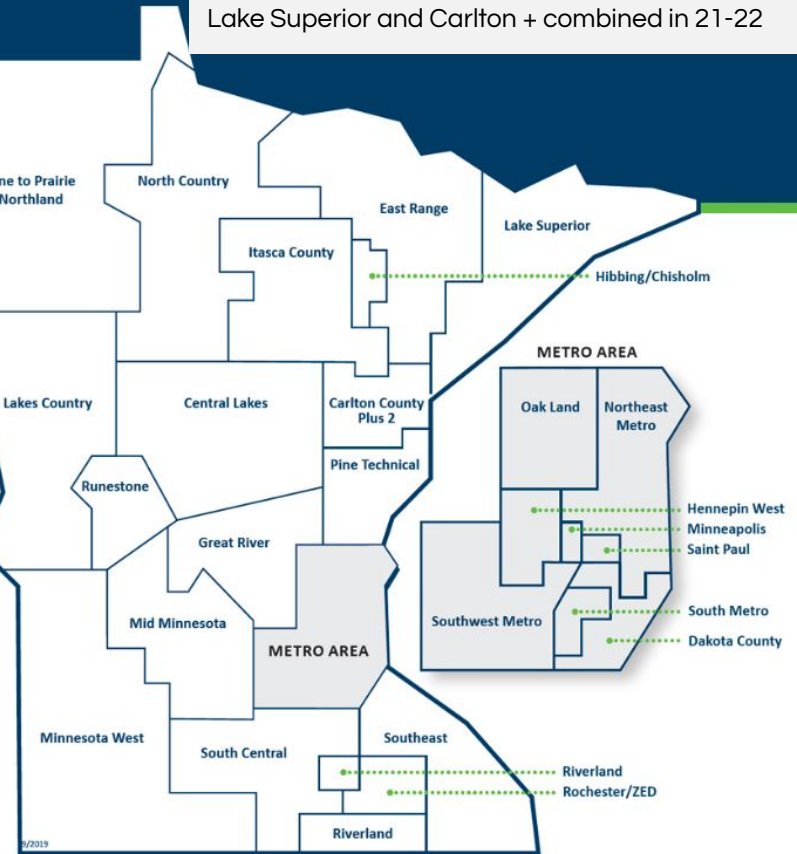
Implementation of Perkins V ensures that career and technical education programs are an integral part of a well-rounded secondary education, meeting the needs of students and educational systems as part of Minnesota's "Every Student Succeeds Act" (ESSA) plan.

# THE CONSORTIUM MODEL AND FUNDING

- Minnesota uses the consortium model of secondary and postsecondary partnerships to facilitate allocation of Perkins V federal grant funds
- Grant is intended to spur innovation and support programs of study aligned with high-skill, high-wage, or in-demand occupations or industries.
- In order to access Perkins grant funds, local school districts must have approved CTE programs taught by appropriately-licensed CTE teachers.
- As part of the development of consortia Perkins plans, each consortia conducts a Comprehensive Local Needs Assessment (CLNA) which guides the development of their two-year consortia plans and priorities.
- Perkins V funding is a complement/supplement to local resources. It does not fully fund programs!

## Perkins Consortia

Lake Superior and Carlton + combined in 21-22



# LAKE SUPERIOR CONSORTIUM

LEAH BOTT, NORTHERN SCHOOLS SECONDARY  
COORDINATOR

JILL MURRAY, SOUTHERN SCHOOLS (CARLTON +2)  
SECONDARY COORDINATOR, POST-SECONDARY  
COORDINATOR

## MEMBER SCHOOLS

BARNUM

DULUTH EAST

PROCTOR

CARLTON

ESKO

SILVER BAY

CLOQUET

FOND DU LAC

TWO HARBORS

COOK COUNTY

HERMANTOWN

WRENSHALL

CROMWELL-WRIGHT

MCGREGOR

DENFELD

MOOSE LAKE

LAKE SUPERIOR COLLEGE (LSC)

# WHAT IS CAREER AND TECHNICAL EDUCATION IN MINNESOTA?

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*The elements of high-quality CTE programs include:*

- **Standards-aligned and Integrated Curriculum:** development of CTE program curriculum and standards.
- **Integrated Network of Partnerships:** business and community partnerships to support CTE program alignment and success.
- **Course Sequencing and Credentials:** coordination of coursework progression in CTE programs and career pathways that lead to recognized postsecondary credentials.
- **Career-Connected Learning and Experiential Learning**
- **Industry-specific Facilities, Equipment, Technology and Materials**
- **Work-Based Learning (WBL):** firsthand, onsite student engagement opportunities in a given career field.
- **Data for Program Improvement and Advocacy**
- **Student Leadership Development:** leadership development through embedded classroom activities and Career and Technical Student Organization (CTSO) opportunities.
- **Access, Equity and Inclusion:** CTE program promotion and support for all student populations.
- **Student-Centered Instruction:** instructional strategies that support attainment of career-relevant knowledge and skills.
- **Professional Development for Knowledgeable Experts**



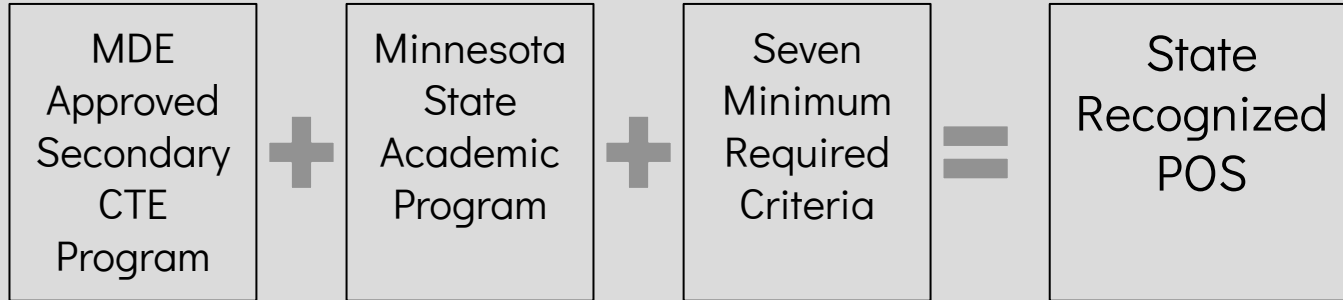
# COMPONENTS OF PROGRAMS OF STUDY





# COMPONENTS OF STATE-RECOGNIZED POS

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## The 7 Minimum Criteria:

1. **COURSE STANDARDS:** Aligned to academic, technical, and employability skills. Define what students are expected to know and be able to do to enter and advance in college and/or careers.
2. **INTEGRATED NETWORK OF PARTNERS:** Ongoing relationships among education, business, and diverse community stakeholders.
3. **MDE PROGRAM APPROVAL REQUIREMENTS MET:** Incorporate courses that lead to postsecondary credits/credentials. Appropriately licensed teachers, advisory committees, equitable student leadership opportunities, career exploration.
4. **POSTSECONDARY ACADEMIC PROGRAM:** Meets MN State Board and Higher Learning Commission requirements. Leads to the awarding of a degree, diploma, or certificate.
5. **MATERIALS, EQUIPMENT, AND RESOURCES:** Reflect current workplace, industry and/or occupational standards and practices for installation, use, maintenance, and safety.
6. **AUTHENTIC WORK EXPERIENCES:** Valued by industry, demonstrate progressive occupational learning aligned to industry workforce needs.
7. **COMPREHENSIVE LOCAL NEEDS ASSESSMENT (CLNA):** Systems and strategies for gathering, analyzing, and disseminating data. Supports Program of Study development, improvement, and advocacy.

# The CLNA Guides Improvement:

1. **SIZE:** Whether the program can adequately address student learning outcomes:
  - a. Number of students
  - b. Number of instructors
  - c. Number of courses
  - d. Available resources such as space, equipment, supplies
2. **SCOPE:** Alignment to
  - a. A clearly defined career pathway,
  - b. Workforce needs
  - c. Implementation of articulated/dual enrollment credits
  - d. Development of employability skills in addition to specific work based skills
3. **QUALITY:** A program must meet 2 of the following 3 criteria:
  - a. High skilled individuals
  - b. Individuals who are competitive for high wage jobs
  - c. Individuals who are trained for in-demand occupations



# LAKE SUPERIOR CONSORTIUM CLNA PRIORITY AREAS

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- 01 **MARKETING**  
BUILD AWARENESS OF CTE PROGRAMS AND CAREER OPPORTUNITIES THROUGHOUT CONSORTIUM AND/OR WITHIN INDIVIDUAL DISTRICTS
- 02 **HEALTHCARE AND MANUFACTURING**  
NEW AND INNOVATIVE WAYS TO DEVELOP AND IMPROVE THESE CAREER FIELDS THAT ARE THE HIGHEST WAGE, HIGHEST DEMAND IN THE REGION
- 03 **WORK BASED LEARNING**  
DEVELOPMENT OF AUTHENTIC CTE WBL PROGRAMS AND/OR ACTIVITIES  
*\*\*5% OF CONSORTIUMS' BASIC ALLOCATION HERE*
- 04 **COLLABORATION**  
CROSS-COLLABORATION BETWEEN DISCIPLINES AND/OR SCHOOLS
- 05 **SPECIAL POPULATIONS**  
IMPROVE SERVICES TO IND. W/BARRIERS, INCL. LIMITED ENGLISH PROF; ECON DISAD; HOMELESS. FOSTER CARE, PARENT ACTIVE DUTY  
*\*\*\*10% OF THE CONSORTIUM'S BASIC ALLOCATION HERE.*
- 06 **MATH AND READING**  
NEW AND INNOVATIVE WAYS TO INCORPORATE INSTRUCTION
- 07 **RECRUITMENT, RETENTION, AND TRAINING OF CTE EDUCATORS**

# FUNDING CTE: PREPARING STUDENTS TO ENTER HIGH-SKILL, HIGH-WAGE, HIGH DEMAND EMPLOYMENT IN MINNESOTA

## PERKINS V

Consortium grant applications annually:  
create or improve programs

## CTE LEVY

Districts eligible for levy  
equal to 35% of expenditures

## GENERAL FUNDS

Needed to fill the gap: CTE courses have high supply needs, equipment needs, and small class sizes

# ISD 709 PROGRAMS OF STUDY

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Duluth Public Schools Programs and Courses,

By the Numbers



# Minnesota Career Fields and Clusters

[Link to Full MN Career Fields, Clusters & Pathways Map](#)



Career Field:  
Engineering,  
Manufacturing, & Tech

Cluster:  
Science, Tech,  
Engin. & Math

Pathways:  
Science and  
Mathematics

Course	Length/Credits	Open to Grades	Approx Cost Per Section	Sections Run in 21-22	Students Enrolled in 21-22
Aerospace Physics	1 pd Year 1.0 cr	11-12	\$1250	6 year long EHS, 1 year long DHS	75E, 26D

*\*This course meets the science graduation requirement of 1.0 in Chemistry or Physics.*

Career Field:  
Agriculture, Food &  
Natural Resources

Cluster:  
Agriculture, Food &  
Natural Resources

Pathways:  
Natural Resource  
Systems, Plant Systems

Course	Length/Credit	Open to Grades	Approx Cost Per Section	Sections Run in 21-22	Students Enrolled in 21-22
Forestry, Fish, and Wildlife (at EHS)	Block Semester, 1.0 cr	10-12	\$560	1 (block) EHS	18E/3D=21
Plant Science - Greenhouse 1	Block Semester, 1.0 cr	10-12	\$1050	1 (block) EHS	17E
Plant Science - Greenhouse 2	Block Semester, 1.0 cr	10-12	tbd	0 (block would be stacked EHS)	0
Plant Science - Greenhouse 1 (1 hr) NEW at DHS	1 pd Semester, 0.5 cr	10-12	\$400	2 DHS	63D



Career Field:  
Engineering,  
Manufacturing, & Tech

Cluster:  
Transportation,  
Distribution, & Logistics

Pathways:  
Facility & Mobile  
Equipment Maint.

Course	Length/Credits	Open to Grades	Approx Cost Per Section	Sections Run in 21-22	Students Enrolled in 21-22
Automotive Basics: Brakes and Engines	Block Year 2.0 cr	9-12	\$375	1 (block) DHS	14E/11D=25
Automotive Basics: Transmissions and Suspensions	Block Year 2.0 cr	9-12	\$375	1 (block) DHS	8E/19D=27
Advanced Automotive	Block Year 2.0 cr	10-12	\$375	1 (block) DHS	4E/6D=10

\*Additional annual cost of \$3,900 for CDX

# ARTICULATED CREDIT AVAILABLE FOR AUTO:

ISD 709 Course	College	College Course Name	Articulated Credits	College Course #
Automotive Basics: Brakes and Engines AND Advanced Automotive	LSC	Automotive Shop Management	1	ASTE 1490
		Brakes	1	ASTE 2440
		Charging and Starting Systems	1	ASTE 1500
		Engine Service	1	ASTE 1450
	WITC	Automotive Brake Systems	1	32404375
		Automotive Fundamentals	2	32404375
Automotive Basics: Transmissions and Suspensions AND Advanced Automotive	LSC	Transmission Lab	1	ASTE 2460
		Automotive Shop Management 1	1	ASTE 1490
		Clutch and Differential	1	ASTE 2430
		Basic Engine Driveability	1	ASTE 2400
		Air Conditioning	1	ASTE 1410
	WITC	Automotive Fundamentals	2	32404375
		Suspension and Alignment	1	32404379



# AUTOMOTIVE CERTIFICATION AVAILABLE: ASE ENTRY LEVEL

The National Institute for Automotive Service Excellence (ASE) Entry-Level certification tests are designed to indicate a satisfactory level of practical knowledge-based readiness for the workforce in candidates seeking a career in the automotive service industry. ASE Entry-Level certification tests are available for the Automobile, Collision Repair/Refinish and M/H Truck segments (series). ASE Entry-level certification is the first step in building career credentials as an automotive service professional.

Career Field:  
Business, Management  
& Administration

Clusters:  
Bus. Mgmt & Admin,  
Marketing, Finance

Pathways:  
Marketing,  
Merchandising, Acct.

Course	Length/Credits	Open to Grades	Approx Cost Per Section	Sections Run in 21-22	Students Enrolled in 21-22
Business and Personal Finance	1 pd Semester 0.5 cr	10-12	\$200	3 EHS, 2 DHS	98E/100D
Introduction to Marketing and Business	1 pd Semester 0.5 cr	9-12	\$250	4 EHS, 2 DHS	132E/100D
Sports and Entertainment Marketing	1 pd Semester 0.5 cr	9-12	\$200	2 EHS, 1 DHS	54E/21D
Business Mgmt, Leadership, and Coaching	1 pd Semester 0.5 cr	9-12	\$200	0	0
Starting Your Own Business	1 pd Semester 0.5 cr	9-12	\$300	1 EHS, 0 DHS	32E/0D

# ARTICULATED CREDITS AVAILABLE FOR BUSINESS:

ISD 709 Course	College	College Course Name	Articulated Credits	College Course #
Introduction to Marketing	LSC	Principles of Marketing	3	BUS 2400
Business and Personal Finance	LSC	Personal Finance (*Pending)	3	ACCT 1500

Career Field:  
Human Services

Clusters:  
Human Services,  
Education & Training

Pathways:  
Early Childhood,  
Teaching/Training

Course	Length/Credits	Open to Grades	Approx Cost Per Section	Sections Run in 21-22	Students Enrolled in 21-22
Child Development/ Child Psychology	1 pd Semester 0.5 cr	9-12	TBD	0	0
Early Childhood and Education Professions	Block Semester 1.0 cr	10-12	TBD	0	0

*\*Instructor on leave 21-22*

Career Field:  
Engineering,  
Manufacturing, & Tech

Cluster:  
Architecture and  
Construction

Pathways:  
Construction

Course	Length/Credits	Open to Grades	Approx Cost Per Section	Sections Run in 21-22	Students Enrolled in 21-22
Construction Technology 1	Block Year 2.0 cr	9-12	\$2300	3 (blocks) EHS	27E/13D=20
Construction Technology 2	Block Year 2.0 cr	10-12	\$2300	1 (block stacked) EHS	7E/16D=23
Construction Technology 3	Block Year 2.0 cr	11-12	\$2300	1 (block stacked) EHS	3E/7D=10

# ARTICULATED CREDIT AVAILABLE FOR CONSTRUCTION:

ISD 709 Course	College	College Course Name	Articulated Credits	College Course #
Construction Technology 1	LSC	Carpentry Framing Lab	1	CARP 1412
		Roof Covering	1	CARP 1416
		Carpentry Exterior Lab 1	1	CARP 1510
Construction Technology 2	LSC	Carpentry Framing Lab	1	CARP 1412
		Roof Covering	1	CARP 1416
		Carpentry Exterior Lab 1	1	CARP 1510
Construction Technology 3	LSC	Carpentry Framing Lab	1	CARP 1412
		Roof Covering	1	CARP 1416
		Carpentry Exterior Lab	1	CARP 1510



## Career Field: Engineering, Manufacturing, & Tech

## Cluster: Architecture and Construction

## Pathways: Construction

Course	Length/Credits	Open to Grades	Approx Cost Per Section	Sections Run in 21-22	Students Enrolled in 21-22
\$7,500 x 2 (annual Solidworks per school)					
Principles of Engineering	1 pd Sem / 0.5 cr	9-12	\$560	3 EHS, 2 DHS	47E, 33D
Sustainable Design	1 pd Sem / 0.5 cr	10-12	\$150	2 EHS, 0 DHS (stacked)	3E, 0D
Weldments	1 pd Sem / 0.5 cr	10-12	\$150	2 EHS, 0 DHS (stacked)	3D, 0D
Simulation: Finite Element Analysis	1 pd Sem / 0.5 cr	10-12		2 EHS, 1 DHS (stacked)	6E, 6D
Additive Manufacturing	1 pd Sem / 0.5 cr	10-12		0 EHS, 1 DHS (stacked)	0E, 2D
Advanced Eng Design I and II (CAD III and CAD IV)	1 pd Sem / 0.5 cr	10-12		1 EHS, 1 DHS (stacked)	1E, 5D
Advanced Ind Engineering Research and Design	1 pd Sem / 0.5 cr	11-12	\$150	0 EHS, 1 DHS (stacked)	0E, 5D
Fab Lab I and Fab Lab II	1 pd Sem / 0.5 cr	10-12		0	0
Manufacturing Technologies I and II	1 pd Sem / 0.5 cr	9-12	\$2,500	I: 1 EHS, 2 DHS / II: 1 EHS, 1 DHS	I: 22D, 49D / II: 22E, 19D
Advanced Manuf Technologies III	1 pd Sem / 0.5 cr	10-12	\$1,500	0	0
CAD for Architecture I and II	1 pd Sem / 0.5 cr	9-12		I: 1 EHS, 0 DHS / II: 1 EHS, 0 DHS	I: 23E, 0D / II: 24E, 0D
Advanced Ind Architecture Research and Design	1 pd Sem / 0.5 cr	9-12	\$150	2 EHS, 0 DHS (stacked)	2E, 0D

# ARTICULATED CREDIT AVAILABLE FOR ENGINEERING:

ISD 709 Course	College	College Course Name	Articulated Credits	College Course #
Introduction to Engineering and Design AND Advanced Engineering and Design	LSC	Prototyping Processes	3	INMG 145
		Advanced Manufacturing Technologies 1 (Denfeld Only)	3	WLDG 1560



# SOLIDWORKS CERTIFICATIONS AVAILABLE

- CSWA-E: Associate - Electrical
- CSWA-S: Associate - Simulation
- CSWP-CAM: Professional - CAM
- CSWP-MBD: Professional - MBD
- CSWP-S: Professional - Simulation
- CSWPA-DT: Professional Advanced - Drawing Tools
- CSWPA-MM: Professional Advanced - Mold Making
- CSWA-SD: Associate - Sustainability
- CSWP: Professional - SolidWorks FULL Exam
- CSWPA-WD: Professional Advanced: Weldments
- CSWA: Associate - SolidWorks FULL
- CSWA-AM: Associate - Additive Manufacturing
- CSWPA-SM: Professional Advanced - Sheet Metal
- CSWPA-SU: Professional Advanced - Surfacing

Career Field:  
Arts, Communications,  
& Information Systems

Clusters:  
Arts, AV Tech, and  
Communication

Pathways:  
Printing Technology,  
Visual Arts

Course	Length/Credits	Open to Grades	Approx Cost Per Section	Sections Run in 21-22	Students Enrolled in 21-22
Graphic Arts I	1 pd Year 1.0 cr	9-12	\$5300 (annual Adobe)	3 EHS, 2 DHS	64E, 42D
Graphic Arts II	1 pd Year 1.0 cr	10-12		2 EHS, 2 DHS (stacked)	7E, 3D
Graphic Arts III	1 pd Year 1.0 cr	11-12		2 EHS, 0 DHS (stacked)	2E, 0D

Career Field:  
Health Science  
Technology

Clusters:  
Health Science

Pathways:  
Support Services,  
Therapeutic Services

Course	Length/Credits	Open to Grades	Approx Cost Per Section	Sections Run in 21-22	Students Enrolled in 21-22
Emergency Medical Responder	1 pd Semester 0.5 cr	11-12	\$500	1 EHS, 1 DHS	19E, 16D
CITS Medical Occupations	Block Semester 1.0 cr	11-12	\$1000	1 Block EHS, 1 Block DHS	24E, 11D
CITS Intro to Nursing / Home Health	Block Semester 1.0 cr	11-12	\$1000	1 Block EHS, 1 Block DHS	20E, 10D

# ARTICULATED CREDIT AVAILABLE FOR HEALTHCARE

ISD 709 Course	College	College Course Name	Articulated Credits	College Course #
Emergency Medical Responder	LSC	First Aid & CPR/AED for Healthcare Professionals	1	ALTH 1430
<i>Completion of EMR Testing</i>	LSC	EMS First Responder	3	FIRE 1556
<i>AHA Heartsaver passed but not EMR</i>		Basic Life Support for Emergency Service Providers	1	FIRE 1560

## DUAL ENROLLMENT (TRANSCRIPTED) CREDIT:

ISD 709 Course	College	College Course Name	COLLEGE CREDITS	College Course #
CITS Medical Occupations	LSC	Intro to Allied Health	2	ALTH 1400
		Medical Terminology	1	ALTH 1410
CITS Intro to Nursing / Home Health	LSC	Nursing Assistant / Home Health Aide	4	NUNA 1420

Career Field:  
Business, Management  
& Administration

Clusters:  
Hospitality and  
Tourism

Pathways:  
Restaurants and  
Food/Beverage Serv.

Course	Length/Credits	Open to Grades	Approx Cost Per Section	Sections Run in 21-22	Students Enrolled in 21-22
Introduction to Cooking	1 pd Semester 0.5 cr	9-12	\$5000	4 EHS, 4 DHS	104E/120D
Restaurant Industry Level 1	Block Semester 1.0	9-12	\$26,375	0 EHS, 4 DHS	0E/97D
Restaurant Industry Level 2	Block Semester 1.0	10-12	(w/Lvl1)	0 EHS, 2 DHS	0E/39D
Classical Line Cooking	Block Semester 1.0	9-12	\$27,000	0	0
Classical Cooking	Block Semester 1.0	9-12	0	0	0
Restaurant Management	Block Semester 1.0	10-12	0	0	0
Waiter/Waitress	Block Semester 1.0	9-12	\$1500	0	0

# WHAT DO WE NEED?

*CTE AND DISTRICT STAFF ARE WORKING TOGETHER TO INCREASE CLARITY AND IMPROVE STRUCTURES AROUND:*

## REALISTIC SUPPLY BUDGETS

Clarifying needs so that sections can be planned and budgets allocated prior to the new school year

## STAFF SUPPORT

Posting early to meet requirements, completing paperwork for licensing in spring so staff are ready to go by August, MNACTE membership and PD

## REPAIR/REPLACEMENT BUDGETING

We need to plan ahead with a budget that accrues so we are prepared when expensive and critical equipment needs repair or replacement



# CTE WORKS!

Helping All Minnesotans Achieve Their Career and College Aspirations.

**247,970**

COMBINED NUMBER  
OF SECONDARY  
AND POSTSECONDARY STUDENTS  
enrolled in career and technical  
education (CTE) courses in 2019

SECONDARY

**92%**

4-year graduation  
rate for all CTE  
concentrators.

(Students who completed  
240 CTE course hours  
within one career field)

**65%**

CTE concentrators  
who graduated  
and go on to  
postsecondary.

POSTSECONDARY

**80%**

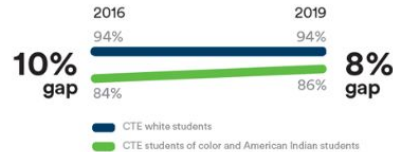
CTE concentrators  
who graduated or  
continued their  
education.

**86%**

Students placed  
or retained in  
employment.

(By the end of the 2nd  
quarter following the year  
they completed a CTE  
program)

4-year graduation gaps are closing  
for CTE secondary students



Meeting workforce needs in 2020



Percent of jobs that will  
require postsecondary  
education and training  
beyond high school.