



Ontario
College of
Teachers

Ordre des
enseignantes et
des enseignants
de l'Ontario

Additional Qualification Course Guideline Teaching Transportation Technology - Truck and Coach

Schedule F Teachers' Qualifications Regulation

February 2015

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Additional Qualification Course Guideline

1. Introduction

The guideline for Teaching Transportation Technology - Truck and Coach is organized using the following framework.



Diagram 1: Guideline Organization

Teachers are able to take the Additional Qualification course: Teaching Transportation Technology - Truck and Coach if they hold a technological education qualification at Grades 9 and 10 or Grades 11 and 12 in the broad-based area of Teaching Transportation Technology.

The Additional Qualification Course: Teaching Transportation Technology - Truck and Coach employs a critical, pedagogical lens to explore in holistic and integrated manner theoretical foundations, development of learners, program planning and implementation, instructional practices, assessment and evaluation, the learning environment and ethical considerations related to teaching and learning.

The Ontario College of Teachers recognizes that candidates working in the publicly funded school system, independent/private institutions or First Nations schools will have a need to explore topics and issues of particular relevance to the context in which they work or may work.

Critical to the implementation of this course is the creation of positive learning experiences that reflect care, diversity and equity. This course supports the enhancement of professional knowledge, ethical practice, leadership and ongoing learning.

The French language and the English language communities will also need to implement these guidelines to reflect the unique contextual dimensions and needs of each community. Each of these language communities will explore the guideline content from distinct perspectives and emphasis. This flexibility will enable both language communities to implement Teaching Transportation Technology - Truck and Coach as understood from a variety of contexts.

The Teaching Transportation Technology - Truck and Coach additional qualification course guideline provides a conceptual framework for providers and instructors to develop and facilitate the Teaching Transportation Technology - Truck and Coach course. The guideline framework is intended to be a fluid, holistic and integrated representation of key concepts associated with Teaching Transportation Technology - Truck and Coach.

2. Regulatory Context

The College is the self-regulating body for the teaching profession in Ontario. The College's responsibility related to courses leading to additional qualifications includes the following:

- to establish and enforce professional standards and ethical standards applicable to members of the College
- to provide for the ongoing education of members of the College
- to accredit additional qualification courses or programs and more specifically,

The program content and expected achievement of persons enrolled in the program match the skills and knowledge reflected in the College's Standards of Practice for the Teaching Profession and the Ethical Standards for the Teaching Profession and in the program guidelines issued by the College.

(*Accreditation of Teacher Education Programs Regulation, Part IV, Subsection 24*).

Additional qualifications for teachers are identified in the *Teachers' Qualifications Regulation*. This regulation includes courses/programs that lead to Additional Qualifications, the Principal's Qualifications and the Supervisory Officer's Qualifications. A session of a course leading to an additional qualification shall consist of a minimum of 125 hours as approved by the Registrar. Accredited additional qualification courses reflect the *Ethical Standards for the Teaching Profession*, the *Standards of Practice for the Teaching Profession* and the *Professional Learning Framework for the Teaching Profession*.

The course developed from this guideline is open to candidates who meet the entry requirements identified in the *Teachers' Qualifications Regulation*.

Successful completion of the course leading to the Additional Qualification: Teaching Transportation Technology - Truck and Coach, listed in Schedule F of the *Teachers' Qualifications Regulation* is recorded on the Certificate of Qualification and Registration. Successful completion of three schedule F courses within a specific broad-based technology area will be deemed to be equivalent to one specialist or honour specialist qualification for purposes of entry into the principal's qualification or the supervisory officer qualification. (O. Reg. 176/10 S.49 (4) and (5))

In this document, all references to candidates are to teachers enrolled in the additional qualification course. References to students indicate those enrolled in school programs.

3. Foundations of Professional Practice

The *Foundations of Professional Practice* conveys a provincial vision of what it means to be a teacher in Ontario. This vision lies at the core of teacher professionalism. The *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession* (Appendix 1) are the foundation for the development and in the realization of the Additional Qualification course. These nine standards, as principles of professional practice, provide the focus for ongoing professional learning and are the foundation for the development and implementation of the Additional Qualification Course: Teaching Transportation Technology - Truck and Coach. In addition, the

Professional Learning Framework for the Teaching Profession is underpinned by the standards, articulates the principles on which effective teacher learning is based and acknowledges a range of options that promote continuous professional learning. The ongoing enhancement of informed professional judgment, which is acquired through the processes of lived experience, inquiry, and reflection, is central to the embodiment of the standards and the Professional Learning Framework within this AQ course and professional practice.

The *Ethical Standards of the Teaching Profession* and the *Standards of Practice for the Teaching Profession* serve as guiding frameworks that underpin professional knowledge, skills and experiences that teachers require in order to teach effectively within and contribute to an environment that fosters *respect, care, trust and integrity*.

Teacher-Education Resources

The College has developed resources to support the effective integration of the standards within Additional Qualification courses and programs. These teacher education resources explore the integration of the standards within professional practice through a variety of educative, research and inquiry-based processes. This guideline has been designed to reflect the *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession* and the *Professional Learning Framework for the Teaching Profession*. These resources can be found on the College web site (www.oct.ca). These resources support the development of professional knowledge and professional judgment through reflective practice. The lived experiences of Ontario educators are illuminated in the resources and serve as AQ course support for teacher education.

4. Conceptual Framework

The design, course content and implementation of the Additional Qualification Course Guideline: Teaching Transportation Technology - Truck and Coach support effective teacher education practices. These course guideline components provide a conceptual framework for the development of a holistic, integrated, experiential and inquiry-based course. The following conceptual framework supports and informs professional knowledge, judgment and practices within the Additional Qualification Course: Teaching Transportation Technology - Truck and Coach.

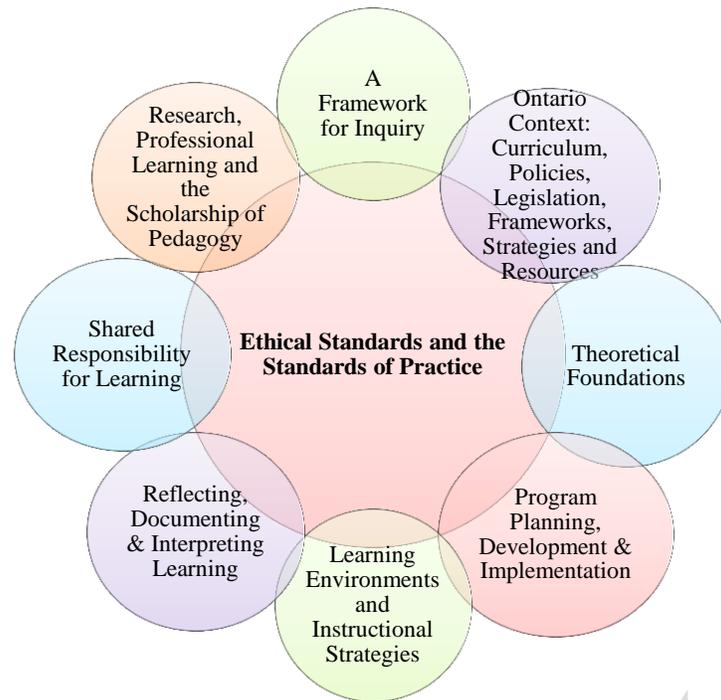


Diagram 2: Conceptual Framework for Teaching Transportation Technology - Truck and Coach

A. The *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession*:

The *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession* represent a collective vision of professional practice. At the heart of a strong and effective teaching profession is a commitment to students and their learning. Members of the Ontario College of Teachers, in their position of trust, demonstrate responsibility in their relationships with students, parents, guardians, colleagues, educational partners, other professionals, the environment and the public.

The holistic integration of the standards within all course components supports the embodiment of the collective vision of the teaching profession that guides professional knowledge, learning, and practice. The following principles and concepts support this holistic integration within the AQ course.

- understanding and embodying care, trust, respect and integrity

- fostering commitment to students and student learning
- integrating professional knowledge
- enriching and developing professional practice
- supporting leadership in learning communities
- engaging in ongoing professional learning.

Through professional dialogue, collaborative reflection and an ethical culture, course candidates will continue to critically inquire into and refine professional practice and ethical culture through the lens of the *Standards of Practice for the Teaching Profession*.

B. A Framework for Inquiry

The *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession* are embedded throughout the Additional Qualification course guideline.

This Additional Qualification course supports critical reflective inquiry and dialogue informed by the following:

- analyzing, interpreting and implementing Ontario's curriculum, district school board policies, frameworks, strategies and guidelines related to the Broad Based Technology
- developing awareness of First Nations, Métis and Inuit ways of knowing and perspectives
- extending theoretical understanding to design, implement and assess practices and/or programs
- implementing pedagogical strategies and assessment and evaluation practices that are linked to expectations, meet the individual needs of students, and promote student learning
- creating holistic learning environments conducive to the intellectual, social, emotional, physical, linguistic, cultural, spiritual and moral development of students
- working collaboratively with school personnel, parents/guardians, caregivers, the community, local business and industry as it relates to Teaching Transportation Technology - Truck and Coach

- exercising leadership in accessing a variety of resources, including technological resources, within and beyond the educational system to enhance and support student learning
- refining professional practice through ongoing collaborative inquiry, dialogue and reflection
- modelling ethical practices and addressing ethical issues
- critically exploring and integrating environmentally sustainable practices
- fostering responsible, active environmental citizenship
- collaboratively developing and sustaining professional learning communities for enhancing professional knowledge and supporting student learning
- fostering leadership in the integration of information and communication technology to enhance teaching and learning
- critically exploring innovative strategies to create and sustain safe, healthy, equitable and inclusive learning environments that honour and respect diversity and foster student learning
- understanding the importance of critically examining qualitative and quantitative research related to professional practice
- critically exploring strategies to understand, gain insight into and support learners' well-being and mental health needs
- working collaboratively with interdisciplinary school teams to develop and implement Individual Education Plans (IEPs) of students
- exploring strategies that contribute to a culture that promotes openness to innovation and change
- demonstrating an awareness of emerging technologies related to Teaching Transportation Technology - Truck and Coach
- demonstrating an awareness of health and safety risks associated with Teaching Transportation Technology - Truck and Coach
- applying knowledge and skills to create and maintain a safe learning environment that addresses program needs: curriculum, material handling, tool handling and equipment storage, supervision, safety standards and practices that are respectful of the environment
- demonstrating technological literacy related to Teaching Transportation Technology - Truck and Coach

- writing technical reports and creating and managing portfolios
- demonstrating mathematical literacy in Teaching Transportation Technology - Truck and Coach
- demonstrating an understanding of business management and entrepreneurial practices related to Teaching Transportation Technology - Truck and Coach
- inquiring into practice through reflection, active engagement and collaboration
- enhancing awareness of holistic learning environments
- understanding the various professional practices and career opportunities in Teaching Transportation Technology - Truck and Coach
- critically exploring the relationship between education, mental health and well-being
- identifying ways to modify expectations, instructional strategies and assessment practices in Teaching Transportation Technology - Truck and Coach.

C. Ontario Context: Curriculum, Policies, Legislation, Frameworks, Strategies and Resources

The Additional Qualification Course: Teaching Transportation Technology - Truck and Coach is aligned with current Ontario curriculum, relevant legislation, government policies, frameworks, strategies and resources. These documents inform and reflect the development and implementation of the Additional Qualification Course: Teaching Transportation Technology - Truck and Coach and can be viewed at www.edu.gov.on.ca.

Course candidates are also encouraged to critically explore the policies, practices and resources available at school and board levels that inform teaching and learning related to Teaching Transportation Technology - Truck and Coach.

D. Theoretical Foundations of Teaching Transportation Technology - Truck and Coach

- understanding theories of student development (social, emotional, physical, intellectual, linguistic, cultural, spiritual and moral)

- understanding Ontario curriculum, resources and government policies, frameworks and strategies related to Teaching Transportation Technology - Truck and Coach
- understanding learning theories and the particular learning needs of the adolescent in the Intermediate and Senior Divisions
- critically exploring a variety of conceptual frameworks related to Teaching Transportation Technology - Truck and Coach
- reflecting on teaching practice and engaging in professional dialogue regarding the relationship between theory and practice
- integrating the *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession* as the foundation for teacher professionalism within the Additional Qualification Course: Teaching Transportation Technology - Truck and Coach
- critically exploring the significance of relevant legislation including the Ontario Human Rights Code, Ontarians with Disabilities Act, and the Accessibility for Ontarians with Disabilities Act (AODA) and associated responsibilities within professional practice
- recognizing teachers' legal obligations and ethical responsibilities according to current provincial legislation
- critically inquiring into the dimensions associated with creating and sustaining safe learning environments
- critically exploring holistic and inclusive educational programs that build on learners' abilities and empower them to reach their learning goals
- critically exploring problem solving processes, methods and approaches as they relate to Teaching Transportation Technology - Truck and Coach
- critically exploring the fundamental technological concepts in Teaching Transportation Technology - Truck and Coach.

E. Program Planning, Development and Implementation

- applying the *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession* to inform a program planning framework

- critically exploring the influence of society's diverse and changing nature on student learning and well-being
- deepening understanding of program planning, development, implementation strategies and frameworks related to Teaching Transportation Technology - Truck and Coach
- deepening understanding of differentiated instruction, universal design and the tiered approach in program planning, development and implementation
- critically exploring learning resources (for example, print, visual, digital) that support student learning
- understanding the types of secondary school pathways (including apprenticeship, college, university, workplace) and their relationship to students' post-secondary goals and career opportunities
- critically exploring how students' lived experiences, development, strengths, interests and needs can inform program planning, development and implementation
- integrating culturally responsive pedagogy within program planning and development
- critically exploring strategies that support learners' well-being and mental health needs
- planning instructional strategies that integrate students' learning styles, strengths and experiences
- demonstrating leadership in implementing local and provincial guidelines and policies that support safe and effective learning environments
- inspecting and reporting on the learning environment, facilities, equipment needs, resources and state of maintenance and repair for delivering Teaching Transportation Technology - Truck and Coach
- applying the theoretical foundations of Teaching Transportation Technology - Truck and Coach by incorporating the broad-based pedagogical approach that embeds problem solving and the fundamental technological concepts
- identifying the safe, ethical and legal use of technology in Teaching Transportation Technology - Truck and Coach programs
- critically exploring and integrating multiple formal and informal assessment methods and data to inform program planning and support student learning.

F. Learning Environments and Instructional Strategies

- creating and sustaining positive, ethical, equitable, accepting and safe learning environments
- critically exploring strategies for fostering a collaborative community of empowered learners
- fostering engaging, trusting and inviting learning environments that promote student voice, leadership, critical inquiry and self-regulation
- critically exploring a variety of instructional strategies to support student learning
- developing strategies to create a positive and collaborative learning environment to support student learning
- cultivating safe, ethical and respectful practices in the use of technology in purposeful and legal ways
- integrating information and communication technologies that support student learning
- providing leadership in adapting instruction to meet the needs of all learners
- critically exploring strategies that engage students as active citizen in supporting environmental, social and economic sustainability
- using pedagogies that reflect the professional identity of educators as described in the *Ethical Standards for the Teaching Profession* and the *Standards of Practice for the Teaching Profession* and in the *Foundations of Professional Practice*
- creating inclusive learning environments that reflect the ethical standards and standards of practice
- implementing safe and effective management of a variety of technical learning environments
- planning, organizing and implementing effective health, safety, sanitation and environmental standards in the Teaching Transportation Technology - Truck and Coach facility
- demonstrating an understanding of facility design and maintenance practices as per industry standards

- understanding and complying with workplace health and safety legislation and standards related to Teaching Transportation Technology - Truck and Coach.

G. Reflecting, Documenting and Interpreting Learning

- collaboratively integrating fair and equitable, transparent, valid and reliable assessment and evaluation methods that honour the dignity, emotional wellness and cognitive development of all students
- critically exploring and collaboratively integrating assessment, evaluation and reporting practices that align with the principles and processes of Ontario's curriculum, frameworks and policy documents
- using assessment for the following three purposes: to provide feedback to students and to adjust instruction (assessment for learning); to develop students' capacity to be independent, autonomous learners (assessment as learning); to make informed judgements about the quality of student learning (assessment of learning)
- critically exploring the use of baseline data as well as current assessment data to reflect on how the students are progressing and the effectiveness of the learning strategies used.

H. Shared Responsibility for Learning

- critically exploring and collaboratively integrating a variety of effective communication and engagement strategies for authentic collaboration with parents/guardians, school/board personnel and community agencies
- critically exploring and engaging in strategies and opportunities for professional collaboration that supports student learning and well-being
- collaboratively designing programs that address biases, discrimination and systemic barriers in order to support student learning, well-being and inclusion
- fostering and sustaining a positive, inclusive educational culture in which all perspectives are encouraged, valued and heard
- understanding and respecting the importance of shared responsibility and partnership as conveyed in the standards and the Foundations of Professional Practice

- developing strategies to establish links between the school community, industry and the Teaching Transportation Technology - Truck and Coach program
- critically exploring sector-specific learning opportunities in other curriculum areas
- critically exploring professional collaboration within interdisciplinary teams to support student learning, self-advocacy and transitions.

I. Research, Professional Learning and the Scholarship of Pedagogy

- critically exploring past, present and evolving practices in Teaching Transportation Technology - Truck and Coach
- critically exploring professional practice through ongoing inquiry into theory and pedagogy/andragogy
- engaging in professional learning through research, scholarship and leadership
- integrating research and the scholarship of pedagogy/andragogy into teaching practice
- collaborating in research and the scholarship of pedagogy/andragogy
- critically exploring knowledge-creation and mobilization as professional practice.

5. Instructional Practice in the Additional Qualification Course: Teaching Transportation Technology - Truck and Coach

Candidates will collaboratively develop with course instructors the specific learning inquiries, learning experiences, and forms of assessment and evaluation that will be used throughout the course.

In the implementation of this Additional Qualification course, instructors use strategies that are relevant, meaningful and practical in providing candidates with learning experiences about instruction, pedagogy and assessment and evaluation. These include but are not limited to: experiential learning, small group

interaction; action research; presentations; independent inquiry; problem solving; collaborative learning and direct instruction.

Instructors model the *Ethical Standards of the Teaching Profession* and the *Standards of Practice for the Teaching Profession*, honour the principles of adult learning, recognize candidates' experience and prior learning and respond to individual needs. Important to the course are opportunities for candidates to create support networks and receive feedback from colleagues and instructors and share the products of their learning with others. Opportunities for professional reading, reflection, dialogue and expression are also integral parts of the course.

Instructors model effective instructional and assessment strategies that can be replicated or adapted in a variety of classroom settings.

A. Experiential Learning

Candidates will be provided with opportunities to engage in experiential learning related to key concepts and aspects of Teaching Transportation Technology - Truck and Coach as collaboratively determined by both the instructor and course candidates. The intent of the experiential learning opportunities is to support the application and integration of practice and theory within the authentic context of teaching and learning. Candidates will also engage in critical reflection and analysis of their engagement in experiential learning opportunities related to Teaching Transportation Technology - Truck and Coach. The professional judgment, knowledge and pedagogy of candidates will be enhanced and refined through experiential learning and inquiry.

The College's standards resources help to support experiential learning through various forms of professional inquiry.

6. Assessment and Evaluation of Candidates

At the beginning of the course, candidates will collaboratively develop with course instructors the specific learning inquiries, learning experiences, and forms of assessment and evaluation that will be used throughout the course. Instructors will provide opportunities for regular feedback regarding candidates' progress throughout the course.

A balanced approach to candidate assessment and evaluation is used. It includes the combination of candidate self and peer assessment, as well as instructor evaluation. The assessment and evaluation strategies reflect effective, collaborative and inquiry-based practices. A variety of assessment approaches will be used that enable candidates to convey their learning related to course inquiries. The course provides opportunities for both formative and summative assessment and evaluation.

Central to candidates enrolled in Additional Qualification courses is the opportunity to be engaged in relevant and meaningful inquiries. Assignments, artefacts and projects enable candidates to make connections between theory and practice. At the same time, assignments must allow candidates flexibility, choice and individual inquiry opportunities.

Part of the evaluation process may include a major independent project or action research component over the duration of the course. This project is an opportunity for candidates to illustrate a high level of professional knowledge, communication skills, pedagogy, ethical practices and instructional leadership. Similarly, if a portfolio assignment is used it will also include reflections and analysis of a candidate's learning over time.

A final culminating experience in the course is recommended. This experience may take the form of a written assessment, a research paper, a performance, an inquiry project or a product that is original, meaningful and practical.

The following list of assessment strategies which are reflective of experiential learning is not exhaustive; it is intended to serve as a guide only.

- a) Performance assessment: designing a sample unit which includes a culminating activity and appropriate assessment and evaluation tools, incorporates a variety of technologies and resources relevant to the study of Teaching Transportation Technology - Truck and Coach, and is based on Ministry of Education expectations
- b) Written assignment: reflecting critically on issues arising from articles, publications, research and/or other resources related to the teaching or practice to Teaching Transportation Technology - Truck and Coach
- c) Presentation: developing a digital story, presenting an issue related to the teaching and learning related to Teaching Transportation Technology - Truck and Coach

- d) Portfolio: creating a portfolio of practical resources, artefacts, photographs and recording critical reflections for one or several components related to Teaching Transportation Technology - Truck and Coach
- e) Action research: engaging in action research by reflecting and acting upon a specific inquiry into teaching practice related to Teaching Transportation Technology - Truck and Coach
- f) Independent project: addressing any aspect of the course that is approved by the instructor
- g) Instructional resource: developing a meaningful resource that will support instruction and pedagogy related to the teaching and learning of Teaching Transportation Technology - Truck and Coach
- h) Reflective writing: reflecting on professional practice through journal-writing, or writing a case or vignette that will support instruction and pedagogy related to the teaching and learning of Teaching Transportation Technology - Truck and Coach
- i) Case inquiry: writing or exploring a case related to collaboration and shared partnerships, with parents, colleagues, and community organizations
- j) IEP development: collaboratively develop an IEP related to Teaching Transportation Technology - Truck and Coach with the family, student and school team
- k) Facilitating a Learning Experience: developing and implementing an engaging learning experience that reflects differentiated instruction and universal design and the tiered approach.

7. Demonstrated Knowledge and Skill in Teaching Transportation Technology - Truck and Coach

Successful candidates will be able to demonstrate technical knowledge and skill in the following:

	Transportation Technology Fundamentals	Transportation Technology Skills
Understanding Engines:	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Basic operation of the engine including the two and four stroke engines (for example, Intake, compression, power, exhaust). • Basic operation of the diesel engine found in various makes (for example, Detroit Diesel, Cumming, Detroit, International, General Motors, Volvo, Mercedes, Caterpillar, Packer). • Construction and design of the diesel engine when comparing manufacturers (for example, Detroit Diesel, Cumming, Detroit, International, General Motors, Volvo, Mercedes, Caterpillar, Packer). • Engine maintenance techniques and service procedures pertaining to the manufacturer recommendations (injector service, valve lash adjustment). • Proper use of measurement tools (for example, micrometer, torque wrench) used in diesel 	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Troubleshooting and problem solving skills to correctly diagnose engine faults (for example, engine noise, engine overheating). • Manufacturer recommendations for proper engine maintenance procedures (for example, oil change, valve lash adjustment). • Interruption of measurement readings to determine engine component conditions (for example, crankshaft run out, cylinder taper). <p>Be able to demonstrate:</p> <ul style="list-style-type: none"> • Proper diagnostic and repair techniques in the disassembling and reassembling of diesel vehicles (for example, remove oil pan, remove engine crankshaft). • Proper testing and servicing procedures for cylinder heads, valve trains, and related components following

	Transportation Technology Fundamentals	Transportation Technology Skills
	<p>engine assembly.</p> <ul style="list-style-type: none"> • Forced air induction systems and operations (for example, turbochargers, twin turbo, intercoolers) found on truck and coach manufacturer (for example, Detroit Diesel, Cumming, Detroit, International, General Motors, Volvo, Mercedes, Caterpillar, Packer). • Principles of various systems including: lubrication, cooling, intake, and exhaust (for example, oil pump operation, radiator design). • Various types of fuel systems including fuel injection pumps and hydraulic fuel injections found on truck and coach manufacturers (for example, Detroit Diesel, Cumming, Detroit, International, General Motors, Volvo, Mercedes, Caterpillar, Packer). <p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> • Engine design characteristics when visually identifying engine manufacturers (for example, International new emission engine). • Engine noise to determine engine component failures (for example, piston slap, rod knock, valve train noise). • Precision measurement tool readings and compare them to manufacturer specifications 	<p>manufacturers' recommendations and safe work practices (for example, remove valves, adjust valve lash).</p> <ul style="list-style-type: none"> • Proper testing and servicing procedures for cooling and lubricating system components and coolants following manufacturers' recommendations and safe work practices (for example, pressure test cooling system for leaks, high pressure oil pump replacement). • Proper testing and servicing procedures for air induction, fuel, and exhaust systems following manufacturers' recommendations (for example, replace turbocharger, replace fuel injector). • Engine overhauling (for example, remove and replace sleeves, pistons, connecting rods, and engine bearings) on all vehicles in the truck and coach industry. <p>Be able to use:</p> <ul style="list-style-type: none"> • Diagnostic flowcharts and diagnostic equipment to correctly troubleshoot engine concerns (engine misfire, engine knock). • A variety of hand and power tools safely and correctly in order to perform service procedures on diesel engine components (for example, cylinder head removal).

	Transportation Technology Fundamentals	Transportation Technology Skills
	<p>(engine cylinder taper, crankshaft journal out of rod).</p> <p>Be able to identify and describe:</p> <ul style="list-style-type: none"> • Parts of the diesel internal combustion engine used in truck and coach transportation (for example, crankshafts, camshaft, pistons, connecting rods, pistons). • Operation of the four stroke cycle of a diesel engine. • Engine identification (for example, fuel used, cylinder arrangement, camshaft location) found on C12 and C15. • Diesel engine fuel injection pump and its use to affect engine performance. 	<ul style="list-style-type: none"> • Correctly use specialty measurement and diagnostic equipment to apply to engine component evaluations (for example, compression gauge, micrometer, dial indicator, fuel pressure gauge).
Understanding Engine Management Systems:	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Principles of the operation of various engine management systems (for example, explain the diesel engine Ignition systems, glow plug, lubrication and coolant systems). • Environmental management systems (for example, slobber exhaust, exhaust circulating systems, O2 sensors, exhaust convertors) that meet emissions requirements in accordance with Provincial guide lines. • Understand the function of all type of fuel 	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Manufacturers' trouble code charts and diagnostic procedures in order to troubleshoot faults displayed by on-board diagnostic data. • Ohm's law to assist in diagnostic procedures when determining the cause of engine management concerns (for example, high resistance in engine coolant temperature sensor). • Diagnose and repair coolant systems and components found in truck and coach industry (for example, radiators, water pump, and thermostat).

	Transportation Technology Fundamentals	Transportation Technology Skills
	<p>injection systems and fuel pumps (for example, Detroit Diesel, Cumming, Detroit, International, General Motors, Volvo, Mercedes, Caterpillar, Packer).</p> <p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> • How engine management systems may be affected by lubrication and coolant systems requiring maintenance (for example,, lack of oil change in a diesel engine clog oil galleries and stop proper lubrication to cam shaft bearing). • How engine management systems may be affected by diesel fuel gelling. • Operations of various management systems (for example, flow chart, electrical diagrams, emission controls readings from scan tools, air brakes circuits and hydraulic systems found on all truck and coach, hydraulics systems found on most dump trucks or hydraulic booms found on snow plow and rail road service trucks). <p>Be able to identify and describe:</p> <ul style="list-style-type: none"> • Province emissions control standards (for example, regulation for In-use off-road diesel fueled fleets (off-road regulation), the In-use 	<ul style="list-style-type: none"> • Diagnose, repair and or overhaul fuel injection pumps and injectors found on all truck and coach vehicles (for example, Detroit Diesel, Cumming, Detroit, International, General Motors Volvo, Mercedes, Caterpillar, Packer). <p>Be able to demonstrate:</p> <ul style="list-style-type: none"> • Proper identification and location of engine management sensors, actuators, and modules on heavy duty and agricultural equipment (for example, engine coolant temperature sensor, injector pressure control solenoid, power train control module). • Correctly diagnose the interruption of sensors and actuator data retrieved from engine control systems and components (for example, DataStream, oscilloscope). • Understanding of fuel injection pumps and timing adjustments and the effects on engine performance and engine emissions. <p>Be able to use:</p> <ul style="list-style-type: none"> • Diagnostic equipment correctly and safely to diagnose and repair engine electronic and performance malfunctions (for example, multimeter, fuel pressure tester, exhaust gas analyzer).

	Transportation Technology Fundamentals	Transportation Technology Skills
	heavy-duty diesel-fueled vehicles regulation (truck and bus regulation), the In-use on-road diesel-fueled heavy-duty drayage trucks regulation (drayage truck regulation), and the off-road large spark-ignition engine fleet requirements (fleet regulation).	<ul style="list-style-type: none"> • Correctly use a variety of hand and power tools to repair and service engine management components on various vehicles in the truck and coach industry (fuel injector, fuel injection pump).
Understanding Power Transfer Devices:	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Transmission torque converters, differentials, final drives, transfer cases, clutches, turbo and twin turbo used in the truck and coach industry. • Power takes off units found in the truck and coach industry. <p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> • Different fluids needed in all power transfer devices (for example, special additive added to rear differential needed for clutch pack). • Power flow through transmissions and drive train components (for example, rear axle, power take off). <p>Be able to identify and describe</p> <ul style="list-style-type: none"> • Power flow, gear ratios, and torque 	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Servicing differentials (for example, remove and replace crown, pinion gear) to interpret tooth patterns from crown and pinions found in the truck and coach industry. • Analysis of overhaul standards and automatic transmissions found in the truck and coach industry. <p>Be able to demonstrate:</p> <ul style="list-style-type: none"> • A basic knowledge to identify various types of drive train components commonly used in the truck and coach industry (for example, multi speed transmission, driveshaft, transfer case). • Proper inspection techniques of drive train components to determine cause of failure (for example, excessive backlash in ring gear, excessive clearance in clutch pack).

	Transportation Technology Fundamentals	Transportation Technology Skills
	<p>multiplication in common mechanical drive systems (for example, the clutch slipping).</p>	<p>Be able to use:</p> <ul style="list-style-type: none"> • Diagnostic flowcharts and specialty diagnostic equipment to correctly troubleshoot drive train concerns (for example, power take off inoperative, bulldozer track is loose). • Hand and power tools safely and correctly to perform service procedures on drive train components (for example, replace universal joints, replace torque convertors). • Specialty tools and equipment necessary to service all power transfer devices (for example, dial indicators, pressure gauge, clutch center shaft) used on truck and coach vehicles.
Understanding Electrical and Electrical Circuits & Components	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Diagnostics and repairs on specific applications as it relates to the truck and coach Industry (for example, glow plug system, relays, starting systems, lighting circuits, charging circuits). • Operation and use of the OBD (on board diagnosing unit) to diagnose all service codes found in the truck and coach industry (for example, reading service codes may identify a bad oxygen sensor which will save fuel consumption even past emission test). 	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Repairs on electrical circuits located on truck and coach vehicles (for example,, terminal repair, wiring repair) safely and correctly. • Ohm’s Law principles in reading and understanding circuits and diagrams in small engine and recreational equipment diagnostics. • Principles of Ohm’s Law when interpreting electrical diagrams and circuits to assist in diagnosing heavy duty and agricultural equipment (for example, voltage drops, circuit resistance). • Diagnostic and troubleshooting skills when

	Transportation Technology Fundamentals	Transportation Technology Skills
	<p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> • Components of electrical systems and their application in the truck and coach industry (for example, relays, ECM (electronic control module), resistor, transistor, diode). • 12 volt and 24 volt electrical systems used in the truck and coach industry (for example, the use of 1 to 4 batteries on semis). <p>Be able to identify and describe:</p> <ul style="list-style-type: none"> • Principals of series circuits as they relate to the truck and coach Industry. • Principals of parallel circuits as they relate to Ohm's law. • Principals of Kirchhoff's circuit law as it relates to the truck and coach industry. 	<p>determining a fault of an operative electrical circuit (for example, blown fuse, open circuit, faulty relay) in a truck or coach vehicle.</p> <p>Be able to demonstrate:</p> <ul style="list-style-type: none"> • Proper inspection techniques and testing of a variety of electrical circuits (for example, amperage draw test on circuits, voltage drop test) on truck and coach vehicles). • Proper wiring and circuit repair procedures using the correct tools (for example, soldering wires with solder gun, replacing faulty electrical terminals). <p>Be able to use:</p> <ul style="list-style-type: none"> • Electrical diagnostic equipment correctly (for example, battery, starting charging system tester, battery load tester). • A wide range of electrical test equipment on truck and coach vehicles (for example, multimeter, test light,) to measure voltage, amperage, and resistance of electrical circuits. • A variety of hand and power tools correctly and safely to replace a starter, alternator, generator, and battery on vehicles in the truck and coach industry (for example, International, Kenworth).

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<p>Troubleshooting the Power train:</p>	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • OBD: onboard diagnosing systems found on truck and coach systems. • Trouble codes related to the truck and coach industry. <p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> • The scan tools used to diagnose electronic problems in the truck and coach industry. • Read and interpret shop manuals (for example, how to follow troubleshooting procedures step by step as per manual). • Identify industry campaign bulletins and recalls in order to follow industry repair instructions found on all newer models found in the truck and coach industry. <p>Be able to identify and describe:</p> <ul style="list-style-type: none"> • Equipment symptoms that can be resolved through proper diagnostic steps (for example, truck does not move, power take off inoperative). 	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Basic troubleshooting procedures on a truck or coach (for example, gather information, perform tests, generate solutions, apply an appropriate solution, test the results). • Repairs of problems found in the power train system (for example, no start; problems with starting system, charging system, ignition system). • Perform maintenance on transmissions, differentials, and diesel engines (for example, transmission service, lube oil and filter, coolant flush). <p>Be able to demonstrate:</p> <ul style="list-style-type: none"> • Proper measurement information retrieved from precision tools (for example, micrometers, dial indicator) to make accurate conclusion on component conditions (for example, checking for worn, loose, damaged, missing, or defective components). <p>Be able to use:</p> <ul style="list-style-type: none"> • Troubleshooting specialty tools (for example, scan tool, multimeter, gas analyzer). • Proper diagnostic equipment to troubleshoot truck and coach power train concerns effectively (for example, pressure gauges, micrometers).

	Transportation Technology Fundamentals	Transportation Technology Skills
Understanding Major Systems & Components:	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Operation and function of the major steering systems in the truck and coach industry (for example, hydrostatic, hydraulic assist). • Operation and function of the front suspension systems in the truck and coach industry (for example, active front suspension, wishbone). • Operation and function of brake systems found in the truck and coach industry (for example, hydraulic, wet multi-disc brakes). • Various truck and coach implement operations (for example, snow plough, hauling). • Principles of hydraulics and their application in the truck and coach industry. • Hydraulic circuits and components dealing with the hydraulic lift systems, power steering, power brakes, and external cylinder operations. • Operation of anti-lock braking systems, automatic traction control systems, air brake systems, and J brake operations. <p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> • Brakes, steering, and suspension components (for example, tie rod, brake drum). • Hydraulic schematics, pressure force, and area calculations related to hydraulics (for example, 	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Perform tasks related to truck and coach safety inspection which in most cases needs to be done monthly (for example,, check lights, horn, wipers, glass, door latches and locks). • Perform routine and/or scheduled service procedures on steering, control, suspension, and brake systems (for example,, lubrication, brake service, suspension inspection, belt and track adjustment, tire service, fluid change) safely and correctly, using appropriate service information (for example, truck fleet, and coach fleet). • Perform service and repair procedures on various body components and accessories found using appropriate fasteners and bonding agents (for example,, bolts, welds, rivets, clips, adhesives). • Assemble or repair common types of body and frame constructions (for example, construction, sub frame and structural assemblies, hull construction) found in truck and coach vehicles. • Create new hydraulic lines found on hydraulic pumps. • Diagnose and repair steering and suspension found in the truck and coach industry (for example, ball joints, tie rods, idler arms, air suspension). <p>Be able to demonstrate:</p>

	Transportation Technology Fundamentals	Transportation Technology Skills
	<p>hydraulic cylinder relating to dump trucks).</p> <ul style="list-style-type: none"> • Oil flow through hydraulic systems (for example, high rail systems found on CN trucks). <p>Be able to identify and describe:</p> <ul style="list-style-type: none"> • Diagnostic procedures of steering and suspension systems. • Various components of each system (for example, suspension, steering, brake). • Repair procedures on brake, steering, suspension, and hydraulic systems. • A variety of truck and coach implements (for example, snow plough, towing accessories rail riding systems). • Service procedures of hydraulic fluids, reservoirs, and conditioners following manufacturers' recommendations. • Diagnostic and service procedures on typical hydraulic and antilock braking systems. 	<ul style="list-style-type: none"> • Proper testing and servicing procedures of steering systems, brake systems, suspension systems, tires, wheels and hubs (for example, replace tire, service wet disc brake system). • Basic knowledge of location of fluids, filters, and connectors while performing proper truck and coach scheduled maintenance on brakes, steering, and suspension systems (for example, lubricate steering, suspension, pivot points, service brakes). • Correct service and diagnostic procedures on truck and coach implements (for example, semi-trailers). • Test airlines (for example, air brake found on semi and semi-trailers). <p>Be able to use:</p> <ul style="list-style-type: none"> • Precision tools to properly measure component tolerances when servicing and repairing steering, brake, and suspension systems on heavy duty and agricultural equipment (for example, rotors, gear train, hydraulic cylinder). • Hand and power tools correctly and safely when replacing and repairing trucks and coaches (for example, brake, steering, hydraulic, and suspension components).

	Transportation Technology Fundamentals	Transportation Technology Skills
Technological Literacy and Numeracy:	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Written recommendations for vehicle repairs (for example, writing work orders, proper explanation can make a difference on the amount you get paid). • Transferable Life Skills (for example, reading text, writing, document use, computer use, oral communication, numeracy, and thinking skills) as identified in the Ontario Skills Passport. • Reading information in manuals as the truck and coach industry is changing rapidly. • Ohm's law (e. g. calculating the current or voltage and resistance on any truck or coach circuit). <p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> • Titles on service manuals, and electrical circuit diagrams. • Diagnosing procedures found in truck and coach service manuals. <p>Be able to identify and describe:</p> <ul style="list-style-type: none"> • General terminology in the truck and coach industry for correct use in written and oral communication. • Mathematical concepts and calculations (for 	<p>.</p> <p>Be able to apply:</p> <ul style="list-style-type: none"> • Perform mathematical calculations related to vehicle maintenance and operations that are important from an owner's perspective (for example, calculate quantities, ratio of water to antifreeze, fuel consumption), using appropriate resources (for example, owner's manual, service manuals, service information). • Consult the owner's manuals as required for specific procedures, specifications, and products (for example, oils, fluids, fuses, bulbs) related to the maintenance of a vehicle). • Writing skills to create documents which describe the design, intention, and content, making reference for further information or context. • Appropriate mathematic and scientific concepts to products and process designs. • Client invoices and billable hours and disbursements related to truck and coach design projects. • Apply diagnosis and process steps in service manuals, and electrical circuit diagrams for truck and coach repairs. <p>Be able to demonstrate:</p> <ul style="list-style-type: none"> • Measuring with all types of specialty tools used in the

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	<p>example, ore, stroke, H.P.).</p> <ul style="list-style-type: none"> Identify torque patterns and pressure readings found in service manuals (for example, following torque to yield pattern on during installation of a head on International diesel engine). 	<p>truck and coach industry (for example, vernier, caliper, various torque wrenches).</p> <ul style="list-style-type: none"> Convert all types of measures (for example, in pound to foot, metric to standard). Proper rebuilding aspects required to meet specific Horse Power (H.P.) specifications when rebuilding engines. Appropriate technical language when reading, creating, and using technical reports. Visual and oral presentation and marketing for the use of proposed designs to the industry and/or clients (for example, semis, trucks used in the mining industry). The design process to plan and develop products or processes with a focus on the truck and coach industry. <p>Be able to use:</p> <ul style="list-style-type: none"> Use relevant mathematical skills and apply appropriate scientific concepts to understand and to perform repairs on vehicles in the truck and coach industry (for example, math skills: calculate clearances; concept applied: hydraulics; challenge: vehicle height modification). Correctly use Imperial and Metric units of measurement, using typical scales. Correctly use a torque wrench (for example, foot lbs,

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		<p>inch lbs).</p> <ul style="list-style-type: none"> • A variety of communication techniques and tools to present products and/or process designs. • Documents including scaled drawings, technical reports, and cost analysis to present designs. • Research reports and presentations found in the truck and coach industry (for example, cost estimation, warranty period reports, cost estimation). • Various research methods and strategies to gather, organize, and interpret truck and coach information from appropriate resources. • Scaled drawings and process specifications.
<p>Tools, Equipment, and Materials</p>	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • The function, purpose, and operation of specialty tools and equipment (e. g. the use of a 500 foot pound torque wrench used to torque all truck, trailer and coach wheels.). • Layout and set-up tools (for example, mobile truck and coach technicians.). • Advanced measuring tools. • Proper selection process for tools and equipment (for example, special equipment used to help technicians such as wheel carts). <p>Be able to identify and describe: Proper safety measures used for tools and equipment used in the truck and coach industry.</p>	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Technical skills to layout and inspect a product. <p>Be able to demonstrate:</p> <ul style="list-style-type: none"> • Safety procedures during the use of equipment or tools used in the truck and coach industry (for example, the use of wheel carts during wheel removal). • The use of a 500lb torque wrench while installing wheels on truck and trailers. • Correct use of all tools and equipment related to the truck and coach industry.

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		<p>Be able to use:</p> <ul style="list-style-type: none"> • Use a variety of tools and equipment (for example,, fuel pressure/vacuum gauge, compression tester, coolant pressure tester, stethoscope, and manometer) safely and correctly to diagnose basic engine conditions. • Computers to operate and control systems. • Hand tools, machines, and equipment. • Layout and set-up tools, machines, and equipment. • Advanced measuring devices.
Transportation Technology and The Environment	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Legislation, regulations, and standards, relating to government and ministry guidelines. • Harmful environmental gasses that are produced through combustion (for example, International diesel compared to new lower emissions) and how the engine management systems control the level of emissions in the exhaust gas. • Legislation, regulations, and standards, relating to Freon (for example, R12, R134, and blends). <p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> • Recyclable materials used in the truck and coach industry (for example, tires, engine oil, 	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Technical skills to layout and inspect a product. • Legal requirements and emission standards to service, repair, and test truck and coach vehicles (for example, diesel particulate filters, Diesel Oxidation Catalysts). <p>Be able to demonstrate:</p> <ul style="list-style-type: none"> • Safety procedures during the use of all tools and equipment related to the truck and coach industry. • Proper procedures to remove waste and recyclable products form truck and coach vehicles, minimizing the impact on the environment (for example, used oil, used tires, battery recycle).

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	<p>coolant, batteries).</p> <p>Be able to identify and describe:</p> <ul style="list-style-type: none"> • The actions being taken by truck and coach manufacturers to reduce greenhouses gases and ozone depleting materials (for example, diesel particulate filters, antifreeze, R-12 Freon). • Government requirements and regulations on emission testing. • Recyclable materials used in the truck and coach industry (for example, Freon R12, R134 and blends, oil, coolant) 	<p>Be able to use:</p> <ul style="list-style-type: none"> • Procedures required in preventing the release of ozone depleting materials and harmful substances used in the truck and coach industry during servicing and repairs (for example, R-12 and 134 Freon, diesel fuel, hydraulic fluid).
Design Process / Solving Repair Challenges	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Changes that are made after products are out on the market through bulletins and industry recalls. 	
Transportation Technology and Society	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Ways in which the truck and coach sector is affected by the social, and cultural characteristics of the communities in which they operate (for example, socio-economic demographic of a community). • The social and economic impact of truck and coach activities (for example, deliveries, 	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Professional networks to include local businesses, attractions and destinations, as well as postsecondary programs to support student learning and development through experiential learning in society (for example, class trips, guest speakers, job shadowing, volunteerism, scholarships and donations).

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	<p>bussing, snow removal, fire trucks).</p> <p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> • Ways in which the truck and coach sector is affected by the economic characteristics of the communities in which they operate (for example, age profile of community and requirements for different types of outdoor recreation). • The impact of the truck and coach industry on Ontario's regional economies. <p>Be able to identify and describe:</p> <ul style="list-style-type: none"> • Related industries affected by the truck and coach industry (for example, mining, forestry, communities, hospitality and tourism). 	<p>Be able to demonstrate:</p> <ul style="list-style-type: none"> • An understanding of political, economic, cultural, and environmental issues impacting the truck and coach industry. <p>Be able to use:</p> <ul style="list-style-type: none"> • Information of potential technologies to assist in advancing today's society (for example, providing new bus to change today's social transportation and semis to change the goods that are transported).
Health and Safety:	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Specific components of legislation and standards related to workplace safety in the truck and coach industry. • Proper safety practices, housekeeping practices, lifting procedures, and fire prevention (spill cleanup, tripping hazards). • Legislation and regulations related to procedures and operations used in transportation technology facilities (for example,, Occupational Health and Safety Act 	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Proper use of protective clothing and equipment (for example,, eye protection, gloves, breathing mask) as required to ensure their own and others' safety in the work environment. • Adhere to personal and environmental health and safety standards and procedures found in the truck and coach industry with respect to processes, materials, tools, equipment, and facilities throughout the design process and related activities (for example,, use protective equipment; set tool and

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	<p>[OHSA]; regulations and standards outlined in the Workplace Hazardous Materials Information System [WHMIS]; Apprenticeship and Certification Act [ACA]).</p> <ul style="list-style-type: none"> Professional responsibilities in the truck and coach industry with regards to personal and public safety (for example, excellent workmanship, service excellence). <p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> Skills and working conditions related to each profession. Safety hazards in the work place and the ability to resolve these issues (for example, oil spills, loose extension cords). Safety hazards and the ability to follow safety protocols when repairing vehicles in the truck and coach industry (for example, belt and pulley systems). <p>Be able to identify and describe:</p> <ul style="list-style-type: none"> Common industry hazards. Occupational Health and Safety Act. Mandatory personal protective equipment. Equipment and safety practices and procedures. 	<p>equipment guards properly; ensure adequate ventilation and ergonomic seating and other workplace arrangements; follow safe operating procedures; keep work areas clean and organized; store materials and dispose of wastes properly).</p> <p>Be able to demonstrate:</p> <ul style="list-style-type: none"> Understanding and an application of safety procedures for using and maintaining materials, tools, and equipment. Understanding of the Occupational Health and Safety Act (for example, duties of employers, rights and responsibilities of workers). Demonstrate good housekeeping and safety practices in the work environment (for example, cleaning up spills and leaks, keeping areas clean and clear of obstructions in all truck and coach industries). <p>Be able to use:</p> <ul style="list-style-type: none"> Use and implement the Passport to Safety online challenge for teens.

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Career Opportunities:	<p>Be able to demonstrate an understanding of:</p> <ul style="list-style-type: none"> • Transferable life skills (for example, reading text, writing, document use, computer use, oral communication, numeracy, and thinking skills) as identified in the Ontario Skills Passport. • The application of work habits (for example, initiative, organization, accountability, ethical conduct) as identified in the Ontario Skills Passport. <p>Be able to recognize and interpret:</p> <ul style="list-style-type: none"> • Professional associations relating to the truck and coach industry (for example, Ontario College of Trades). • Apprenticeship programs and Ontario Youth Apprenticeship Programs (OYAP). <p>Be able to identify and describe:</p> <ul style="list-style-type: none"> • Careers in the truck and coach industry that require a post-secondary education. • Educational programs and the training certification(s) needed for entry into the various programs of the truck and coach industry. 	<p>Be able to apply:</p> <ul style="list-style-type: none"> • Employability Skills 2000+ that relate to the truck and coach industry (for example, adapt to changing requirements and information, accept and provide feedback in a constructive and considerate manner, be innovative and resourceful: identify and suggest alternative ways to achieve goals and get the job done). <p>Be able to demonstrate:</p> <ul style="list-style-type: none"> • Proper work habits that will create success in the truck and coach industry (for example, safety, teamwork, organization). <p>Be able to use:</p> <ul style="list-style-type: none"> • Up-to-date portfolio (a record of progress and work experience) that includes pieces of design work and other material that provide evidence of skills and achievements in areas related to the truck and coach industry (for example, Ontario Skills Passport, technical reports, Passport to Safety Certificate, awards, reference letters) and explain why having a current portfolio is important for career development and advancement. • Up-to-date resume, cover letter, and references that are specifically directed towards the truck and coach industry. • OYAP (Ontario Youth Apprenticeship Program)

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		as a way to become a certified truck and coach technician.

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Appendix 1

The *Ethical Standards for the Teaching Profession*

The *Ethical Standards for the Teaching Profession* represent a vision of professional practice. At the heart of a strong and effective teaching profession is a commitment to students and their learning. Members of the Ontario College of Teachers, in their position of trust, demonstrate responsibility in their relationships with students, parents, guardians, colleagues, educational partners, other professionals, the environment and the public.

The Purposes of the Ethical Standards for the Teaching Profession are:

- to inspire members to reflect and uphold the honour and dignity of the teaching profession
- to identify the ethical responsibilities and commitments in the teaching profession
- to guide ethical decisions and actions in the teaching profession
- to promote public trust and confidence in the teaching profession.

The Ethical Standards for the Teaching Profession are:

Care

The ethical standard of *Care* includes compassion, acceptance, interest and insight for developing students' potential. Members express their commitment to students' well-being and learning through positive influence, professional judgment and empathy in practice.

Respect

Intrinsic to the ethical standard of *Respect* are trust and fair-mindedness. Members honour human dignity, emotional wellness and cognitive development. In their professional practice, they model respect for spiritual and cultural values, social justice,

confidentiality, freedom, democracy and the environment.

Trust

The ethical standard of *Trust* embodies fairness, openness and honesty. Members' professional relationships with students, colleagues, parents, guardians and the public are based on trust.

Integrity

Honesty, reliability and moral action are embodied in the ethical standard of *Integrity*. Continual reflection assists members in exercising integrity in their professional commitments and responsibilities.

The Standards of Practice for the Teaching Profession

The *Standards of Practice for the Teaching Profession* provide a framework of principles that describes the knowledge, skills, and values inherent in Ontario's teaching profession. These standards articulate the goals and aspirations of the profession. These standards convey a collective vision of professionalism that guides the daily practices of members of the Ontario College of Teachers.

The Purposes of the Standards of Practice for the Teaching Profession are:

- to inspire a shared vision for the teaching profession
- to identify the values, knowledge and skills that are distinctive to the teaching profession
- to guide the professional judgment and actions of the teaching profession
- to promote a common language that fosters an understanding of what it means to be a member of the teaching profession.

The Standards of Practice for the Teaching Profession are:

Commitment to Students and Student Learning

Members are dedicated in their care and commitment to students. They treat students equitably and with respect and are sensitive to factors that influence individual student learning. Members facilitate the development of students as contributing citizens of Canadian society.

Professional Knowledge

Members strive to be current in their professional knowledge and recognize its relationship to practice. They understand and reflect on student development, learning theory, pedagogy, curriculum, ethics, educational research and related policies and legislation to inform professional judgment in practice.

Professional Practice

Members apply professional knowledge and experience to promote student learning. They use appropriate pedagogy, assessment and evaluation,

resources and technology in planning for and responding to the needs of individual students and learning communities.

Members refine their professional practice through ongoing inquiry, dialogue and reflection.

Leadership in Learning Communities

Members promote and participate in the creation of collaborative, safe and supportive learning communities. They recognize their shared responsibilities and their leadership roles in order to facilitate student success. Members maintain and uphold the principles of the ethical standards in these learning communities.

Ongoing Professional Learning

Members recognize that a commitment to ongoing professional learning is integral to effective practice and to student learning. Professional practice and self-directed learning are informed by experience, research, collaboration and knowledge.