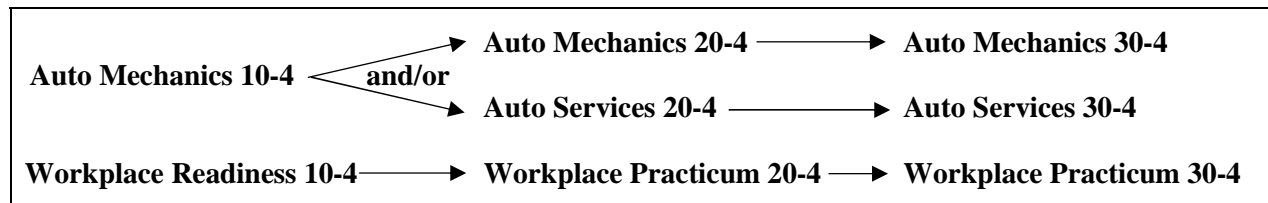

KNOWLEDGE AND EMPLOYABILITY AUTO MECHANICS

COURSE SEQUENCE



Knowledge and Employability 10-level courses provide opportunities for *exploration* of, and *orientation* toward, an occupational grouping in a single career field. In 20-level courses, students progress from *orientation* toward *preparation*; and in 30-level courses, students are involved in *preparation* for direct job entry.

Auto Mechanics courses are designed to teach occupational knowledge and skills for entry-level positions in auto services and auto mechanics by developing employability competencies that relate to all career paths.

- All courses focus on developing career awareness, safety standards and knowledge of tools, equipment and materials related to the industry.
- Auto Mechanics 10-4 provides a basis for, and an introduction to, Auto Mechanics 20-4 and Auto Services 20-4.

- Auto Mechanics 20-4 and 30-4 focus on steering, chassis and suspension repair.
- Auto Services 20-4 and 30-4 focus on lubrication, oil changes and other regular maintenance.
- Students interested in automotives should be encouraged to take both courses at the 20 and 30 levels.
- A related Workplace Practicum or Work Experience course is recommended to further enhance employability and occupational skills and to adequately prepare students for entry into the work force. In senior high school, a 30-level Workplace Practicum course, 30-level Work Experience course or 30-level Green Certificate course is required to fulfill the requirements of a Certificate of High School Achievement. Workplace practicums are supportive work placements in a related field that will allow students to validate their learning in the workplace.

COURSE DELIVERY

This Knowledge and Employability occupational strand includes two sequences of 5-credit courses. Students progress through the courses in a sequence and may combine courses across sequences to increase the depth of their knowledge.

The 10-level course is a prerequisite for both of the 20-level courses within the strand. The 20-level course in each sequence is a prerequisite for the 30-level course in that sequence.

The occupational courses may be offered in a variety of learning environments that range from a classroom in a school to a business/industry work site. The courses offer a balance between school-based and work-based learning that provides options for students to enter the workplace or to pursue post-secondary education or training.

GOALS

Students in Knowledge and Employability occupational courses will:

- identify standards determined by the workplace for the academic and occupational competencies considered necessary for success
- demonstrate practical applications through on- and off-campus experiences/community partnerships
- experience career development to assist them in exploring careers, assessing their career skills and developing a career-focused portfolio
- develop interpersonal skills to ensure respect, support and cooperation with others
- develop safety awareness and habits to ensure a safe working environment.

COMPETENCIES FRAMEWORK

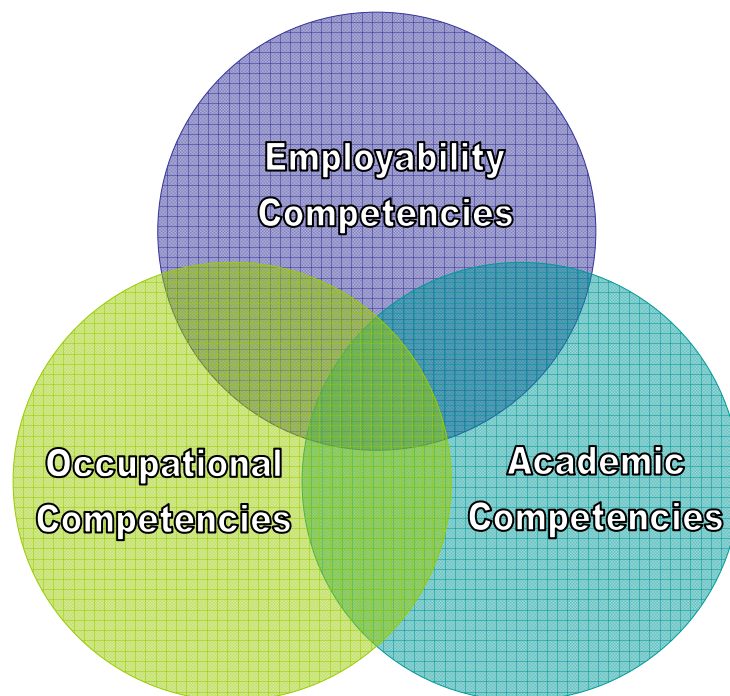
Each Knowledge and Employability occupational course is made up of three elements: employability, occupational and academic competencies. The combination of these three elements is essential to the delivery of the occupational courses.

- Employability competencies are transferable to all occupations and are consistent throughout all courses.

- Occupational competencies are specific to an occupational area and provide the context through which students will develop their employability competencies.
- Academic competencies are to be reinforced and further developed through the occupational context that provides relevance to the academic courses.

The integration of the three elements is essential to equip students to make the transition from school to the workplace.

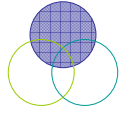
KNOWLEDGE AND EMPLOYABILITY OCCUPATIONAL COURSES COMPETENCIES FRAMEWORK



AUTO MECHANICS 10-4 GENERAL OUTCOMES

Employability Competencies	Students will develop these competencies throughout the learning process and demonstrate them in daily life and the workplace.
Managing Transitions	<ul style="list-style-type: none"> • Students will develop an awareness of how learning contributes to personal success. • Students will develop an ability to manage change effectively. • Students will explore and discover personal aptitudes and interests related to occupational opportunities.
Personal Management	<ul style="list-style-type: none"> • Students will develop self-esteem, confidence and the ability to set personal goals and priorities. • Students will identify and understand the risks associated with occupational activities.
Working with Others	<ul style="list-style-type: none"> • Students will develop communication skills and strategies in an occupational context. • Students will demonstrate respect for the thoughts and opinions of others in the group. • Students will demonstrate positive effort and behaviour toward achieving a group's goals.
Occupational Competencies	Students will develop and demonstrate the following competencies to succeed in a specific occupation or career.
Achieving Results	<ul style="list-style-type: none"> • Students will explore a variety of occupations within an auto mechanics career environment. • Students will develop safe workplace practices and procedures. • Students will be introduced to technology to develop a high-quality product or service. • Students will perform general vehicle maintenance. • Students will develop troubleshooting and problem-solving skills related to mechanical operations. • Students will evaluate the condition of a vehicle and identify the procedures for purchasing a vehicle (optional). • Students will develop safe driving habits (optional).
Ensuring Quality	<ul style="list-style-type: none"> • Students will develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.
Academic Competencies	Students will continue to develop these minimum academic competencies that provide a foundation for further learning.
Communication	<ul style="list-style-type: none"> • Students will enhance their ability to listen, speak, read and write effectively.
Thinking	<ul style="list-style-type: none"> • Students will develop problem-solving strategies.
Numeracy	<ul style="list-style-type: none"> • Students will understand the value of numeracy skills in the workplace.
Information Technology	<ul style="list-style-type: none"> • Students will familiarize themselves with the information technology used in daily workplace operation.

AUTO MECHANICS 10-4



EMPLOYABILITY COMPETENCIES: These competencies are developed throughout the learning process and are demonstrated in daily life and the workplace. Students will develop and demonstrate these competencies through individual effort and interpersonal interaction while completing a variety of projects/activities.

MANAGING TRANSITIONS

General Outcomes	Specific Outcomes
<p>Students will develop an awareness of how learning contributes to personal success.</p>	<p>Lifelong Learning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify learning preferences and strengths and apply learning styles and strategies appropriate to the situation • set learning goals and identify how formal/informal learning can help them achieve goals • develop an awareness of senior high school courses and work experience and identify educational possibilities; e.g., Registered Apprenticeship Program (RAP), Green Certificate, Career and Technology Studies (CTS) and Career Internship.
<p>Students will develop an ability to manage change effectively.</p>	<p>Adapting to Change</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify available support resources and assess potential barriers • prepare an action plan to proactively respond to a particular change or challenge.
<p>Students will explore and discover personal aptitudes and interests related to occupational opportunities.</p>	<p>Career Development</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • create an inventory of personal competencies, interests, goals and work preferences and link this inventory to career options • identify sources of support for investigating and finding work; e.g., Alberta Learning Information Service (ALIS) Web site • describe how work contributes to individual goals • explore the workplace through community partnerships and identify employer and employee expectations, rights and responsibilities.

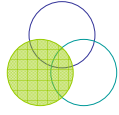
PERSONAL MANAGEMENT

General Outcomes	Specific Outcomes
Students will develop self-esteem, confidence and the ability to set personal goals and priorities.	Self-development <i>Students will:</i> <ul style="list-style-type: none">• identify personal characteristics, strengths and talents and establish an action plan to build on them• recognize the use of strengths and talents to achieve goals• identify acceptable and appropriate behaviours and present themselves to suit an activity or role; e.g., body language, grooming, clothing, manners• describe personal beliefs about what is right and wrong and assess the consequences of ethical/unethical behaviours.
Students will identify and understand the risks associated with occupational activities.	Risk Management <i>Students will:</i> <ul style="list-style-type: none">• identify current health and safety procedures; e.g., at home, at school, in the community and in the workplace• identify risks that could impact themselves and others and identify hazards in the work environment; e.g., chemical, physical, biological and ergonomic• identify a potential emergency situation and develop strategies for personal emergency responses• identify sources of support when taking risks in their personal lives and in the workplace; e.g., entrepreneurship.

WORKING WITH OTHERS

Students will develop communication skills and strategies in an occupational context.	Interpersonal Communication <i>Students will:</i> <ul style="list-style-type: none">• demonstrate appropriate communication strategies for communicating thoughts and feelings; e.g.,<ul style="list-style-type: none">– listen without interrupting– contribute to be heard– disagree courteously– accept conflicting opinions– use appropriate language and body language• develop awareness of verbal and nonverbal communication strategies• improve their ability to communicate by working with others• communicate common goals and expectations to improve their team's ability to achieve goals• identify causes of conflict.
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General Outcomes	Specific Outcomes
<p>Students will demonstrate respect for the thoughts and opinions of others in the group.</p>	<p>Building Community</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify commonly accepted courteous behaviour • assess and respect how their personal values and beliefs differ from those of others and how those beliefs impact personal behaviour • identify the value of volunteering in community activities; e.g., charity work, community car wash.
<p>Students will demonstrate positive effort and behaviour toward achieving a group's goals.</p>	<p>Teamwork</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify team goals • work independently and with others to support team goals; e.g., <ul style="list-style-type: none"> – generate ideas – assess resources – contribute abilities and interests – monitor progress – share responsibility for completion of a task • establish short- and long-term team goals.



OCCUPATIONAL COMPETENCIES: Students will develop and demonstrate the following competencies to succeed in a specific occupation or career. They will achieve results through a variety of projects/activities as appropriate to enhance their knowledge and skills. Students will ensure the quality of their work through effective task management and will highlight their achievements in a career-based portfolio.

ACHIEVING RESULTS

General Outcomes	Specific Outcomes
<p>Students will explore a variety of occupations within an auto mechanics career environment.</p>	<p>Career Awareness</p> <p>Exploration</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify local opportunities within a career field • define and recognize entrepreneurship as a potential career path • research employment information; e.g., duties, working conditions, personal characteristics, education, salary. <p>Standards</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify workplace protocols, procedures and standards of conduct; e.g., <ul style="list-style-type: none"> – clean the entire work area, return tools to designated areas, minimize the waste of materials – identify related health and sanitation standards – display punctuality and come prepared for classroom and shop activities – treat the shop area with care and pay attention to potential workplace health and safety risks – treat other members of the team with respect – use appropriate language and terminology – wear appropriate dress.
<p>Students will develop safe workplace practices and procedures.</p>	<p>Workplace Health and Safety</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and demonstrate preventive measures to avoid accidents and injury to themselves and others during auto mechanics procedures; e.g., <ul style="list-style-type: none"> – identify safety device locations in the shop or classroom; e.g., eyewash station, emergency shut-off, fire extinguisher, emergency exits, telephone – demonstrate the correct procedures for addressing injuries – identify the proper use of tools with regard to other classmates and shop conditions

General Outcomes	Specific Outcomes
<p>Students will be introduced to technology to develop a high-quality product or service.</p>	<ul style="list-style-type: none"> – identify personal protective equipment (PPE); e.g., coveralls, proper eyewear, proper footwear – demonstrate proper body position while at a work station – maintain a safe and clean work area – identify and practise the safe use of electrical equipment • demonstrate an understanding of the Workplace Hazardous Materials Information System (WHMIS) as it relates to the field of study and identify WHMIS symbols, classes and labelling requirements • identify important standards (codes) and governing bodies in the auto mechanics industry. <p>Products and Service</p> <p>Technology Integration</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • explore new and emerging products and technological advances used in auto mechanics. <p>Tools and Equipment</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify equipment used on mechanics-related job sites; e.g., <ul style="list-style-type: none"> – hoists – floor jacks – battery chargers – tire changers – vacuums – tire balancer – scan tools and multimeters – hand tools, including wrenches, screwdrivers, socket sets, files, chisels – power tools, including grinders, impact wrenches, drills – measuring tools, including micrometers, gauges, rulers and fluid level indicators • identify and select available tools and equipment for the task; e.g., use, maintain and store, safely, tools and equipment. <p>Materials</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify materials used on mechanics-related job sites; e.g., <ul style="list-style-type: none"> – hardware items; e.g., cotter pins, nuts, bolts, washers, snap rings, screws – fluids; e.g., oil, coolant, fuel, grease, additives, cleaners • identify appropriate materials for various tasks and minimize the waste of materials through proper use • read labels on chemical containers to check their uses and hazards • handle and properly dispose of environmentally hazardous materials used in mechanics shops; e.g., read Material Safety Data Sheets (MSDS).

General Outcomes	Specific Outcomes
<p>Students will perform general vehicle maintenance.</p>	<p>Providing Service</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify client relationships or interactions within the field of auto mechanics • identify services needed, required or provided • collect necessary information to complete a purchase or fill out a work order • identify the importance of customer or client service to all businesses/industries • identify professional practices and work habits • strive to meet and exceed the client’s expectations.
	<p>General Vehicle Maintenance</p> <p>Parts</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • list the major parts of a vehicle; e.g., <ul style="list-style-type: none"> – body – frame – power train – suspension – steering – electrical • demonstrate the correct procedures for charging, boosting and replacing an automobile battery • identify the major parts of a vehicle through diagrams while using documentation.
	<p>Four-stroke Engine</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify the major systems of a four-stroke engine; e.g., <ul style="list-style-type: none"> – four-stroke cycle – engine lubrication – cooling – fuel – exhaust – ignition.

General Outcomes	Specific Outcomes
<p>Students will develop troubleshooting and problem-solving skills related to mechanical operations.</p>	<p>Under the Hood</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and demonstrate the procedures required for regular automotive maintenance; e.g., <ul style="list-style-type: none"> – oil change – chassis lubrication – transmission fluid change – coolant check – belt check and replacement – hose check and replacement.
	<p>Exterior</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate the procedures required for regular automotive service maintenance; e.g., <ul style="list-style-type: none"> – wash a car – lubricate hinges – replace wiper blades – change a fuse – adjust a headlight – check turn indicators and brake lights.
	<p>Tire Maintenance</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and demonstrate the procedures required for regular tire maintenance; e.g., <ul style="list-style-type: none"> – check tire pressure – replace a tire – balance a tire – check for and repair leaks – rotate tires.
	<p>Troubleshooting and Problem Solving</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • discuss basic automotive problems based on various sounds, smells and visual clues; e.g., <ul style="list-style-type: none"> – knocks, noises – overheating – lack of power – fluid leaks – starting problems – vibrations – electrical loss • use knowledge of sounds, smells and visual clues to diagnose common automotive problems • list causes of, and solutions to, problems based on their diagnoses.

General Outcomes	Specific Outcomes
<p>Students will evaluate the condition of a vehicle and identify the procedures for purchasing a vehicle (optional).</p>	<p>Vehicle Value Appraisal and Inspection Skills (optional)</p> <p>Condition and Value of a Vehicle</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify the parts of a vehicle that can be tested with sight, instrument and road-test checks; e.g., engine, brakes, steering and body components • calculate the value of a vehicle using the opinions of experienced individuals, comparative pricing, depreciation rates and Blue Book and Internet sources; e.g., <ul style="list-style-type: none"> – repair estimates, wholesale reference guides, Alberta Motor Association – consideration of year, make, model, options, mileage, relative condition, popularity. <p>Buy or Sell</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • plan a strategy to buy or sell a vehicle • identify the factors concerning choice of a vehicle, considering: <ul style="list-style-type: none"> – intended use – emotional appeal – available funds – consumer reports – performance versus economy • describe the advantages and disadvantages of buying and selling vehicles privately, by auction, through a dealer or through leasing. <p>Legal/Safety Issues</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify safety concerns when dealing with unfamiliar vehicles • identify the legal steps required to buy or sell a vehicle; e.g., <ul style="list-style-type: none"> – develop the ability to check for possible write-offs, using provincial databases – examine an offer to purchase, a bill of sale, conditions of sale and possible liens.
<p>Students will develop safe driving habits (optional).</p>	<p>Vehicle Operation (optional)</p> <p>Driving</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify the skills required to operate a motor vehicle • identify the basic components of the driver's side of a vehicle; e.g., <ul style="list-style-type: none"> – safety brake – electrical components

General Outcomes	Specific Outcomes
	<ul style="list-style-type: none"> – instrument panel – safety equipment – side and rearview mirrors – dashboard, hazard and other interior lights – automatic and/or standard shifting • develop the ability to correctly use the components of the vehicle necessary for operation. <p>Operator’s Licence</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • acquire the basic operator knowledge required for a learner’s licence • read and study the <i>Alberta Vehicle Operator’s Manual</i> • develop the knowledge necessary to successfully pass the Alberta learner’s licence test; e.g., <ul style="list-style-type: none"> – the rules of the road – sign identification.

ENSURING QUALITY

General Outcomes	Specific Outcomes
<p>Students will develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.</p>	<p>Task Management</p> <p>Outcomes</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• read and/or listen to instructions• ask questions to clarify expected outcomes, procedures and timelines. <p>Decision Making</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the parameters of the task• generate and review alternative ideas and their consequences• make a decision or select an idea. <p>Planning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the steps involved in managing a project• prepare a sample project plan, including budget and timeline• identify available tools, equipment and materials. <p>Performance Standards</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify expected standards for a product or service• work to agreed quality standards and specifications• select and use appropriate tools and technology for a task or project. <p>Evaluation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify opportunities for improving quality• establish expectations and measures for improvements• create evidence to support an understanding of task management and skill development for inclusion in a personal portfolio.



ACADEMIC COMPETENCIES: These are the minimum academic competencies that provide a foundation for further learning. The following outcomes are provided as a reminder to address these academic competencies within the occupational context and to reinforce cross-curricular connections.

COMMUNICATION

General Outcomes	Specific Outcomes
Students will enhance their ability to listen, speak, read and write effectively.	Listening, Speaking, Reading and Writing <i>Students will:</i> <ul style="list-style-type: none">• read, view and interpret information presented in a variety of forms, including text, videos, graphs, charts, diagrams, manuals• identify a purpose for writing• print or write legibly, spell accurately and apply rules of grammar to construct text• listen and ask questions to expand information and to appreciate the points of view of others.

THINKING

Students will develop problem-solving strategies.	Problem Solving <i>Students will:</i> <ul style="list-style-type: none">• identify and define, and ask relevant questions to clarify, the problem• evaluate the results in terms of expected outcomes.
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NUMERACY

Students will understand the value of numeracy skills in the workplace.	Basic Operations, Patterns and Relationships, Shape and Space, and Statistics and Probability <i>Students will:</i> <ul style="list-style-type: none">• apply arithmetic operations, e.g., addition, subtraction, multiplication or division, to whole numbers and decimals and use number operations when creating and solving money problems• use calculators or computers, to perform calculations involving large and small numbers, when solving problems• apply concepts of rate, ratio, percentage and proportion to solve problems in a meaningful context• demonstrate a number sense for whole numbers 0 to 100 000 and explore proper fractions and decimals• estimate, measure and compare, using decimal numbers and standard units of measure, to solve problems in everyday contexts; e.g., mass, length, volume, time, perimeter, surface area• use metric and imperial units of measure.
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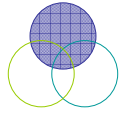
INFORMATION TECHNOLOGY

General Outcomes	Specific Outcomes
<p>Students will familiarize themselves with the information technology used in daily workplace operation.</p>	<p>Computer Operations</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the most appropriate technology tool for the task; e.g., fax, e-mail, networks, telephone• identify appropriate telephone operations, answer telephone calls appropriately, locate numbers and make telephone calls• identify basic computer operations; e.g.,<ul style="list-style-type: none">– use basic keyboarding skills– store, organize and retrieve information correctly– locate and select information and ideas using appropriate technology and information systems; e.g., Internet– access, send and retrieve e-mail and attachments• identify procedures for connecting and using audio, video and digital equipment• identify procedures for sending and receiving faxes and setting up a fax machine• identify procedures for copying and printing documents.

AUTO MECHANICS 20-4 GENERAL OUTCOMES

Employability Competencies	Students will develop these competencies throughout the learning process and demonstrate them in daily life and the workplace.
Managing Transitions	<ul style="list-style-type: none"> • Students will apply their abilities and interests toward achieving learning goals. • Students will practise the skills and abilities needed to manage change. • Students will orient themselves toward an occupation that reflects their personal aptitudes and interests.
Personal Management	<ul style="list-style-type: none"> • Students will increase their self-esteem and confidence and enhance their ability to set personal goals and priorities. • Students will understand risks and be accountable for their actions.
Working with Others	<ul style="list-style-type: none"> • Students will practise effective communication skills and strategies in an occupational context. • Students will demonstrate the ability to understand and work within the culture of a group. • Students will plan and make decisions with others.
Occupational Competencies	Students will develop and demonstrate the following competencies to succeed in a specific occupation or career.
Achieving Results	<ul style="list-style-type: none"> • Students will orient themselves toward an occupation within an auto mechanics career environment. • Students will demonstrate safe workplace practices and procedures. • Students will develop an increased awareness of technology to develop a high-quality product or service. • Students will demonstrate basic knowledge of the components used to construct an automobile. • Students will demonstrate an understanding of the operation and maintenance of an internal combustion engine. • Students will demonstrate an understanding of the function and operation of the braking system of an automobile.
Ensuring Quality	<ul style="list-style-type: none"> • Students will continue to develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.
Academic Competencies	Students will continue to develop these minimum academic competencies that provide a foundation for further learning.
Communication	<ul style="list-style-type: none"> • Students will demonstrate effective listening, speaking, reading and writing skills.
Thinking	<ul style="list-style-type: none"> • Students will apply creative thinking skills to solve problems.
Numeracy	<ul style="list-style-type: none"> • Students will apply mathematical concepts to solve occupational problems.
Information Technology	<ul style="list-style-type: none"> • Students will enhance their performance by using information technology to help complete tasks.

AUTO MECHANICS 20-4



EMPLOYABILITY COMPETENCIES: These competencies are developed throughout the learning process and are demonstrated in daily life and the workplace. Students will develop and demonstrate these competencies through individual effort and interpersonal interaction while completing a variety of projects/activities.

MANAGING TRANSITIONS

General Outcomes	Specific Outcomes
<p>Students will apply their abilities and interests toward achieving learning goals.</p>	<p>Lifelong Learning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • relate learning preferences and strengths to formal and informal learning opportunities and identify post-secondary opportunities within the related field • assess learning goals and current competencies, identify competencies needing development and identify and prioritize learning goals • create a pathway of senior high school courses to reflect learning goals • identify educational possibilities; e.g., Registered Apprenticeship Program (RAP), Green Certificate, Career and Technology Studies (CTS) and Career Internship.
<p>Students will practise the skills and abilities needed to manage change.</p>	<p>Adapting to Change</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify goals, responsibilities and commitments • assess and reflect on the success of an action plan; e.g., <ul style="list-style-type: none"> – create alternative choices to deal with unexpected change – identify stressors in personal environments that they can and cannot change • identify the need for personal support and create an inventory of available personal and community sources of support.
<p>Students will orient themselves toward an occupation that reflects their personal aptitudes and interests.</p>	<p>Career Development</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • assess work preferences and nonpreferences (e.g., indoor, outdoor, shift work), assess life/work options and outline career goals and paths • work in and seek out a variety of roles and responsibilities • measure and celebrate personal contributions to workplace goals; e.g., paid, unpaid or volunteer work • orient themselves to the workplace through community partnerships and assess personal performance in terms of workplace expectations.

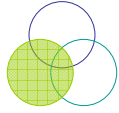
PERSONAL MANAGEMENT

General Outcomes	Specific Outcomes
Students will increase their self-esteem and confidence and enhance their ability to set personal goals and priorities.	Self-development <i>Students will:</i> <ul style="list-style-type: none">• re-evaluate an action plan to develop strengths and talents• use strengths and talents to achieve personal goals• clarify acceptable and appropriate behaviours for specific activities and roles• act ethically in personal, community and workplace contexts and accept the consequences of their actions.
Students will understand risks and be accountable for their actions.	Risk Management <i>Students will:</i> <ul style="list-style-type: none">• follow health and safety procedures; e.g., at home, at school, in the community and in the workplace• identify potential hazards, take corrective action and develop and practise action plans to ensure safety• practise personal emergency responses• assess their comfort level with, and the consequences of, taking risks.

WORKING WITH OTHERS

Students will practise effective communication skills and strategies in an occupational context.	Interpersonal Communication <i>Students will:</i> <ul style="list-style-type: none">• assess the effectiveness of communication strategies used to communicate thoughts and feelings; e.g.,<ul style="list-style-type: none">– listen without interrupting– contribute to be heard– disagree courteously– accept conflicting opinions– use appropriate body language• assess verbal and nonverbal communication strategies• apply social norms to build specific relationships• demonstrate the ability to accept praise and/or criticism.
Students will demonstrate the ability to understand and work within the culture of a group.	Building Community <i>Students will:</i> <ul style="list-style-type: none">• interact with others in a courteous manner• accommodate the beliefs of others in work and personal environments and show respect for differences in beliefs, abilities, etiquette and styles of interaction• identify opportunities for participation in community growth.

General Outcomes	Specific Outcomes
<p>Students will plan and make decisions with others.</p>	<p>Teamwork</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • participate effectively as group members; e.g., <ul style="list-style-type: none"> – generate ideas – assess resources – contribute abilities and interests – monitor progress – share responsibility for completion of a task • assume various roles within a group; e.g., leadership • clarify the expected outcomes of teamwork.



OCCUPATIONAL COMPETENCIES: Students will develop and demonstrate the following competencies to succeed in a specific occupation or career. They will achieve results through a variety of projects/activities as appropriate to enhance their knowledge and skills. Students will ensure the quality of their work through effective task management and will highlight their achievements in a career-based portfolio.

ACHIEVING RESULTS

General Outcomes	Specific Outcomes
<p>Students will orient themselves toward an occupation within an auto mechanics career environment.</p>	<p>Career Awareness</p> <p>Orientation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify entry-level competencies • identify post-secondary opportunities • recognize entrepreneurial opportunities within the industry • introduce themselves to local business/industry operations • match their personal interests to their job search; e.g., <ul style="list-style-type: none"> – identify sources of support for investigating and finding work – describe entry-level requirements – recognize potential career ladders. <p>Standards</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • develop workplace protocols, procedures and standards of conduct; e.g., <ul style="list-style-type: none"> – demonstrate appropriate work habits – use safe and sanitary practices – demonstrate pride in themselves – demonstrate pride in their work performance – show respect for others – respect the property of others.
<p>Students will demonstrate safe workplace practices and procedures.</p>	<p>Workplace Health and Safety</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify safety device locations and procedures within the workplace environment • demonstrate knowledge of, and the ability to access information about, Occupational Health and Safety (OHS) and the Workers’ Compensation Board (WCB) • demonstrate knowledge of, and adherence to, safety rules that are specific to available tools, equipment and materials

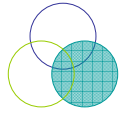
General Outcomes	Specific Outcomes
<p>Students will develop an increased awareness of technology to develop a high-quality product or service.</p>	<ul style="list-style-type: none"> • demonstrate knowledge of health hazards associated with the use of chemicals and materials and retrieve information on Material Safety Data Sheets (MSDS) using appropriate print and Internet resources • select and wear personal protective equipment (PPE) appropriate to the specific task • demonstrate knowledge of environmental issues relating to the procedures for handling hazardous waste • demonstrate an understanding of the Workplace Hazardous Materials Information System (WHMIS) as it relates to the field of study and identify WHMIS symbols, classes and labelling requirements. <p>Products and Service</p> <p>Mechanical Services</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and locate service requirements for a specific make and model of vehicle as per the manufacturer’s recommendations; e.g., owner’s manual, manufacturer’s specifications, aftermarket literature • use, safely, hand and power tools and other equipment commonly used in mechanical repair and maintenance • handle and properly dispose of environmentally hazardous materials used in mechanical repair and maintenance. <p>Technology Integration</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify new and emerging products and technological advances used in auto mechanics. <p>Providing Service</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify client relationships or interactions within the field of auto mechanics • identify services required or provided • collect necessary information to complete a purchase or to fill out a work order • recognize the importance of customer or client service to all businesses/industries • demonstrate professional practices and work habits • strive to meet and exceed the client’s expectations.

General Outcomes	Specific Outcomes
<p>Students will demonstrate basic knowledge of the components used to construct an automobile.</p>	<p>Automobile Component Review (Bumper to Bumper)</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and describe fasteners associated with the automobile; e.g., bolts, studs, nuts, screws, pins, keys • identify and describe the functions of the major parts of a vehicle body; e.g., bumpers, fenders, panels • identify and describe the functions of the major parts of a vehicle frame (separate or integral frame), focusing on strength, stress, support points and damage • identify and describe the function of the major parts of a vehicle's interior luxury systems; e.g., lights, sound, heat.
<p>Students will demonstrate an understanding of the operation and maintenance of an internal combustion engine.</p>	<p>Engines and Their Systems</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify the basic components of a four-stroke engine • identify and describe the operating principles of a four-stroke engine • identify and describe the function of the fuel system; e.g., gasoline and diesel • identify and describe the function of the lubrication system; e.g., <ul style="list-style-type: none"> – demonstrate how to inspect an engine for oil leaks – demonstrate how to renew engine gaskets or seals, where necessary – demonstrate how to change the engine oil and filter – demonstrate how to service the Positive Crankcase Ventilation (PCV) valve and breather • identify and describe the function of the cooling system; e.g., <ul style="list-style-type: none"> – demonstrate how to inspect the condition of the engine coolant, hoses, belts, fan and radiator – demonstrate how to change or recondition the engine coolant and flush the cooling system, if necessary – demonstrate how to pressure-test the cooling system – demonstrate how to replace the thermostat, if necessary • identify and describe the function of the air intake system, demonstrate how to replace the air filter, if required, and express cautions about cleaning • identify and describe the function of the exhaust system; e.g., <ul style="list-style-type: none"> – demonstrate how to inspect exhaust manifolds – demonstrate techniques for testing pipes, the catalytic converter, mufflers and hangers for structural integrity and repair, as required, including clamps, gaskets and sealers – identify and select proper exhaust servicing tools, including expanders, cutters and chisels – replace faulty exhaust parts as necessary, using a cutting torch as needed.

General Outcomes	Specific Outcomes
<p>Students will demonstrate an understanding of the function and operation of the braking system of an automobile.</p>	<p>Brakes</p> <p>Brake Systems (All work inspected by a certified technician)</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate knowledge of brake systems • identify the parts of a hydraulic brake drum system; e.g., compare the operating principles of duo-servo and non-servo brake systems • identify the parts of a disc brake system; e.g., compare the operating principles of fixed, floating and sliding caliper braking systems • identify the purpose and function of, and the testing procedure for, brake boosting; e.g., describe the operation of a combined disc and drum system • identify the parts of an emergency brake system; e.g., compare the operating principles of an emergency brake system in disc and drum brake applications. <p>Repair (All work inspected by a certified technician)</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate the ability to service and repair brake systems; e.g., <ul style="list-style-type: none"> – check the master cylinder fluid level – inspect drum and disc brake linings for wear – inspect the drum and rotor for service – adjust an emergency brake cable – machine a brake drum and rotor according to the manufacturer’s specifications – remove and replace disc and drum brake shoes – remove and replace the master cylinder, wheel cylinder and caliper – replace a flexible brake hose – bleed and flush a brake system – demonstrate how to inspect and top up the brake fluid reservoir, handling brake fluids safely – demonstrate how to inspect and assess the wear characteristics of disc brake and drum brake components – demonstrate how to lubricate parking brake linkages.

ENSURING QUALITY

General Outcomes	Specific Outcomes
<p>Students will continue to develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.</p>	<p>Task Management</p> <p>Outcomes</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• read and/or listen to instructions• ask questions to clarify expected outcomes, procedures and timelines. <p>Decision Making</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the parameters of the task• generate and review alternative ideas and their consequences• make a decision or select an idea. <p>Planning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the steps involved in managing a project• prepare a sample project plan, including budget and timeline• identify available tools, equipment and materials. <p>Performance Standards</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify expected standards for a product or service• work to agreed quality standards and specifications• select and use appropriate tools and technology for a task or project. <p>Evaluation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify opportunities for improving quality• establish expectations and measures for improvements• create evidence to support an understanding of task management and skill development for inclusion in a personal portfolio.



ACADEMIC COMPETENCIES: These are the minimum academic competencies that provide a foundation for further learning. The following outcomes are provided as a reminder to address these academic competencies within the occupational context and to reinforce cross-curricular connections.

COMMUNICATION

General Outcomes	Specific Outcomes
<p>Students will demonstrate effective listening, speaking, reading and writing skills.</p>	<p>Listening, Speaking, Reading and Writing</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• read, view and interpret occupation-related materials; e.g.,<ul style="list-style-type: none">– use related occupational terms– identify occupation-related literature– interpret and follow written instructions• select and create a text format to suit a purpose and audience, e.g., forms, letters, reports, memos, résumé, and:<ul style="list-style-type: none">– describe uses of writing skills in related occupations– write a letter of inquiry– write a letter of thanks– complete job applications• listen and present information in a clear, concise manner; e.g.,<ul style="list-style-type: none">– listen attentively to organize and classify information and ideas– organize main ideas and key messages with clarity.

THINKING

Students will apply creative thinking skills to solve problems.

Problem Solving, Decision Making and Creative Thinking

Students will:

- apply a problem-solving model to identify the problem/issue
- identify appropriate actions and develop several alternatives for each promising idea
- evaluate the results, in terms of expected outcomes related to the initial problem, and evaluate personal satisfaction with the outcome of the idea; e.g., product/process.

NUMERACY

General Outcomes	Specific Outcomes
<p>Students will apply mathematical concepts to solve occupational problems.</p>	<p>Basic Operations, Patterns and Relationships, Shape and Space, and Statistics and Probability</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• apply arithmetic operations, e.g., addition, subtraction, multiplication or division, to whole numbers and decimals and use number operations when creating and solving money problems• use calculators or computers, to perform calculations involving large and small numbers, when solving problems• apply concepts of rate, ratio, percentage and proportion to solve problems in a meaningful context• demonstrate a number sense for whole numbers 0 to 100 000 and explore proper fractions and decimals• estimate, measure and compare, using decimal numbers and standard units of measure, to solve problems in everyday contexts; e.g., mass, length, volume, time, perimeter, surface area• use metric and imperial units of measure.

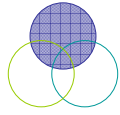
INFORMATION TECHNOLOGY

<p>Students will enhance their performance by using information technology to help complete tasks.</p>	<p>Computer Operations and Computer Applications</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• demonstrate appropriate language and etiquette when using information technology• demonstrate appropriate telephone operations; e.g., answer telephone calls appropriately, locate numbers and make telephone calls• demonstrate basic computer operations to complete a task; e.g.,<ul style="list-style-type: none">– use basic keyboarding skills– store, organize and retrieve information correctly– locate and select information and ideas using appropriate technology and information systems; e.g., Internet– access, send and retrieve e-mail and attachments• demonstrate procedures for connecting and using audio, video and digital equipment• demonstrate procedures for sending and receiving faxes and setting up a fax machine• demonstrate procedures for copying and printing documents.
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AUTO MECHANICS 30-4 GENERAL OUTCOMES

Employability Competencies	Students will develop these competencies throughout the learning process and demonstrate them in daily life and the workplace.
Managing Transitions	<ul style="list-style-type: none"> • Students will consistently demonstrate personal discovery and continuous learning. • Students will manage change effectively to support their goals. • Students will prepare themselves for entry-level employment in an occupation that reflects their personal aptitudes and interests.
Personal Management	<ul style="list-style-type: none"> • Students will exhibit self-esteem and confidence through the achievement of personal goals. • Students will manage risks to achieve both personal and workplace goals.
Working with Others	<ul style="list-style-type: none"> • Students will model effective communication skills and strategies in the home, school, community and workplace. • Students will promote equity in work and community endeavours. • Students will demonstrate the ability to complete tasks in a team environment.
Occupational Competencies	Students will develop and demonstrate the following competencies to succeed in a specific occupation or career.
Achieving Results	<ul style="list-style-type: none"> • Students will prepare for entry-level employment within an auto mechanics career environment. • Students will demonstrate entry-level standards of safe workplace practices and procedures. • Students will use technology to develop a high-quality product or service. • Students will demonstrate understanding of the composition and function of a drivetrain. • Students will demonstrate the ability to service a steering system. • Students will demonstrate the ability to service a suspension system.
Ensuring Quality	<ul style="list-style-type: none"> • Students will demonstrate an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.
Academic Competencies	Students will continue to develop these minimum academic competencies that provide a foundation for further learning.
Communication	<ul style="list-style-type: none"> • Students will demonstrate effective listening, speaking, reading and writing skills to prepare for employment.
Thinking	<ul style="list-style-type: none"> • Students will research information, use creative thinking skills and use effective problem-solving strategies to solve problems.
Numeracy	<ul style="list-style-type: none"> • Students will demonstrate mathematical operations to effectively solve problems in a meaningful context.
Information Technology	<ul style="list-style-type: none"> • Students will demonstrate the effective use of information technology to perform daily workplace operations.

AUTO MECHANICS 30-4



EMPLOYABILITY COMPETENCIES: These competencies are developed throughout the learning process and are demonstrated in daily life and the workplace. Students will develop and demonstrate these competencies through individual effort and interpersonal interaction while completing a variety of projects/activities.

MANAGING TRANSITIONS

General Outcomes	Specific Outcomes
<p>Students will consistently demonstrate personal discovery and continuous learning.</p>	<p>Lifelong Learning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify learning opportunities related to learning goals, commitments and resources; e.g., <ul style="list-style-type: none"> – identify opportunities for further education/training – locate needed financial support systems – locate needed personal support systems • practise what has been learned to build competence and confidence and evaluate the application of competencies to learning goals • create a plan that demonstrates continuous learning; e.g., <ul style="list-style-type: none"> – analyze requirements for graduation and for further education/training – modify a learning plan to reflect requirements and opportunities.
<p>Students will manage change effectively to support their goals.</p>	<p>Adapting to Change</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • prioritize and assign resources to meet commitments and goals • prioritize commitments and goals to achieve a balanced lifestyle • redefine an action plan as situations change; e.g., <ul style="list-style-type: none"> – use adaptive strategies – redefine personal goals – select personal coping mechanisms • access available and appropriate sources of support • identify opportunities for improvement and innovation; e.g., entrepreneurship.

General Outcomes	Specific Outcomes
<p>Students will prepare themselves for entry-level employment in an occupation that reflects their personal aptitudes and interests.</p>	<p>Career Development</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • analyze elements of job satisfaction; e.g., recognition, environment, pay, benefits, prestige • build personal career paths and networks • analyze how work contributes to societal and economic needs and a sense of responsibility • prepare for employment through community partnership activities and organize and complete specific job tasks effectively and efficiently.

PERSONAL MANAGEMENT

Students will exhibit self-esteem and confidence through the achievement of personal goals.

Self-development

Students will:

- continue to create a long-term self-development plan in which they consider accomplishments and redefine self-development goals
- demonstrate entry-level self-presentation appropriate to the activity and role
- maintain a high standard of personal ethics when interacting with others.

Students will manage risks to achieve both personal and workplace goals.

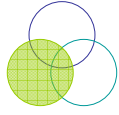
Risk Management

Students will:

- maintain health and safety procedures; e.g., at home, at school, in the community and in the workplace
- monitor success in reducing the impact of hazards on themselves and others
- demonstrate concern for the safety of others by exhibiting appropriate behaviour in the workplace
- work with others to respond to emergencies
- take planned risks to contribute to personal growth.

WORKING WITH OTHERS

General Outcomes	Specific Outcomes
Students will model effective communication skills and strategies in the home, school, community and workplace.	Interpersonal Communication <i>Students will:</i> <ul style="list-style-type: none">• communicate thoughts and feelings appropriately; e.g.,<ul style="list-style-type: none">– listen without interrupting– contribute to be heard– disagree courteously– accept conflicting opinions– use appropriate body language• maintain a balance between speaking, listening and responding• work together to achieve goals• demonstrate the ability to deal constructively with conflict.
Students will promote equity in work and community endeavours.	Building Community <i>Students will:</i> <ul style="list-style-type: none">• demonstrate and model courteous behaviour in daily interactions• demonstrate respect for others and a shared understanding of diverse beliefs, etiquette and styles of interaction• assess their personal contribution to community growth.
Students will demonstrate the ability to complete tasks in a team environment.	Teamwork <i>Students will:</i> <ul style="list-style-type: none">• assess the effectiveness of group and personal contributions; e.g.,<ul style="list-style-type: none">– generate ideas– assess resources– contribute abilities and interests– monitor progress– share responsibility for completion of a task• expand their abilities to contribute to team goals.



OCCUPATIONAL COMPETENCIES: Students will develop and demonstrate the following competencies to succeed in a specific occupation or career. They will achieve results through a variety of projects/activities as appropriate to enhance their knowledge and skills. Students will ensure the quality of their work through effective task management and will highlight their achievements in a career-based portfolio.

ACHIEVING RESULTS

General Outcomes	Specific Outcomes
<p>Students will prepare for entry-level employment within an auto mechanics career environment.</p>	<p>Career Awareness</p> <p>Preparation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • assess entry-level competencies • recognize opportunities for further education/training • select post-secondary opportunities • identify local entrepreneurs • establish contacts with local businesses/industries • present marketable skills and strengths; e.g., <ul style="list-style-type: none"> – write a letter of application – prepare a résumé – complete application forms – identify contacts and references – collect evidence of competencies in a portfolio. <p>Standards</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate workplace protocols, procedures and standards of conduct; e.g., <ul style="list-style-type: none"> – demonstrate appropriate work habits – demonstrate effective human relations techniques in the workplace – practise safety in the workplace – demonstrate acceptable verbal and nonverbal communication skills – practise personal and public hygiene procedures – demonstrate entry-level competency in the use of tools and equipment – use supplies correctly – follow good storage practices – demonstrate pride in their work performance – demonstrate a willingness to work – demonstrate respect for others – follow accepted principles and procedures – recognize opportunities for further education/training.

General Outcomes	Specific Outcomes
<p>Students will demonstrate entry-level standards of safe workplace practices and procedures.</p>	<p>Workplace Health and Safety</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and explain the use of safety devices within the workplace • demonstrate knowledge of, and the ability to access information about, Occupational Health and Safety (OHS) and the Workers' Compensation Board (WCB) • demonstrate a prework and postwork hazard assessment • demonstrate knowledge of, and adherence to, safety rules that are specific to available tools, equipment and materials • demonstrate knowledge of health hazards associated with the use of chemicals and materials and retrieve information on Material Safety Data Sheets (MSDS) using appropriate print and Internet resources • model safety consciousness by selecting and wearing personal protective equipment (PPE) appropriate to the specific task • demonstrate knowledge of environmental issues relating to the procedures for handling hazardous waste • demonstrate an understanding of the Workplace Hazardous Materials Information System (WHMIS) as it relates to the field of study and identify WHMIS symbols, classes and labelling requirements.
<p>Students will use technology to develop a high-quality product or service.</p>	<p>Products and Service</p> <p>Mechanical Services</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and locate service requirements for a specific make and model of vehicle as per the manufacturer's recommendations; e.g., owner's manual, manufacturer's specifications, aftermarket literature • use, safely, hand and power tools and other equipment commonly used in mechanical repair and maintenance • handle and properly dispose of environmentally hazardous materials used in mechanical repair and maintenance. <p>Technology Integration</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • use new and emerging products and technological advances in auto mechanics; e.g., examine the effects of current technological advances in the auto mechanics industry and explain the impact of current technology on the job descriptions of future auto mechanics trade workers.

General Outcomes	Specific Outcomes
<p>Students will demonstrate understanding of the composition and function of a drivetrain.</p>	<p>Providing Service</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify client relationships or interactions within the field of auto mechanics • identify services needed, required or provided • collect necessary information to complete a purchase or to fill out a work order • recognize the importance of customer or client service to all businesses/industries • demonstrate professional practices and work habits • strive to meet and exceed the client’s expectations.
	<p>Drivetrain Repair</p> <p>Drivetrain</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • explain the operation and power flow in various transmissions and transaxles • describe drive axle operation and the components of four-wheel, front-wheel and rear-wheel drive vehicles • describe the types of differential assemblies and explain the operation of full floating and semi-floating models • describe the operation of a limited slip differential assembly.
	<p>Driveline</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate driveline service procedures; e.g., <ul style="list-style-type: none"> – remove and replace a clutch assembly – identify the serviceability of each part – adjust the linkage to a specified clearance – demonstrate how to inspect and replace fluids as required in transmissions, transaxle transfer cases and differential assemblies – demonstrate how to inspect and recommend service for constant velocity joints, seals, the driveshaft, drive axles and U-joints.
	<p>Replacement</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate unit replacement; e.g., <ul style="list-style-type: none"> – remove and replace a specified transmission – replace constant velocity joints – replace the differential assembly.

General Outcomes	Specific Outcomes
<p>Students will demonstrate the ability to service a steering system.</p>	<p>Steering Inspection and Repair</p> <p>Operation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • describe the operation of the common steering gear assemblies • identify the common types of steering gears used to create the necessary mechanical advantages to overcome tire resistance; e.g., rack and pinion and steering boxes • describe modern steering linkages • describe the construction of a tie rod assembly and explain how it is built to accommodate vertical as well as horizontal movement • explain the operation of four-wheel steering and outline the advantages of this type of steering over a conventional two-wheel system. <p>Service Steering System (All work inspected by a certified technician)</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • check and adjust the power steering fluid level • check the lubricant level in a manual steering gear and add the appropriate lubricant if necessary • clean and inspect the steering linkage for wear and replace it if necessary • inspect steering joints and bushings and replace them if necessary • adjust a manual steering gear • inspect and service a rack and pinion steering gear • inspect and service power steering components.
<p>Students will demonstrate the ability to service a suspension system.</p>	<p>Suspension Inspection and Repair</p> <p>Operation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate an understanding of suspension systems • describe the basic types of front and rear suspensions used on motor vehicles; e.g., short arm suspension, long arm suspension and MacPherson strut • explain the advantage of using different types of suspensions • list the positive and negative aspects of using coil, leaf, torsion, rubber biscuit and air springs • list the basic types of shock absorbers and describe their operation, mounting techniques and methods of testing; e.g., compare gas shock absorbers to oil-filled shock absorbers.

General Outcomes**Specific Outcomes****Service Suspension System**

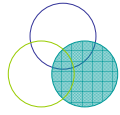
(All work inspected by a certified technician)

Students will:

- describe typical wheel bearing faults; e.g., bent cage, etching, overheating and worn seal
- inspect, repack or replace front or rear wheel bearings
- lubricate suspension joints where necessary
- inspect suspension components for damage and wear
- explain how ball joints are checked for wear
- remove and replace a:
 - shock absorber
 - coil spring
 - ball joint
 - strut
- identify the appropriate lifting and towing procedures relative to electronically controlled suspension systems
- discuss major steering suspension angles and perform wheel alignments
- adjust toe-in as necessary.

ENSURING QUALITY

General Outcomes	Specific Outcomes
<p>Students will demonstrate an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.</p>	<p>Task Management</p> <p>Outcomes</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• read and/or listen to instructions• ask questions to clarify expected outcomes, procedures and timelines. <p>Decision Making</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the parameters of the task• generate and review alternative ideas and their consequences• make a decision or select an idea. <p>Planning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the steps involved in managing a project• prepare a sample project plan, including budget and timeline• identify available tools, equipment and materials. <p>Performance Standards</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify expected standards for a product or service• work to agreed quality standards and specifications• select and use appropriate tools and technology for a task or project. <p>Evaluation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify opportunities for improving quality• establish expectations and measures for improvements• create evidence to support an understanding of task management and skill development for inclusion in a personal portfolio.



ACADEMIC COMPETENCIES: These are the minimum academic competencies that provide a foundation for further learning. The following outcomes are provided as a reminder to address these academic competencies within the occupational context and to reinforce cross-curricular connections.

COMMUNICATION

General Outcomes	Specific Outcomes
Students will demonstrate effective listening, speaking, reading and writing skills to prepare for employment.	Listening, Speaking, Reading and Writing <i>Students will:</i> <ul style="list-style-type: none">• read, view and interpret occupation-related materials for a specific purpose; e.g.,<ul style="list-style-type: none">– read related health and safety documents– read terms of employment documents– follow written instructions specific to an occupational area• create text for a specific purpose that clearly communicates information; e.g.,<ul style="list-style-type: none">– write a résumé– write a job description– submit job application forms• communicate thoughts and ideas and listen to the thoughts and ideas of others to effectively complete a task; e.g.,<ul style="list-style-type: none">– follow oral instructions– give effective oral instructions when necessary.

THINKING

Students will research information, use creative thinking skills and use effective problem-solving strategies to solve problems.	Problem Solving, Decision Making, Finding Information and Creative Thinking <i>Students will:</i> <ul style="list-style-type: none">• demonstrate an effective problem-solving model; e.g.,<ul style="list-style-type: none">– identify the need for a solution to a problem/issue– identify why information is needed; e.g., make decisions, inform, persuade• identify appropriate actions and select and apply information that meets their purposes and needs• evaluate the results in terms of expected outcomes and assess the impact of information on their purpose and audience.
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NUMERACY

General Outcomes	Specific Outcomes
<p>Students will demonstrate mathematical operations to effectively solve problems in a meaningful context.</p>	<p>Basic Operations, Patterns and Relationships, Shape and Space, and Statistics and Probability</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• apply arithmetic operations, e.g., addition, subtraction, multiplication or division, to whole numbers and decimals and use number operations when creating and solving money problems• use calculators or computers, to perform calculations involving large and small numbers, when solving problems• apply concepts of rate, ratio, percentage and proportion• demonstrate a number sense for whole numbers 0 to 100 000 and explore proper fractions and decimals• estimate, measure and compare, using decimal numbers and standard units of measure, to solve problems in everyday contexts; e.g., mass, length, volume, time, perimeter, surface area• use metric and imperial units of measure.

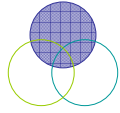
INFORMATION TECHNOLOGY

<p>Students will demonstrate the effective use of information technology to perform daily workplace operations.</p>	<p>Computer Operations and Computer Applications</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• model and assume personal responsibility for the ethical use of information technologies• demonstrate appropriate telephone operations within the workplace; e.g., answer telephone calls appropriately, locate numbers and make telephone calls• use computer operations to assist in the completion of daily workplace operations; e.g.,<ul style="list-style-type: none">– use basic keyboarding skills– store, organize and retrieve information correctly– locate and select information and ideas using appropriate technology and information systems; e.g., Internet– access, send and retrieve e-mail and attachments• demonstrate procedures for connecting and using audio, video and digital equipment• demonstrate procedures for sending and receiving faxes and setting up a fax machine• demonstrate procedures for copying and printing documents.
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AUTO SERVICES 20-4 GENERAL OUTCOMES

Employability Competencies	Students will develop these competencies throughout the learning process and demonstrate them in daily life and the workplace.
Managing Transitions	<ul style="list-style-type: none"> • Students will apply their abilities and interests toward achieving learning goals. • Students will practise the skills and abilities needed to manage change. • Students will orient themselves toward an occupation that reflects their personal aptitudes and interests.
Personal Management	<ul style="list-style-type: none"> • Students will increase their self-esteem and confidence and enhance their ability to set personal goals and priorities. • Students will understand risks and be accountable for their actions.
Working with Others	<ul style="list-style-type: none"> • Students will practise effective communication skills and strategies in an occupational context. • Students will demonstrate the ability to understand and work within the culture of a group. • Students will plan and make decisions with others.
Occupational Competencies	Students will develop and demonstrate the following competencies to succeed in a specific occupation or career.
Achieving Results	<ul style="list-style-type: none"> • Students will orient themselves toward an occupation within an auto services career environment. • Students will demonstrate safe workplace practices and procedures. • Students will develop an increased awareness of technology to develop a high-quality product or service. • Students will develop a comprehensive evaluation of a motor vehicle. • Students will develop skills to work with customers in the automotive industry. • Students will apply electrical principles and concepts to test electrical circuits and components. • Students will identify and demonstrate procedures for installing a variety of electrical accessories.
Ensuring Quality	<ul style="list-style-type: none"> • Students will continue to develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.
Academic Competencies	Students will continue to develop these minimum academic competencies that provide a foundation for further learning.
Communication	<ul style="list-style-type: none"> • Students will demonstrate effective listening, speaking, reading and writing skills.
Thinking	<ul style="list-style-type: none"> • Students will apply creative thinking skills to solve problems.
Numeracy	<ul style="list-style-type: none"> • Students will apply mathematical concepts to solve occupational problems.
Information Technology	<ul style="list-style-type: none"> • Students will enhance their performance by using information technology to help complete tasks.

AUTO SERVICES 20-4



EMPLOYABILITY COMPETENCIES: These competencies are developed throughout the learning process and are demonstrated in daily life and the workplace. Students will develop and demonstrate these competencies through individual effort and interpersonal interaction while completing a variety of projects/activities.

MANAGING TRANSITIONS

General Outcomes	Specific Outcomes
<p>Students will apply their abilities and interests toward achieving learning goals.</p>	<p>Lifelong Learning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • relate learning preferences and strengths to formal and informal learning opportunities and identify post-secondary opportunities within the related field • assess learning goals and current competencies, identify competencies needing development and identify and prioritize learning goals • create a pathway of senior high school courses to reflect learning goals • identify educational possibilities; e.g., Registered Apprenticeship Program (RAP), Green Certificate, Career and Technology Studies (CTS) and Career Internship.
<p>Students will practise the skills and abilities needed to manage change.</p>	<p>Adapting to Change</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify goals, responsibilities and commitments • assess and reflect on the success of an action plan; e.g., <ul style="list-style-type: none"> – create alternative choices to deal with unexpected change – identify stressors in personal environments that they can and cannot change • identify the need for personal support and create an inventory of available personal and community sources of support.
<p>Students will orient themselves toward an occupation that reflects their personal aptitudes and interests.</p>	<p>Career Development</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • assess work preferences and nonpreferences (e.g., indoor, outdoor, shift work), assess life/work options and outline career goals and paths • work in and seek out a variety of roles and responsibilities • measure and celebrate personal contributions to workplace goals; e.g., paid, unpaid or volunteer work • orient themselves to the workplace through community partnerships and assess personal performance in terms of workplace expectations.

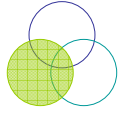
PERSONAL MANAGEMENT

General Outcomes	Specific Outcomes
Students will increase their self-esteem and confidence and enhance their ability to set personal goals and priorities.	Self-development <i>Students will:</i> <ul style="list-style-type: none">• re-evaluate an action plan to develop strengths and talents• use strengths and talents to achieve personal goals• clarify acceptable and appropriate behaviours for specific activities and roles• act ethically in personal, community and workplace contexts and accept the consequences of their actions.
Students will understand risks and be accountable for their actions.	Risk Management <i>Students will:</i> <ul style="list-style-type: none">• follow health and safety procedures; e.g., at home, at school, in the community and in the workplace• identify potential hazards, take corrective action and develop and practise action plans to ensure safety• practise personal emergency responses• assess their comfort level with, and the consequences of, taking risks.

WORKING WITH OTHERS

Students will practise effective communication skills and strategies in an occupational context.	Interpersonal Communication <i>Students will:</i> <ul style="list-style-type: none">• assess the effectiveness of communication strategies used to communicate thoughts and feelings; e.g.,<ul style="list-style-type: none">– listen without interrupting– contribute to be heard– disagree courteously– accept conflicting opinions– use appropriate body language• assess verbal and nonverbal communication strategies• apply social norms to build specific relationships• demonstrate the ability to accept praise and/or criticism.
Students will demonstrate the ability to understand and work within the culture of a group.	Building Community <i>Students will:</i> <ul style="list-style-type: none">• interact with others in a courteous manner• accommodate the beliefs of others in work and personal environments and show respect for differences in beliefs, abilities, etiquette and styles of interaction• identify opportunities for participation in community growth.

General Outcomes	Specific Outcomes
<p>Students will plan and make decisions with others.</p>	<p>Teamwork</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • participate effectively as group members; e.g., <ul style="list-style-type: none"> – generate ideas – assess resources – contribute abilities and interests – monitor progress – share responsibility for completion of a task • assume various roles within a group; e.g., leadership • clarify the expected outcomes of teamwork.



OCCUPATIONAL COMPETENCIES: Students will develop and demonstrate the following competencies to succeed in a specific occupation or career. They will achieve results through a variety of projects/activities as appropriate to enhance their knowledge and skills. Students will ensure the quality of their work through effective task management and will highlight their achievements in a career-based portfolio.

ACHIEVING RESULTS

General Outcomes	Specific Outcomes
<p>Students will orient themselves toward an occupation within an auto services career environment.</p>	<p>Career Awareness</p> <p>Orientation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify entry-level competencies • identify post-secondary opportunities • recognize entrepreneurial opportunities within the industry • introduce themselves to local business/industry operations • match their personal interests to their job search; e.g., <ul style="list-style-type: none"> – identify sources of support for investigating and finding work – describe entry-level requirements – recognize potential career ladders. <p>Standards</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • develop workplace protocols, procedures and standards of conduct; e.g., <ul style="list-style-type: none"> – demonstrate appropriate work habits – use safe and sanitary practices – demonstrate pride in themselves – demonstrate pride in their work performance – show respect for others – respect the property of others.
<p>Students will demonstrate safe workplace practices and procedures.</p>	<p>Workplace Health and Safety</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify safety device locations and procedures within the workplace environment • demonstrate knowledge of, and the ability to access information about, Occupational Health and Safety (OHS) and the Workers' Compensation Board (WCB) • demonstrate knowledge of, and adherence to, safety rules that are specific to available tools, equipment and materials

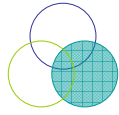
General Outcomes	Specific Outcomes
<p>Students will develop an increased awareness of technology to develop a high-quality product or service.</p>	<ul style="list-style-type: none"> • demonstrate knowledge of health hazards associated with the use of chemicals and materials and retrieve information on Material Safety Data Sheets (MSDS) using appropriate print and Internet resources • select and wear personal protective equipment (PPE) appropriate to the specific task • demonstrate knowledge of environmental issues relating to the procedures for handling hazardous waste • demonstrate an understanding of the Workplace Hazardous Materials Information System (WHMIS) as it relates to the field of study and identify WHMIS symbols, classes and labelling requirements. <p>Products and Service</p> <p>Auto Services</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and locate service requirements for a specific make and model of vehicle as per the manufacturer's recommendations; e.g., owner's manual, manufacturer's specifications, aftermarket literature • demonstrate general vehicle maintenance and service; e.g., <ul style="list-style-type: none"> – oil, lubrication (lube) and filter changes – tire maintenance – fluids, coolant – battery, fuses – belts, hoses – headlights, wipers – general cleaning • use, safely, hand and power tools and other equipment commonly used in mechanical service and maintenance • identify and select available tools and equipment for the task • maintain and store tools properly. <p>Materials</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate the use of materials needed for general maintenance; e.g., <ul style="list-style-type: none"> – hardware items; e.g., cotter pins, nuts, bolts, washers, snap rings, screws – fluids; e.g., oil, coolant, fuel, grease, additives, cleaners • choose appropriate materials for various tasks and minimize waste through proper use • read labels on chemical containers to check for uses and hazards • handle and properly dispose of environmentally hazardous materials used in mechanics shops; e.g., reread Material Safety Data Sheets (MSDS).

General Outcomes	Specific Outcomes
<p>Students will develop a comprehensive evaluation of a motor vehicle.</p>	<p>Technology Integration</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify new and emerging products and technological advances used in auto services.
	<p>Providing Service</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify client relationships or interactions within the field of auto services • identify services required or provided • collect necessary information to complete a purchase or to fill out a work order • recognize the importance of customer or client service to all businesses/industries • demonstrate professional practices and work habits • strive to meet and exceed the client's expectations.
	<p>Vehicle Inspection and Evaluation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • complete an evaluation checklist; e.g., insurance inspection, out-of-province inspection guidelines, write-off inspection • examine and report on the systems that require repair to determine the extent of reconditioning needed to return the systems to serviceability • use a consumer guide to determine the vehicle characteristics that would contribute to market value; e.g., year, make, model, options, mileage, relative condition, emotional appeal and popularity • list the probable and possible parts required for a complete repair using original equipment manufacturer (OEM), aftermarket and used parts • use an accepted industry labour guide to calculate the correct labour charges for any required replacement parts, while considering all modifications to, or options for, the vehicle • include in the repair estimate any costs, shop supplies, taxes or other charges that would contribute to the total estimated price • identify the wholesale value of a subject vehicle using accepted wholesale reference guides; e.g., Red Book, Black Book, Blue Book and Internet resources • calculate the market value of a subject vehicle by comparing pricing on three similar vehicles in the local marketplace.

General Outcomes	Specific Outcomes
<p>Students will develop skills to work with customers in the automotive industry.</p>	<p>Automotive Industry Customer Service Practices</p> <p>Service Components</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate the ability to locate the information needed to write work orders • demonstrate the ability to work with customers to correctly complete work orders • create, correctly, an estimate, using industry standard guidelines for labour costs • explain repair costs to customers • complete invoicing procedures. <p>Parts</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • locate parts suppliers and estimate costs of parts • maintain a stockroom • control inventory.
<p>Students will apply electrical principles and concepts to test electrical circuits and components.</p>	<p>Electrical Systems (Charging, Starting and Lights)</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and describe series and parallel circuits in an automobile • demonstrate the safe use of electrical tools and equipment • demonstrate the correct procedures for measuring voltage, amperage and resistance • demonstrate the correct procedure for testing and servicing a battery; e.g., load test, clean and service cables • demonstrate the correct procedures for servicing automobile lamp bulbs, fuses and circuit breakers; e.g., headlamps, marker lamps, dashboard and interior lamps.
<p>Students will identify and demonstrate procedures for installing a variety of electrical accessories.</p>	<p>Electrical Accessories Installation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and describe the correct procedure for replacing the components of an automobile sound system; e.g., controllers, amplifiers, speakers • identify and describe the correct procedure for servicing power circuits in an automobile; e.g., electric windows, door locks, seats, mirrors • remove and install interior trim panels as necessary to access power units, speakers and convenience options • access and connect to power and convenience circuits • service existing connections and correctly repair them as necessary.

ENSURING QUALITY

General Outcomes	Specific Outcomes
<p>Students will continue to develop an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.</p>	<p>Task Management</p> <p>Outcomes</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• read and/or listen to instructions• ask questions to clarify expected outcomes, procedures and timelines. <p>Decision Making</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the parameters of the task• generate and review alternative ideas and their consequences• make a decision or select an idea. <p>Planning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the steps involved in managing a project• prepare a sample project plan, including budget and timeline• identify available tools, equipment and materials. <p>Performance Standards</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify expected standards for a product or service• work to agreed quality standards and specifications• select and use appropriate tools and technology for a task or project. <p>Evaluation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify opportunities for improving quality• establish expectations and measures for improvements• create evidence to support an understanding of task management and skill development for inclusion in a personal portfolio.



ACADEMIC COMPETENCIES: These are the minimum academic competencies that provide a foundation for further learning. The following outcomes are provided as a reminder to address these academic competencies within the occupational context and to reinforce cross-curricular connections.

COMMUNICATION

General Outcomes	Specific Outcomes
Students will demonstrate effective listening, speaking, reading and writing skills.	Listening, Speaking, Reading and Writing <i>Students will:</i> <ul style="list-style-type: none">• read, view and interpret occupation-related materials; e.g.,<ul style="list-style-type: none">– use related occupational terms– identify occupation-related literature– interpret and follow written instructions• select and create a text format to suit a purpose and audience, e.g., forms, letters, reports, memos, résumé, and:<ul style="list-style-type: none">– describe uses of writing skills in related occupations– write a letter of inquiry– write a letter of thanks– complete job applications• listen and present information in a clear, concise manner; e.g.,<ul style="list-style-type: none">– listen attentively to organize and classify information and ideas– organize main ideas and key messages with clarity.

THINKING

Students will apply creative thinking skills to solve problems.

Problem Solving, Decision Making and Creative Thinking

Students will:

- apply a problem-solving model to identify the problem/issue
- identify appropriate actions and develop several alternatives for each promising idea
- evaluate the results, in terms of expected outcomes related to the initial problem, and evaluate personal satisfaction with the outcome of the idea; e.g., product/process.

NUMERACY

General Outcomes	Specific Outcomes
<p>Students will apply mathematical concepts to solve occupational problems.</p>	<p>Basic Operations, Patterns and Relationships, Shape and Space, and Statistics and Probability</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• apply arithmetic operations, e.g., addition, subtraction, multiplication or division, to whole numbers and decimals and use number operations when creating and solving money problems• use calculators or computers, to perform calculations involving large and small numbers, when solving problems• apply concepts of rate, ratio, percentage and proportion to solve problems in a meaningful context• demonstrate a number sense for whole numbers 0 to 100 000 and explore proper fractions and decimals• estimate, measure and compare, using decimal numbers and standard units of measure, to solve problems in everyday contexts; e.g., mass, length, volume, time, perimeter, surface area• use metric and imperial units of measure.

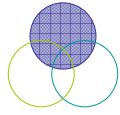
INFORMATION TECHNOLOGY

<p>Students will enhance their performance by using information technology to help complete tasks.</p>	<p>Computer Operations and Computer Applications</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• demonstrate appropriate language and etiquette when using information technology• demonstrate appropriate telephone operations; e.g., answer telephone calls appropriately, locate numbers and make telephone calls• demonstrate basic computer operations to complete a task; e.g.,<ul style="list-style-type: none">– use basic keyboarding skills– store, organize and retrieve information correctly– locate and select information and ideas using appropriate technology and information systems; e.g., Internet– access, send and retrieve e-mail and attachments• demonstrate procedures for connecting and using audio, video and digital equipment• demonstrate procedures for sending and receiving faxes and setting up a fax machine• demonstrate procedures for copying and printing documents.
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AUTO SERVICES 30-4 GENERAL OUTCOMES

Employability Competencies	Students will develop these competencies throughout the learning process and demonstrate them in daily life and the workplace.
Managing Transitions	<ul style="list-style-type: none"> • Students will consistently demonstrate personal discovery and continuous learning. • Students will manage change effectively to support their goals. • Students will prepare themselves for entry-level employment in an occupation that reflects their personal aptitudes and interests.
Personal Management	<ul style="list-style-type: none"> • Students will exhibit self-esteem and confidence through the achievement of personal goals. • Students will manage risks to achieve both personal and workplace goals.
Working with Others	<ul style="list-style-type: none"> • Students will model effective communication skills and strategies in the home, school, community and workplace. • Students will promote equity in work and community endeavours. • Students will demonstrate the ability to complete tasks in a team environment.
Occupational Competencies	Students will develop and demonstrate the following competencies to succeed in a specific occupation or career.
Achieving Results	<ul style="list-style-type: none"> • Students will prepare for entry-level employment within an auto services career environment. • Students will demonstrate entry-level standards of safe workplace practices and procedures. • Students will use technology to develop a high-quality product or service. • Students will determine the condition of an engine. • Students will clean and detail a vehicle to entry-level standards.
Ensuring Quality	<ul style="list-style-type: none"> • Students will demonstrate an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.
Academic Competencies	Students will continue to develop these minimum academic competencies that provide a foundation for further learning.
Communication	<ul style="list-style-type: none"> • Students will demonstrate effective listening, speaking, reading and writing skills to prepare for employment.
Thinking	<ul style="list-style-type: none"> • Students will research information, use creative thinking skills and use effective problem-solving strategies to solve problems.
Numeracy	<ul style="list-style-type: none"> • Students will demonstrate mathematical operations to effectively solve problems in a meaningful context.
Information Technology	<ul style="list-style-type: none"> • Students will demonstrate the effective use of information technology to perform daily workplace operations.

AUTO SERVICES 30-4



EMPLOYABILITY COMPETENCIES: These competencies are developed throughout the learning process and are demonstrated in daily life and the workplace. Students will develop and demonstrate these competencies through individual effort and interpersonal interaction while completing a variety of projects/activities.

MANAGING TRANSITIONS

General Outcomes	Specific Outcomes
<p>Students will consistently demonstrate personal discovery and continuous learning.</p>	<p>Lifelong Learning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify learning opportunities related to learning goals, commitments and resources; e.g., <ul style="list-style-type: none"> – identify opportunities for further education/training – locate needed financial support systems – locate needed personal support systems • practise what has been learned to build competence and confidence and evaluate the application of competencies to learning goals • create a plan that demonstrates continuous learning; e.g., <ul style="list-style-type: none"> – analyze requirements for graduation and for further education/training – modify a learning plan to reflect requirements and opportunities.
<p>Students will manage change effectively to support their goals.</p>	<p>Adapting to Change</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • prioritize and assign resources to meet commitments and goals • prioritize commitments and goals to achieve a balanced lifestyle • redefine an action plan as situations change; e.g., <ul style="list-style-type: none"> – use adaptive strategies – redefine personal goals – select personal coping mechanisms • access available and appropriate sources of support • identify opportunities for improvement and innovation; e.g., entrepreneurship.

General Outcomes	Specific Outcomes
<p>Students will prepare themselves for entry-level employment in an occupation that reflects their personal aptitudes and interests.</p>	<p>Career Development</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • analyze elements of job satisfaction; e.g., recognition, environment, pay, benefits, prestige • build personal career paths and networks • analyze how work contributes to societal and economic needs and a sense of responsibility • prepare for employment through community partnership activities and organize and complete specific job tasks effectively and efficiently.

PERSONAL MANAGEMENT

Students will exhibit self-esteem and confidence through the achievement of personal goals.

Self-development

Students will:

- continue to create a long-term self-development plan in which they consider accomplishments and redefine self-development goals
- demonstrate entry-level self-presentation appropriate to the activity and role
- maintain a high standard of personal ethics when interacting with others.

Students will manage risks to achieve both personal and workplace goals.

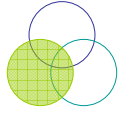
Risk Management

Students will:

- maintain health and safety procedures; e.g., at home, at school, in the community and in the workplace
- monitor success in reducing the impact of hazards on themselves and others
- demonstrate concern for the safety of others by exhibiting appropriate behaviour in the workplace
- work with others to respond to emergencies
- take planned risks to contribute to personal growth.

WORKING WITH OTHERS

General Outcomes	Specific Outcomes
<p>Students will model effective communication skills and strategies in the home, school, community and workplace.</p>	<p>Interpersonal Communication</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• communicate thoughts and feelings appropriately; e.g.,<ul style="list-style-type: none">– listen without interrupting– contribute to be heard– disagree courteously– accept conflicting opinions– use appropriate body language• maintain a balance between speaking, listening and responding• work together to achieve goals• demonstrate the ability to deal constructively with conflict.
<p>Students will promote equity in work and community endeavours.</p>	<p>Building Community</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• demonstrate and model courteous behaviour in daily interactions• demonstrate respect for others and a shared understanding of diverse beliefs, etiquette and styles of interaction• assess their personal contribution to community growth.
<p>Students will demonstrate the ability to complete tasks in a team environment.</p>	<p>Teamwork</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• assess the effectiveness of group and personal contributions; e.g.,<ul style="list-style-type: none">– generate ideas– assess resources– contribute abilities and interests– monitor progress– share responsibility for completion of a task• expand their abilities to contribute to team goals.



OCCUPATIONAL COMPETENCIES: Students will develop and demonstrate the following competencies to succeed in a specific occupation or career. They will achieve results through a variety of projects/activities as appropriate to enhance their knowledge and skills. Students will ensure the quality of their work through effective task management and will highlight their achievements in a career-based portfolio.

ACHIEVING RESULTS

General Outcomes	Specific Outcomes
<p>Students will prepare for entry-level employment within an auto services career environment.</p>	<p>Career Awareness</p> <p>Preparation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • assess entry-level competencies • recognize opportunities for further education/training • select post-secondary opportunities • identify local entrepreneurs • establish contacts with local businesses/industries • present marketable skills and strengths; e.g., <ul style="list-style-type: none"> – write a letter of application – prepare a résumé – complete application forms – identify contacts and references – collect evidence of competencies in a portfolio. <p>Standards</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate workplace protocols, procedures and standards of conduct; e.g., <ul style="list-style-type: none"> – demonstrate appropriate work habits – demonstrate effective human relations techniques in the workplace – practise safety in the workplace – demonstrate acceptable verbal and nonverbal communication skills – practise personal and public hygiene procedures – demonstrate entry-level competency in tools and equipment usage – use supplies correctly – follow good storage practices – demonstrate pride in their work performance – demonstrate a willingness to work – demonstrate respect for others – follow accepted principles and procedures – recognize opportunities for further education/training.

General Outcomes	Specific Outcomes
<p>Students will demonstrate entry-level standards of safe workplace practices and procedures.</p>	<p>Workplace Health and Safety</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and explain the use of safety devices within the workplace • demonstrate knowledge of, and the ability to access information about, Occupational Health and Safety (OHS) and the Workers' Compensation Board (WCB) • demonstrate a prework and postwork hazard assessment • demonstrate knowledge of, and adherence to, safety rules that are specific to available tools, equipment and materials • demonstrate knowledge of health hazards associated with the use of chemicals and materials and retrieve information on Material Safety Data Sheets (MSDS) using appropriate print and Internet resources • model safety consciousness by selecting and wearing personal protective equipment (PPE) appropriate to the specific task • demonstrate knowledge of environmental issues relating to the procedures for handling hazardous waste • demonstrate an understanding of the Workplace Hazardous Materials Information System (WHMIS) as it relates to the field of study and identify WHMIS symbols, classes and labelling requirements.
<p>Students will use technology to develop a high-quality product or service.</p>	<p>Products and Service</p> <p>Auto Services</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and locate service requirements for a specific make and model of vehicle as per the manufacturer's recommendations; e.g., owner's manual, manufacturer's specifications, aftermarket literature • perform general vehicle maintenance and service to the satisfaction of the customer; e.g., <ul style="list-style-type: none"> – oil, lubrication (lube) and filter changes – tire maintenance – fluids, coolant – battery, fuses – belts, hoses – headlights, wipers – general cleaning • use, safely, hand and power tools and other equipment commonly used in mechanical repair and maintenance • identify and select available tools and equipment for the task • maintain and store tools properly.

General Outcomes	Specific Outcomes
<p>Students will determine the condition of an engine.</p>	<p>Materials</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate the use of materials needed for general maintenance; e.g., <ul style="list-style-type: none"> – hardware items; e.g., cotter pins, nuts, bolts, washers, snap rings, screws – fluids; e.g., oil, coolant, fuel, grease, additives, cleaners • choose appropriate materials for various tasks and minimize waste through proper use • read labels on chemical containers to check for uses and hazards • handle and properly dispose of environmentally hazardous materials used in mechanics shops; e.g., reread Material Safety Data Sheets (MSDS).
	<p>Technology Integration</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • use new and emerging products and technological advances needed in auto services; e.g., examine the effects of current technological advances in the auto services industry and explain the impact of current technology on the job descriptions of future auto services trade workers.
	<p>Providing Service</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify client relationships or interactions within the field of auto services • identify services required or provided • collect necessary information to complete a purchase or to fill out a work order • recognize the importance of customer or client service to all businesses/industries • demonstrate professional practices and work habits • strive to meet and exceed the client's expectations.
	<p>Engine Diagnosis and Tune-up</p> <p>Diagnosis</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • list possible engine problems based on the information provided; e.g., owner complaints • describe, by listening to, observing and touching, a running and/or stopped engine, based on whether abnormalities exist; e.g., noises, blow-by, oil leaks, loose connections/parts, oil/coolant conditions, belts, hoses and filters

General Outcomes

Specific Outcomes

- demonstrate diagnostic procedures; e.g.,
 - analyze the intake manifold vacuum
 - check the ignition timing
 - check for proper idle speeds
 - check the engine oil pressure
 - check cylinder compression readings
 - perform wet and dry tests
 - check exhaust emissions
- identify abnormalities in the vehicle, using gauges and lights, including self-diagnostics; e.g., scan tool
- use an engine analyzer and/or a computerized tester to describe the condition of various engine systems as per the capability of the test unit
- compile all information and generate a report for the customer outlining the defects found and necessary corrections.

Electrical Component Testing and Repair

Students will:

- demonstrate how to:
 - test fuel pump pressure and capacity
 - service fuel injectors
 - use diagnostic equipment to diagnose a problem
 - service spark plugs, wires, the distributor cap and the pick-up coil
 - check and adjust the ignition timing
 - operate the starter and determine if a problem exists; e.g., noises, drive engagement, speed
 - check the starter amperage draw and compare it with the manufacturer's specifications
 - check for fluctuations in the starter circuit voltage
 - test and replace a starter
 - service the battery and check its condition
 - do a visual check; e.g., of wires, connections, belt condition and tension
 - check the alternator output and voltage regulation and correct them as necessary
 - check the alternator for noise and vibration and service it as required
 - check for fluctuations in the charging circuit voltage and correct any faults
 - test and replace an alternator
 - diagnose computer-controlled systems and document faults.

Fuel System

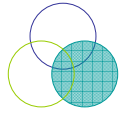
Students will:

- demonstrate the ability to inspect and service the fuel system; e.g.,
 - inspect the fuel filter/strainer and replace it if necessary
 - inspect, visually, and test a typical fuel injection system
 - test the fuel pump pressure and capacity and repair or replace the pump if necessary.

General Outcomes	Specific Outcomes
<p>Students will clean and detail a vehicle to entry-level standards.</p>	<p>Detailing</p> <p>Interior/Exterior</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • identify and describe the use of materials available to enhance the appearance of a vehicle • identify and demonstrate the correct procedures to follow when applying cleaning, polishing and treatment agents to various surfaces; e.g., interior and exterior cleaning • explain the value of using waxes to treat painted surfaces, including longevity and monetary implications; e.g., exterior protective coatings • demonstrate the correct procedures to follow when cleaning and treating interior and exterior surfaces; e.g., paint, glass, vinyl, rubber and upholstery. <p>Engine Cleaning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none"> • demonstrate the correct cleaning and treatment of engine parts • demonstrate the safe handling and application of volatile engine cleaners; e.g., engine shampoo • demonstrate knowledge of engine-cleaning procedures and follow these procedures to prevent damage to electrical systems or other parts • demonstrate knowledge of safety rules and procedures in the handling of dangerous cleaning agents and follow these rules and procedures.

ENSURING QUALITY

General Outcomes	Specific Outcomes
<p>Students will demonstrate an understanding of the value of effective task management processes by applying knowledge and skills to simulated and actual work situations.</p>	<p>Task Management</p> <p>Outcomes</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• read and/or listen to instructions• ask questions to clarify expected outcomes, procedures and timelines. <p>Decision Making</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the parameters of the task• generate and review alternative ideas and their consequences• make a decision or select an idea. <p>Planning</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify the steps involved in managing a project• prepare a sample project plan, including budget and timeline• identify available tools, equipment and materials. <p>Performance Standards</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify expected standards for a product or service• work to agreed quality standards and specifications• select and use appropriate tools and technology for a task or project. <p>Evaluation</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• identify opportunities for improving quality• establish expectations and measures for improvements• create evidence to support an understanding of task management and skill development for inclusion in a personal portfolio.



ACADEMIC COMPETENCIES: These are the minimum academic competencies that provide a foundation for further learning. The following outcomes are provided as a reminder to address these academic competencies within the occupational context and to reinforce cross-curricular connections.

COMMUNICATION

General Outcomes	Specific Outcomes
<p>Students will demonstrate effective listening, speaking, reading and writing skills to prepare for employment.</p>	<p>Listening, Speaking, Reading and Writing</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• read, view and interpret occupation-related materials for a specific purpose; e.g.,<ul style="list-style-type: none">– read related health and safety documents– read terms of employment documents– follow written instructions specific to an occupational area• create text for a specific purpose that clearly communicates information; e.g.,<ul style="list-style-type: none">– write a résumé– write a job description– submit job application forms• communicate thoughts and ideas and listen to the thoughts and ideas of others to effectively complete a task; e.g.,<ul style="list-style-type: none">– follow oral instructions– give effective oral instructions when necessary.

THINKING

Students will research information, use creative thinking skills and use effective problem-solving strategies to solve problems.

Problem Solving, Decision Making, Finding Information and Creative Thinking

Students will:

- demonstrate an effective problem-solving model; e.g.,
 - identify the need for a solution to a problem/issue
 - identify why information is needed; e.g., make decisions, inform, persuade
- identify appropriate actions and select and apply information that meets their purposes and needs
- evaluate the results in terms of expected outcomes and assess the impact of information on their purpose and audience.

NUMERACY

General Outcomes	Specific Outcomes
<p>Students will demonstrate mathematical operations to effectively solve problems in a meaningful context.</p>	<p>Basic Operations, Patterns and Relationships, Shape and Space, and Statistics and Probability</p> <p><i>Students will:</i></p> <ul style="list-style-type: none">• apply arithmetic operations, e.g., addition, subtraction, multiplication or division, to whole numbers and decimals and use number operations when creating and solving money problems• use calculators or computers, to perform calculations involving large and small numbers, when solving problems• apply concepts of rate, ratio, percentage and proportion• demonstrate a number sense for whole numbers 0 to 100 000 and explore proper fractions and decimals• estimate, measure and compare, using decimal numbers and standard units of measure, to solve problems in everyday contexts; e.g., mass, length, volume, time, perimeter, surface area• use metric and imperial units of measure.

INFORMATION TECHNOLOGY

Students will demonstrate the effective use of information technology to perform daily workplace operations.

Computer Operations and Computer Applications

Students will:

- model and assume personal responsibility for the ethical use of information technologies
- demonstrate appropriate telephone operations within the workplace; e.g., answer telephone calls appropriately, locate numbers and make telephone calls
- use computer operations to assist in the completion of daily workplace operations; e.g.,
 - use basic keyboarding skills
 - store, organize and retrieve information correctly
 - locate and select information and ideas using appropriate technology and information systems; e.g., Internet
 - access, send and retrieve e-mail and attachments
- demonstrate procedures for connecting and using audio, video and digital equipment
- demonstrate procedures for sending and receiving faxes and setting up a fax machine
- demonstrate procedures for copying and printing documents.