Auburn School District Framework: Intro to Auto 1-2, Automotive Technology Advanced 1-2 & 3-4

Course: NATEF/ASE Automotive Technician

Total Framework Hours: 1080 Hours

CIP Code: 470604

Type: Preparatory

Career Cluster: Transportation Distribution and Logistics

Date Last Modified: Friday, April 15, 2016

Resources and Standard used in Framework Development:

Standards used in this framework are from the ASE Student Certification Test Specifications and Task Lists for the 2012 NATEF Standards - Automobile Series.

Unit 1 CAREER PLANNING

Hours: 60

Performance Assessment(s):

Performance Assessments: Create a High School and beyond plan and a portfolio for a career in an area of choice. Using a career research tools (such as Career Cruising, ASVAB, WOIS), students will prepare a report covering their personal interest, aptitudes and abilities and cross reference potential career pathways that appeal to them. The report should include an assessment of personal strengths for success in that particular field.

Leadership Alignment:

Create and present student Professional Portfolio, electronic or hard copy, to advisory board members, community, or employers from industry.
•Using Skills USA Professional Development Portfolio (PDP) work books, complete level 1,2,4,5,7,8,11
•Successfully go through mock interview process with committee members and employers from industry.
•Using Skills USA Contest guidelines and rubrics, to complete a portfolio that will be showcased to the advisory board.
1.A.3 Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts
Communicate Clearly
3.A.1 Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts

Standards and Competencies

Standard WR 1: Career Planning

WR-1.1 Complete, discuss, and analyze the results of personality, career interest, and aptitude assessments;

WR-1.2 Explore the career clusters as defined by the U.S. Department of Education and summarize the career opportunities in a cluster of personal interest;

WR-1.3 Create a personal career portfolio including academic, certification and technical-skill requirement, career opportunities, expected wages, skills and aptitude necessary and the impact of technology on careers of personal interest.

WR-1.4 Determine academic/training or certification requirements for transition from one learning level to the next and explore opportunities for earning credit/certifications in high school such as advanced placement, tech prep, International Baccalaureate, college in the high school, military and apprenticeship opportunities.

WR-1.5 Develop and analyze tables, charts, and graphs related to career interests and make oral presentation regarding the career pathway of your choice.

WR-1.6 Develop an awareness of financial aid, scholarships, and other sources of income to support postsecondary education/training and discuss the impact of effective college and career planning.

WR-1.7 Identify how performance on assessments such as the SAT®, ACT®, ASVAB®, COMPASS® and ACCUPLACER® impact personal academic and career goals.

WR-1.8 Prepare a personal budget reflecting desired lifestyle and compare and contrast at least three careers of interest in regards to salary expectations and education/training costs.

WR-1.9 Prepare a program of study for at least one career of interest

WR-1.10 Apply knowledge gained from individual assessment to a set of goals and a career plan

WR-1.11 Develop strategies to make an effective transition from school to career

WR-1.13 Identify industry certification opportunities

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Comprehension and Collaboration (11-12)

1 - Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues,

1a - Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on

1b - Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed.

1c - Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify,

1d - Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine

2 - Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems,

3 - Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone

Health and Fitness

Language

Mathematics

CC: Mathematical Practices (MP)

4 - Model with mathematics.

5 - Use appropriate tools strategically.

6 - Attend to precision.

7 - Look for and make use of structure.

Reading

CC: Reading for Literacy in Science and Technical Subjects

Key Ideas and Details (11-12)

2 - Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate

Craft and Structure (11-12)

4 - Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12

Science

Social Studies

Writing

CC: Writing (11-12)

2 - Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and

Production and Distribution of Writing

4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types

6 - Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or

Research to Build and Present Knowledge

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- [x] Think Creatively
- [ ] Work Creatively with Others
- [ ] Implement Innovations

Creative Thinking and Problem Solving
- [ ] Reason Effectively
- [x] Use Systems Thinking
- [ ] Make Judgements and Decisions
- [ ] Solve Problems

Communication and Collaboration
- [x] Communicate Clearly
- [ ] Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- [ ] Access and Evaluate Information
- [x] Use and Manage Information

Media Literacy
- [ ] Analyze Media
- [ ] Create Media Products

Information, Communications, and Technology (ICT Literacy)
- [x] Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- [ ] Adapt to Change
- [ ] Be Flexible

Initiative and Self-Direction
- [ ] Mange Goals and Time
- [ ] Work Independently
- [ ] Be Self-Directed Learners

Social and Cross-Cultural
- [x] Interact Effectively with Others
- [ ] Work Effectively in Diverse Teams

Productivity and Accountability
- [ ] Manage Projects
- [x] Produce Results

Leadership and Responsibility
- [ ] Guide and Lead Others
- [ ] Be Responsible to Others

Unit 2 PERSONAL SUCCESS — Hours: 50

Performance Assessment(s):

Show up to class on time and ready to work and will generate a resume and keep a portfolio of quality work.
Research positions open within a variety of companies and compare/contrast their descriptions, duties, and expectations. Prepare responses to standard interview question.
Participate in a WOIS or other Career Research assignment.

Leadership Alignment:

Leadership activity embedded in curriculum and instruction. (Examples: CTSO project or activity, locally developed leadership project or activity, embedded 21st Century interdisciplinary theme activity such as global awareness, financial, economic, business & entrepreneurial literacy, civic literacy, health & safety, environmental literacy)
•Create and present student Professional Portfolio, electronic or hard copy, to advisory board members, community, or employers from industry.
•Using SkillsUSA Professional Development Portfolio (PDP) work books, complete level 1,2,4,5,7,8,11
•Successfully go through mock interview process with committee members and employers from industry.
•Using SkillsUSA Contest guidelines and rubrics, to complete a portfolio that will be showcased to the advisory board.
Reason Effectively
2.A.1 Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation
10.B.1.d Participate actively, as well as be reliable and punctual

Standards and Competencies

Standard WR 1: Career Planning

WR-1.1 Complete, discuss, and analyze the results of personality, career interest, and aptitude assessments;

WR-1.2 Explore the career clusters as defined by the U.S. Department of Education and summarize the career opportunities in a cluster of personal interest;

WR-1.3 Create a personal career portfolio including academic, certification and technical-skill requirement, career opportunities, expected wages, skills and aptitude necessary and the impact of technology on careers of personal interest.

WR-1.4 Determine academic/training or certification requirements for transition from one learning level to the next and explore opportunities for earning credit/certifications in high school such as advanced placement, tech prep, International Baccalaureate, college in the high school, military and apprenticeship opportunities.

WR-1.5 Develop and analyze tables, charts, and graphs related to career interests and make oral presentation regarding the career pathway of your choice.

WR-1.6 Develop an awareness of financial aid, scholarships, and other sources of income to support postsecondary education/training and discuss the impact of effective college and career planning.

WR-1.7 Identify how performance on assessments such as the SAT®, ACT®, ASVAB®, COMPASS® and ACCUPLACER® impact personal academic and career goals.

WR-1.8 Prepare a personal budget reflecting desired lifestyle and compare and contrast at least three careers of interest in regards to salary expectations and education/training costs.

WR-1.9 Prepare a program of study for at least one career of interest

WR-1.10 Apply knowledge gained from individual assessment to a set of goals and a career plan

WR-1.11 Develop strategies to make an effective transition from school to career

WR-1.13 Identify industry certification opportunities

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Health and Fitness

Language

CC: College and Career Readiness Anchor Standards for Language

Conventions of Standard English

1 - Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Vocabulary Acquisition and Use

4 - Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and

Mathematics

Reading

CC: College and Career Readiness Anchor Standards for Reading

Key Ideas and Details

1 - Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn

Craft and Structure

4 - Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape

Range of Reading and Level of Text Complexity

10 - Read and comprehend complex literary and informational texts independently and proficiently.

Science

Social Studies

Writing

CC: College and Career Readiness Anchor Standards for Writing

Research to Build and Present Knowledge

7 - Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- ☐ Think Creatively
- ☐ Work Creatively with Others
- ☐ Implement Innovations

Creative Thinking and Problem Solving
- ☑ Reason Effectively
- ☐ Use Systems Thinking
- ☑ Make Judgements and Decisions
- ☐ Solve Problems

Communication and Collaboration
- ☑ Communicate Clearly
- ☐ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- ☐ Access and Evaluate Information
- ☑ Use and Manage Information

Media Literacy
- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)
- ☐ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- ☐ Adapt to Change
- ☐ Be Flexible

Initiative and Self-Direction
- ☑ Mange Goals and Time
- ☐ Work Independently
- ☐ Be Self-Directed Learners

Social and Cross-Cultural
- ☐ Interact Effectively with Others
- ☐ Work Effectively in Diverse Teams

Productivity and Accountability
- ☐ Manage Projects
- ☑ Produce Results

Leadership and Responsibility
- ☐ Guide and Lead Others
- ☑ Be Responsible to Others

Unit 3 EMPLOYABILITY & ENTREPRENEURSHIP Hours: 70

Performance Assessment(s):

Using a career research tool (such as Career Cruising, ASVAB, WOIS), students will prepare a report covering the requirements for training, certification, licensing and the personal characteristics required for employment in that career. The report should include an assessment of personal strengths for success in that particular field. This project will be presented to either the class or advisory board.

Leadership Alignment:

Create and present student Professional Portfolio, electronic or hard copy, to advisory board members, community, or employers from industry.
•Using Skills USA Professional Development Portfolio (PDP) work books, complete level 1,2,4,5,7,8,11
•Successfully go through mock interview process with committee members and employers from industry.
•Using Skills USA Contest guidelines and rubrics for Job Interview Leadership Contest, to complete a professional industry-specific job application and resume that will be used as part of the mock interview process with committee and employers from industry.
2.C.5 Reflect critically on learning experiences and processes
7.B.2 Deal positively with praise, setbacks and criticism

Standards and Competencies

Standard WR 3: Employability and Entrepreneurship

WR-3.1 Demonstrate effective verbal, nonverbal, written, and electronic communication skills;

WR-3.2 Evaluate the impact of positive and negative personal choices, including use of electronic communications such as social networking sites;

WR-3.3 Model characteristics of effective leadership, teamwork, and conflict management;

WR-3.4 Recognize the importance of a healthy lifestyle, including the ability to manage stress;

WR-3.5 Explore and model characteristics necessary for professional success such as work ethics, integrity, dedication, perseverance, and the ability to interact with a diverse population; and

WR-3.6 Complete activities using project- and time-management techniques.

WR-3.7 Identify and model appropriate grooming and appearance for the workplace;

WR-3.8 Demonstrate dependability, punctuality, and initiative;

WR-3.9 Research positive interpersonal skills, including respect for diversity;

WR-3.10 Model appropriate business and personal etiquette in the workplace;

WR-3.11Exhibit productive work habits, ethical practices, and a positive attitude;

WR-3.12Demonstrate the ability to work with the other employees to support the organization and complete assigned tasks;

WR-3.13Demonstrate willingness to learn and further develop skills

WR-3.14Describe the importance of having a positive attitude and techniques that boost morale

WR-3.15Show initiative by coming up with unique solutions and taking on extra responsibilities

WR-3.16Explain the importance of setting goals and demonstrate the ability to set, reach, and evaluate goals

WR-3.17 Explain the importance of taking pride in work accomplished and extrinsic and intrinsic motivators that can be used to increase pride

WR-3.18 Identify how to prioritize work to fulfill responsibilities and meet deadlines;

WR-3.19 Research and compare published workplace policies and procedures;

WR-3.20 Summarize provisions of the Fair Labor Standards Act;

WR-3.21 Describe the consequences of breach of confidentiality;

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

CC: College and Career Readiness Anchor Standards for Speaking and Listening

Comprehension and Collaboration

1 - Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and

Presentation of Knowledge and Ideas

6 - Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

Health and Fitness

Language

Mathematics

Reading

CC: Reading for Literacy in Science and Technical Subjects

Key Ideas and Details (9-10)

1 - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.

Craft and Structure (9-10)

4 - Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10

Range of Reading and Level of Text Complexity (9-10)

10 - By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently

Key Ideas and Details (11-12)

1 - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the

Integration of Knowledge and Ideas (11-12)

7 - Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a

Science

Social Studies

Writing

CC: College and Career Readiness Anchor Standards for Writing

Text Types and Purposes

1 - Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

Production and Distribution of Writing

4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Research to Build and Present Knowledge

8 - Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- ☐ Think Creatively
- ☑ Work Creatively with Others
- ☐ Implement Innovations

Creative Thinking and Problem Solving
- ☑ Reason Effectively
- ☐ Use Systems Thinking
- ☑ Make Judgements and Decisions
- ☐ Solve Problems

Communication and Collaboration
- ☑ Communicate Clearly
- ☑ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- ☐ Access and Evaluate Information
- ☑ Use and Manage Information

Media Literacy
- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)
- ☑ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- ☑ Adapt to Change
- ☑ Be Flexible

Initiative and Self-Direction
- ☐ Mange Goals and Time
- ☐ Work Independently
- ☑ Be Self-Directed Learners

Social and Cross-Cultural
- ☐ Interact Effectively with Others
- ☑ Work Effectively in Diverse Teams

Productivity and Accountability
- ☑ Manage Projects
- ☐ Produce Results

Leadership and Responsibility
- ☐ Guide and Lead Others
- ☐ Be Responsible to Others

Unit 4 ENGINE REPAIR Hours: 110

Performance Assessment(s):

Assessments include self, peer or instructor review and validation of each competency listed below. In addition instructor may have worksheets, quizzes and tests on same items. These competencies are industry task list for possible student certification and are the actual assessment for the task listed.

Students will listen to and verify the operator's concern(s), review past maintenance and repair documents, and determine necessary action.

Leadership Alignment:

Skills USA CRC item: Lessons: Trust Matters (95 Minutes); Leading and Following (125 Minutes); Cooperation Get the Job done (90Minutes); Capitalizing on Strengths (100 Minutes) – 7hrs Teamwork;
Use and Manage Information
4.B.1 Use information accurately and creatively for the issue or problem at hand
Produce Results
10.B.1Demonstrate additional attributes associated with producing high quality products including the abilities to:
10.B.1.b Manage time and projects effectively
10.B.1.c Multi-task

Standards and Competencies

ENGINE REPAIR (ER)

ER - A. General

1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.
2. Verify operation of the instrument panel engine warning indicators.
3. Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.
4. Install engine covers using gaskets, seals, and sealers as required.
5. Remove and replace timing belt; verify correct camshaft timing.
6. Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with thread insert.
7. Identify hybrid vehicle internal combustion engine service precautions.

ER - B. Cylinder Head and Valve Train

1. Adjust valves (mechanical or hydraulic lifters).

ER - C. Lubrication and Cooling Systems

1. Perform cooling system pressure and dye tests to identify leaks; check coolant condition and level; inspect and test radiator, pressure cap, coolant recovery tank, and heater core; determine necessary action.
2. Inspect, replace, and adjust drive belts, tensioners, and pulleys; check pulley and belt alignment.
3. Remove, inspect, and replace thermostat and gasket/seal.
4. Inspect and test coolant; drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required.
5. Perform engine oil and filter change.

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Health and Fitness

Language

Mathematics

CC: Mathematical Practices (MP)

1 - Make sense of problems and persevere in solving them.

2 - Reason abstractly and quantitatively.

3 - Construct viable arguments and critique the reasoning of others.

4 - Model with mathematics.

5 - Use appropriate tools strategically.

6 - Attend to precision.

7 - Look for and make use of structure.

8 - Look for and express regularity in repeated reasoning.

Reading

CC: Reading Informational Text

Craft and Structure (9-10)

4 - Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word

Key Ideas and Details (11-12)

3 - Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.

Craft and Structure (11-12)

4 - Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the

Integration of Knowledge and Ideas (11-12)

7 - Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or

Science

Social Studies

Writing

CC: College and Career Readiness Anchor Standards for Writing

Text Types and Purposes

1 - Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

Production and Distribution of Writing

6 - Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- ☐ Think Creatively
- ☑ Work Creatively with Others
- ☐ Implement Innovations

Creative Thinking and Problem Solving
- ☑ Reason Effectively
- ☑ Use Systems Thinking
- ☑ Make Judgements and Decisions
- ☐ Solve Problems

Communication and Collaboration
- ☑ Communicate Clearly
- ☐ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- ☐ Access and Evaluate Information
- ☑ Use and Manage Information

Media Literacy
- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)
- ☐ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- ☐ Adapt to Change
- ☐ Be Flexible

Initiative and Self-Direction
- ☑ Mange Goals and Time
- ☐ Work Independently
- ☑ Be Self-Directed Learners

Social and Cross-Cultural
- ☐ Interact Effectively with Others
- ☑ Work Effectively in Diverse Teams

Productivity and Accountability
- ☑ Manage Projects
- ☑ Produce Results

Leadership and Responsibility
- ☑ Guide and Lead Others
- ☐ Be Responsible to Others

Unit 5 AUTOMATIC TRANSMISSION & TRANSAXLE: GENERAL TRANSMISSION AND TRANSAXLE Hours: 80

Performance Assessment(s):

Assessments include self, peer or instructor review and validation of each competency listed below. In addition instructor may have worksheets, quizzes and tests on same items. These competencies are industry task list for possible student certification and are the actual assessment for the task listed.

Leadership Alignment:

Skills USA Capitalizing on Strengths (100 Minutes) – 7hrs Teamwork;
Be Self-Directed Learners
8.C.1 Go beyond basic mastery of skills and/or curriculum to explore and expand one's own learning and opportunities to gain expertise
Works Independently
8.B.1Monitor, define, prioritize and complete tasks without direct oversight

Standards and Competencies

AUTOMATIC TRANSMISSION AND TRANSAXLE (AT)

AT - A. General

1. Research applicable vehicle and service information, fluid type, vehicle service history, service precautions, and technical service bulletins.
2. Check fluid level in a transmission or a transaxle equipped with a dip-stick.
3. Check fluid level in a transmission or a transaxle not equipped with a dip-stick.
4. Check transmission fluid condition; check for leaks

AT - B. In-Vehicle Transmission/Transaxle

1. Inspect, adjust, and replace external manual valve shift linkage, transmission range sensor/switch, and park/neutral position switch.
2. Inspect for leakage at external seals, gaskets, and bushings.
3. Inspect power train mounts.
4. Drain and replace fluid and filter(s).

AT - C. Off-Vehicle Transmission and Transaxle

1. Describe the operational characteristics of a continuously variable transmission (CVT).
2. Describe the operational characteristics of a hybrid vehicle drive train.

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Health and Fitness

Language

Mathematics

Reading

CC: Reading Informational Text

Key Ideas and Details (9-10)

1 - Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

Craft and Structure (9-10)

4 - Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word

Science

Physical Science

Force and Motion (Newton's Laws)

9-11 PS1A: Average velocity is defined as a change in position with respect to time. Velocity includes both speed and direction.

Matter Properties and Change (Chemical Reactions)

9-11 PS2E: Molecular compounds are composed of two or more elements bonded together in a fixed proportion by sharing electrons between atoms, forming covalent bonds. Such

Energy Transfer, Transformation, and Conservation

9-11 PS3A: Although energy can be transferred from one object to another and can be transformed from one form of energy to another form, the total energy in a closed system is

Social Studies

Writing

CC: Writing for Literacy in History/Social Studies, Science, and Technical Subjects (11-12)

Text Types and Purposes

2d - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable

Production and Distribution of Writing

6 - Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or

Research to Build and Present Knowledge

9 - Draw evidence from informational texts to support analysis, reflection, and research.

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- ☐ Think Creatively
- ☐ Work Creatively with Others
- ☐ Implement Innovations

Creative Thinking and Problem Solving
- ☑ Reason Effectively
- ☑ Use Systems Thinking
- ☐ Make Judgements and Decisions
- ☐ Solve Problems

Communication and Collaboration
- ☑ Communicate Clearly
- ☐ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- ☑ Access and Evaluate Information
- ☐ Use and Manage Information

Media Literacy
- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)
- ☑ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- ☐ Adapt to Change
- ☑ Be Flexible

Initiative and Self-Direction
- ☑ Mange Goals and Time
- ☑ Work Independently
- ☐ Be Self-Directed Learners

Social and Cross-Cultural
- ☐ Interact Effectively with Others
- ☑ Work Effectively in Diverse Teams

Productivity and Accountability
- ☐ Manage Projects
- ☑ Produce Results

Leadership and Responsibility
- ☐ Guide and Lead Others
- ☐ Be Responsible to Others

Unit 6 MANUAL DRIVE TRAINE AND AXLES Hours: 75

Performance Assessment(s):

Assessments include self, peer or instructor review and validation of each competency listed below. In addition instructor may have worksheets, quizzes and tests on same items. These competencies are industry task list for possible student certification and are the actual assessment for the task listed.

- NATEF Task Sheets 3A1-3F3
- Module Tests
- Pass/Fail live work
- Parts identification
- Oral/Written explanations of theory applications.

Leadership Alignment:

Skills Usa activity : Assessments include self, peer or instructor review.
Produce Results
10.B.1 Demonstrate additional attributes associated with producing high quality products including the abilities to:
10.B.1.a Work positively and ethically
10.A.2 Prioritize, plan and manage work to achieve the intended result

Standards and Competencies

MANUAL DRIVE TRAIN AND AXLES (MD)

MD - A. General

1. Research applicable vehicle and service information, fluid type, vehicle service history, service precautions, and technical service bulletins.
2. Drain and refill manual transmission/transaxle and final drive unit.
3. Check fluid condition; check for leaks.

MD - B. Clutch

1. Check and adjust clutch master cylinder fluid level.
2. Check for system leaks.

MD - C. Transmission/Transaxle

1. Describe the operational characteristics of an electronically-controlled manual transmission/transaxle.

MD - D. Drive Shaft, Half Shafts, Universal and Constant-Velocity (CV) Joints

1. Inspect, remove, and replace front wheel drive (FWD) bearings, hubs, and seals.
2. Inspect, service, and replace shafts, yokes, boots, and universal/CV joints.

MD - E. Differential Case Assembly

1. Clean and inspect differential housing; check for leaks; inspect housing vent.
2. Check and adjust differential housing fluid level.
3. Drain and refill differential housing.

MD - F. Drive Axles

1. Inspect and replace drive axle wheel studs.

MD - G. Four-wheel Drive/All-wheel Drive

1. Inspect front-wheel bearings and locking hubs.
2. Check for leaks at drive assembly seals; check vents; check lube level.

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Presentation of Knowledge and Ideas (11-12)

5 - Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence

Health and Fitness

Language

Mathematics

CC: Mathematical Practices (MP)

2 - Reason abstractly and quantitatively.

4 - Model with mathematics.

CC: Functions (F)

Interpreting Functions (F-IF)

1 - Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a

CC: Mathematical Practices (MP)

1 - Make sense of problems and persevere in solving them.

4 - Model with mathematics.

8 - Look for and express regularity in repeated reasoning.

Reading

CC: Reading for Literacy in Science and Technical Subjects

Key Ideas and Details (9-10)

3 - Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks attending to special cases or exceptions

Key Ideas and Details (11-12)

3 - Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on

Integration of Knowledge and Ideas (11-12)

Science

Social Studies

Writing

CC: College and Career Readiness Anchor Standards for Writing

Text Types and Purposes

1 - Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

Production and Distribution of Writing

6 - Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation

- ☐ Think Creatively
- ☐ Work Creatively with Others
- ☐ Implement Innovations

Creative Thinking and Problem Solving

- ☑ Reason Effectively
- ☑ Use Systems Thinking
- ☑ Make Judgements and Decisions
- ☑ Solve Problems

Communication and Collaboration

- ☐ Communicate Clearly
- ☑ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy

- ☑ Access and Evaluate Information
- ☑ Use and Manage Information

Media Literacy

- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)

- ☐ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability

- ☑ Adapt to Change
- ☐ Be Flexible

Initiative and Self-Direction

- ☑ Mange Goals and Time
- ☑ Work Independently
- ☑ Be Self-Directed Learners

Social and Cross-Cultural

- ☐ Interact Effectively with Others
- ☑ Work Effectively in Diverse Teams

Productivity and Accountability

- ☑ Manage Projects
- ☑ Produce Results

Leadership and Responsibility

- ☐ Guide and Lead Others
- ☐ Be Responsible to Others

Unit 7 SUSPENSION AND STEERING — Hours: 80

Performance Assessment(s):

Suspension and steering systems Assessments include self, peer or instructor review and validation of each competency listed above. In addition instructor may have worksheets, quizzes and tests on same items. These competencies are industry task list for possible student certification and are the actual assessment for the task listed.

Leadership Alignment:

Students will think creatively, problem solve, access and evaluate information and be responsible to others in a Skills USA or local leadership activity, what is the problem.
Adapt to Change
7.A.1 Adapt to varied roles, jobs responsibilities, schedules and contexts
8.C.2 Demonstrate initiative to advance skill levels towards a professional level
10.A.2 Prioritize, plan and manage work to achieve the intended result

Standards and Competencies

SUSPENSION AND STEERING SYSTEMS (SS)

SS - A. General

1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.
2. Disable and enable supplemental restraint system (SRS).

SS - B. Related Suspension and Steering Service

1. Inspect rack and pinion steering gear inner tie rod ends (sockets) and bellows boots.
2. Determine proper power steering fluid type; inspect fluid level and condition.
3. Flush, fill, and bleed power steering system.
4. Inspect for power steering fluid leakage; determine necessary action.
5. Remove, inspect, replace, and adjust power steering pump drive belt.
6. Inspect and replace power steering hoses and fittings.
7. Replace power steering pump filter(s).
8. Inspect pitman arm, relay (centerlink/intermediate) rod, idler arm and mountings, and steering linkage damper.
9. Inspect tie rod ends (sockets), tie rod sleeves, and clamps.
10. Inspect upper and lower control arms, bushings, and shafts.
11. Inspect and replace rebound and jounce bumpers.
12. Inspect track bar, strut rods/radius arms, and related mounts and bushings.
13. Inspect upper and lower ball joints (with or without wear indicators).
14. Inspect suspension system coil springs and spring insulators (silencers).
15. Inspect suspension system torsion bars and mounts.
16. Inspect and replace front stabilizer bar (sway bar) bushings, brackets, and links.
17. Inspect strut cartridge or assembly.
18. Inspect front strut bearing and mount.
19. Inspect rear suspension system lateral links/arms (track bars), control (trailing) arms.
20. Inspect rear suspension system leaf spring(s), spring insulators (silencers), shackles, brackets, bushings, center pins/bolts, and mounts
21. Inspect, remove, and replace shock absorbers; inspect mounts and bushings.
22. Inspect electric power-assisted steering.
23. Identify hybrid vehicle power steering system electrical circuits and safety precautions.
24. Describe the function of the power steering pressure switch.

SS - C. Wheel Alignment

1. Perform prealignment inspection and measure vehicle ride height; determine necessary action.

SS - D. Wheels and Tires

1. Inspect tire condition; identify tire wear patterns; check for correct size and application (load and speed ratings) and adjust air pressure; determine necessary action.
2. Rotate tires according to manufacturer's recommendations.
3. Dismount, inspect, and remount tire on wheel; balance wheel and tire assembly (static and dynamic).
4. Dismount, inspect, and remount tire on wheel equipped with tire pressure monitoring system sensor.
5. Inspect tire and wheel assembly for air loss; perform necessary action.
6. Repair tire using internal patch.
7. Identify and test tire pressure monitoring systems (indirect and direct) for operation; verify operation of instrument panel lamps.
8. Demonstrate knowledge of steps required to remove and replace sensors in a tire pressure monitoring system.

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Health and Fitness

Language

Mathematics

CC: Geometry (G)

Expressing Geometric Properties with Equations (G-GPE)

4 - For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, √3) lies on the circle centered at

6 - Find the point on a directed line segment between two given points that partitions the segment in a given ratio.

7 - Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.*

Geometric Measurement and Dimension (G-GMD)

1 - Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's

4 - Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.

Modeling with Geometry (G-MG)

1 - Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).*

CC: Mathematical Practices (MP)

4 - Model with mathematics.

Reading

Science

Physical Science

Matter Properties and Change (Chemical Reactions)

9-11 PS2A: Atoms are composed of protons, neutrons, and electrons. The nucleus of an atom takes up very little of the atom's volume but makes up almost all of the mass. The nucleus contains protons and neutrons, which are much more massive than the electrons surrounding the nucleus. Protons have a positive charge, electrons are negative in charge,

9-11 PS2B: Atoms of the same element have the same number of protons. The number and arrangement of electrons determines how the atom interacts with other atoms to form

9-11 PS2D: Ions are produced when atoms or molecules lose or gain electrons, thereby gaining a positive or negative electrical charge. Ions of opposite charge are attracted to each

Energy Transfer, Transformation, and Conservation

9-11 PS3A: Although energy can be transferred from one object to another and can be transformed from one form of energy to another form, the total energy in a closed system is

Social Studies

Writing

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation

- [x] Think Creatively
- [ ] Work Creatively with Others
- [ ] Implement Innovations

Creative Thinking and Problem Solving

- [x] Reason Effectively
- [x] Use Systems Thinking
- [x] Make Judgements and Decisions
- [x] Solve Problems

Communication and Collaboration

- [ ] Communicate Clearly
- [x] Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy

- [x] Access and Evaluate Information
- [x] Use and Manage Information

Media Literacy

- [ ] Analyze Media
- [ ] Create Media Products

Information, Communications, and Technology (ICT Literacy)

- [ ] Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability

- [x] Adapt to Change
- [ ] Be Flexible

Initiative and Self-Direction

- [x] Mange Goals and Time
- [ ] Work Independently
- [x] Be Self-Directed Learners

Social and Cross-Cultural

- [ ] Interact Effectively with Others
- [ ] Work Effectively in Diverse Teams

Productivity and Accountability

- [x] Manage Projects
- [x] Produce Results

Leadership and Responsibility

- [ ] Guide and Lead Others
- [x] Be Responsible to Others

Unit 8 BRAKES — Hours: 70

Performance Assessment(s):

Brakes Assessments include self, peer or instructor review and validation of each competency listed above. In addition instructor may have worksheets, quizzes and tests on same items. These competencies are industry task list for possible student certification and are the actual assessment for the task listed.

Leadership Alignment:

Students will think creatively, reason effectively, collaborate with others, apply technology effectively, adapt to change and produce results in a Lesson: Attitude is everything (180 Minutes), Growing My Career (80 Minutes), Showing Initiative (90 Minutes): Self-Motivated:
Access and Evaluate Information
4.A.1 Access information efficiently (time) and effectively (sources)
Works Independently
8.B.1 Monitor, define, prioritize and complete tasks without direct oversight

Standards and Competencies

BRAKES (BR)

BR - A. General

1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.
2. Describe procedure for performing a road test to check brake system operation, including an anti-lock brake system (ABS).

BR - B. Hydraulic System

1. Measure brake pedal height, travel, and free play (as applicable); determine necessary action.
2. Check master cylinder for external leaks and proper operation.
3. Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging, wear, loose fittings and supports; determine necessary action.
4. Select, handle, store, and fill brake fluids to proper level.
5. Identify components of brake warning light system.
6. Bleed and/or flush brake system.
7. Test brake fluid for contamination.

BR - C. Drum Brakes

1. Remove, clean, inspect, and measure brake drum diameter; determine necessary action.
2. Refinish brake drum and measure final drum diameter; compare with specifications.
3. Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble.
4. Inspect wheel cylinders for leaks and proper operation; remove and replace as needed.
5. Pre-adjust brake shoes and parking brake; install brake drums or drum/hub assemblies and wheel bearings; make final checks and adjustments.
6. Install wheel and torque lug nuts.

BR - D. Disc Brakes

1. Remove and clean caliper assembly; inspect for leaks and damage/wear to caliper housing; determine necessary action.
2. Clean and inspect caliper mounting and slides/pins for proper operation, wear, and damage; determine necessary action.
3. Remove, inspect, and replace pads and retaining hardware; determine necessary action.
4. Lubricate and reinstall caliper, pads, and related hardware; seat pads and inspect for leaks.
5. Clean and inspect rotor, measure rotor thickness, thickness variation, and lateral runout; determine necessary action.
6. Remove and reinstall rotor.
7. Refinish rotor on vehicle; measure final rotor thickness and compare with specifications.
8. Refinish rotor off vehicle; measure final rotor thickness and compare with specifications.
9. Retract and re-adjust caliper piston on an integral parking brake system.
10. Check brake pad wear indicator; determine necessary action.

11. Describe importance of operating vehicle to burnish/break-in replacement brake pads according to manufacturer's recommendations.
BR - E. Power-Assist Units
1. Check brake pedal travel with, and without, engine running to verify proper power booster operation.
2. Check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster.
BR - F. Miscellaneous (Wheel Bearings, Parking Brakes, Electrical, Etc.)
1. Remove, clean, inspect, repack, and install wheel bearings; replace seals; install hub and adjust bearings.
2. Check parking brake cables and components for wear, binding, and corrosion; clean, lubricate, adjust or replace as needed.
3. Check parking brake operation and parking brake indicator light system operation; determine necessary action.
4. Check operation of brake stop light system.
5. Replace wheel bearing and race.
BR - G. Electronic Brakes, and Traction and Stability Control Systems
1. Identify traction control/vehicle stability control system components.
2. Describe the operation of a regenerative braking system.

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Health and Fitness

Language

Mathematics

CC: Mathematical Practices (MP)
4 - Model with mathematics.

CC: Geometry (G)
Geometric Measurement and Dimension (G-GMD)
1 - Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's

4 - Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.
Modeling with Geometry (G-MG)
1 - Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).*

Reading

Science

Physical Science
Force and Motion (Newton's Laws)
9-11 PS1C: An object at rest will remain at rest unless acted on by an unbalanced force. An object in motion at constant velocity will continue at the same velocity unless acted on by

Matter Properties and Change (Chemical Reactions)

9-11 PS2A: Atoms are composed of protons, neutrons, and electrons. The nucleus of an atom takes up very little of the atom's volume but makes up almost all of the mass. The nucleus contains protons and neutrons, which are much more massive than the electrons surrounding the nucleus. Protons have a positive charge, electrons are negative in charge,

9-11 PS2B: Atoms of the same element have the same number of protons. The number and arrangement of electrons determines how the atom interacts with other atoms to form

9-11 PS2D: Ions are produced when atoms or molecules lose or gain electrons, thereby gaining a positive or negative electrical charge. Ions of opposite charge are attracted to each

9-11 PS2G: Chemical reactions change the arrangement of atoms in the molecules of substances. Chemical reactions release or acquire energy from their surroundings and result in

Energy Transfer, Transformation, and Conservation

9-11 PS3A: Although energy can be transferred from one object to another and can be transformed from one form of energy to another form, the total energy in a closed system is

Social Studies

Writing

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- [x] Think Creatively
- [ ] Work Creatively with Others
- [ ] Implement Innovations

Creative Thinking and Problem Solving
- [x] Reason Effectively
- [ ] Use Systems Thinking
- [x] Make Judgements and Decisions
- [x] Solve Problems

Communication and Collaboration
- [ ] Communicate Clearly
- [x] Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- [x] Access and Evaluate Information
- [ ] Use and Manage Information

Media Literacy
- [ ] Analyze Media
- [ ] Create Media Products

Information, Communications, and Technology (ICT Literacy)
- [x] Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- [x] Adapt to Change
- [ ] Be Flexible

Initiative and Self-Direction
- [x] Mange Goals and Time
- [x] Work Independently
- [ ] Be Self-Directed Learners

Social and Cross-Cultural
- [ ] Interact Effectively with Others
- [ ] Work Effectively in Diverse Teams

Productivity and Accountability
- [x] Manage Projects
- [x] Produce Results

Leadership and Responsibility
- [x] Guide and Lead Others
- [ ] Be Responsible to Others

Unit 9 ELECTRICAL /ELECTRONIC SYSTEMS Hours: 90

Performance Assessment(s):

Electrical and Electronics systems Assessments include self, peer or instructor review and validation of each competency listed above. In addition instructor may have worksheets, quizzes and tests on same items. These competencies are industry task list for possible student certification and are the actual assessment for the task listed.

Leadership Alignment:

Students will implement innovations, communicate clearly, collaborate with others, access and evaluate information and adapt to change in a Skills USA CRC item: Lessons: Growing My Career (80 Minutes), Self-Motivated.
2.C.5 Reflect critically on learning experiences and processes
8.A.3 Utilize time and manage workload efficiently
Produce Results
10.B.1Demonstrate additional attributes associated with producing high quality products

Standards and Competencies

ELECTRICAL/ELECTRONIC SYSTEMS (EE)

EE - A. General

1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.
2. Demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity (Ohm's Law).
3. Use wiring diagrams to trace electrical/electronic circuits.
4. Demonstrate proper use of a digital multimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow, and resistance.
5. Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits.
6. Check operation of electrical circuits with a test light.
7. Check operation of electrical circuits with fused jumper wires.
8. Measure key-off battery drain (parasitic draw).
9. Inspect and test fusible links, circuit breakers, and fuses; determine necessary action.
10. Perform solder repair of electrical wiring.
11. Replace electrical connectors and terminal ends.

EE - B. Battery Service

1. Perform battery state-of-charge test; determine necessary action.
2. Confirm proper battery capacity for vehicle application; perform battery capacity test; determine necessary action.
3. Maintain or restore electronic memory functions.
4. Inspect and clean battery; fill battery cells; check battery cables, connectors, clamps, and hold-downs.
5. Perform slow/fast battery charge according to manufacturer's recommendations.
6. Jump-start vehicle using jumper cables and a booster battery or an auxiliary power supply.
7. Identify high-voltage circuits of electric or hybrid electric vehicle and related safety precautions.
8. Identify electronic modules, security systems, radios, and other accessories that require reinitialization or code entry after reconnecting vehicle battery.
9. Identify hybrid vehicle auxiliary (12v) battery service, repair, and test procedures.

EE - C. Starting System

1. Perform starter current draw test; determine necessary action.
2. Perform starter circuit voltage drop tests; determine necessary action.
3. Inspect and test starter relays and solenoids; determine necessary action.
4. Remove and install starter in a vehicle.
5. Inspect and test switches, connectors, and wires of starter control circuits; determine necessary action.

EE - D. Charging System

1. Perform charging system output test; determine necessary action.
2. Inspect, adjust, or replace generator (alternator) drive belts; check pulleys and tensioners for wear; check pulley and belt alignment.
3. Remove, inspect, and re-install generator (alternator).
4. Perform charging circuit voltage drop tests; determine necessary action.

EE - E. Lighting Systems

1. Inspect interior and exterior lamps and sockets including headlights and auxiliary lights (fog lights/driving lights); replace as needed.
2. Aim headlights.
3. Identify system voltage and safety precautions associated with high-intensity discharge headlights.

EE - F. Accessories

1. Disable and enable airbag system for vehicle service; verify indicator lamp operation.
2. Remove and reinstall door panel.
3. Describe the operation of keyless entry/remote-start systems.
4. Verify operation of instrument panel gauges and warning/indicator lights; reset maintenance indicators.
5. Verify windshield wiper and washer operation; replace wiper blades.

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Comprehension and Collaboration (11-12)

Presentation of Knowledge and Ideas (11-12)

5 - Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence

Health and Fitness

Language

Mathematics

CC: Mathematical Practices (MP)

2 - Reason abstractly and quantitatively.

4 - Model with mathematics.

Reading

CC: Reading for Literacy in Science and Technical Subjects

Integration of Knowledge and Ideas (9-10)

7 - Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically

Science

Physical Science

Force and Motion (Newton's Laws)

9-11 PS1A: Average velocity is defined as a change in position with respect to time. Velocity includes both speed and direction.

Matter Properties and Change (Chemical Reactions)

9-11 PS2D: Ions are produced when atoms or molecules lose or gain electrons, thereby gaining a positive or negative electrical charge. Ions of opposite charge are attracted to each

9-11 PS2E: Molecular compounds are composed of two or more elements bonded together in a fixed proportion by sharing electrons between atoms, forming covalent bonds. Such

9-11 PS2G: Chemical reactions change the arrangement of atoms in the molecules of substances. Chemical reactions release or acquire energy from their surroundings and result in

Energy Transfer, Transformation, and Conservation

9-11 PS3A: Although energy can be transferred from one object to another and can be transformed from one form of energy to another form, the total energy in a closed system is

9-11 PS3B: Kinetic energy is the energy of motion. The kinetic energy of an object is defined by the equation: EK = ½ MV2

Social Studies

Writing

CC: Writing (11-12)

2 - Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- ☐ Think Creatively
- ☐ Work Creatively with Others
- ☑ Implement Innovations

Creative Thinking and Problem Solving
- ☑ Reason Effectively
- ☐ Use Systems Thinking
- ☑ Make Judgements and Decisions
- ☑ Solve Problems

Communication and Collaboration
- ☑ Communicate Clearly
- ☑ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- ☑ Access and Evaluate Information
- ☐ Use and Manage Information

Media Literacy
- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)
- ☑ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- ☑ Adapt to Change
- ☐ Be Flexible

Initiative and Self-Direction
- ☑ Mange Goals and Time
- ☐ Work Independently
- ☑ Be Self-Directed Learners

Social and Cross-Cultural
- ☐ Interact Effectively with Others
- ☐ Work Effectively in Diverse Teams

Productivity and Accountability
- ☐ Manage Projects
- ☑ Produce Results

Leadership and Responsibility
- ☐ Guide and Lead Others
- ☐ Be Responsible to Others

Unit 10 HEATING AND AIR CONDITIONING: GENERAL A/C SYSTEMS DIAGNOSIS AND REPAIR Hours: 65

Performance Assessment(s):

Assessments include self, peer or instructor review and validation of each competency listed above. In addition instructor may have worksheets, quizzes and tests on same items.
These competencies are industry task list for possible student certification and are the actual assessment for the task listed.
NATEF Task Sheets 7A1-7A4
Module Tests
Pass/Fail live work, parts identification
Oral/Written explanations of theory applications.

Leadership Alignment:

Students will think creatively, solve problems, communicate clearly, apply technology effectively, manage goals and time and work effectively in diverse teams in a Skills USA CRC item: Lessons: Showing Initiative (90 Minutes): Self-Motivated:
Use Systems Thinking
2.B.1 Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems
Access and Evaluate Information
4.A.1 Access information efficiently (time) and effectively (sources)
Adapt to Change
7.A.1Adapt to varied roles, jobs responsibilities, schedules and contexts

Standards and Competencies

HEATING AND AIR CONDITIONING (AC)

AC - A. General

1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.

2. Identify vehicle's A/C components.

AC - B. Refrigeration System Components

1. Inspect and replace A/C compressor drive belts, pulleys, and tensioners; determine necessary action.

2. Identify hybrid vehicle A/C system electrical circuits and the service/safety precautions.

3. Inspect A/C condenser for airflow restrictions; determine necessary action.

AC - C. Heating, Ventilation, and Engine Cooling Systems

1. Inspect engine cooling and heater systems hoses; perform necessary action.

AC - D. Operating Systems and Related Controls

1. Inspect A/C-heater ducts, doors, hoses, cabin filters, and outlets; perform necessary action.

2. Identify the source of A/C system odors.

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Presentation of Knowledge and Ideas (11-12)

5 - Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence

Health and Fitness

Language

Mathematics

CC: Mathematical Practices (MP)

2 - Reason abstractly and quantitatively.

4 - Model with mathematics.

Reading

CC: Reading for Literacy in Science and Technical Subjects

Integration of Knowledge and Ideas (9-10)

7 - Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically

Key Ideas and Details (11-12)

1 - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the

Science

Physical Science

Matter Properties and Change (Chemical Reactions)

9-11 PS2I: The rate of a physical or chemical change may be affected by factors such as temperature, surface area, and pressure.

Energy Transfer, Transformation, and Conservation

9-11 PS3A: Although energy can be transferred from one object to another and can be transformed from one form of energy to another form, the total energy in a closed system is

Inquiry (Conducting Analysis and Thinking Logically)

9-12 INQA: Scientists generate and evaluate questions to investigate the natural world.

9-12 INQB: Scientific progress requires the use of various methods appropriate for answering different kinds of research questions, a thoughtful plan for gathering data needed to

Application (Science, Technology, and Society)

9-12 APPB: The technological design process begins by defining a problem in terms of criteria and constraints, conducting research, and generating several different solutions.

Social Studies

Writing

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- [x] Think Creatively
- [ ] Work Creatively with Others
- [ ] Implement Innovations

Creative Thinking and Problem Solving
- [x] Reason Effectively
- [x] Use Systems Thinking
- [x] Make Judgements and Decisions
- [x] Solve Problems

Communication and Collaboration
- [x] Communicate Clearly
- [ ] Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- [x] Access and Evaluate Information
- [ ] Use and Manage Information

Media Literacy
- [ ] Analyze Media
- [ ] Create Media Products

Information, Communications, and Technology (ICT Literacy)
- [x] Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- [x] Adapt to Change
- [ ] Be Flexible

Initiative and Self-Direction
- [x] Mange Goals and Time
- [ ] Work Independently
- [x] Be Self-Directed Learners

Social and Cross-Cultural
- [ ] Interact Effectively with Others
- [x] Work Effectively in Diverse Teams

Productivity and Accountability
- [ ] Manage Projects
- [ ] Produce Results

Leadership and Responsibility
- [ ] Guide and Lead Others
- [ ] Be Responsible to Others

Unit 11 ENGINE PREFORMANCE — Hours: 70

Performance Assessment(s):

Assessments include self, peer or instructor review and validation of each competency listed above. In addition instructor may have worksheets, quizzes and tests on same items. These competencies are industry task list for possible student certification and are the actual assessment for the task listed.

Leadership Alignment:

Students will work creatively with others, communicate clearly, access and evaluate information, manage goals and time and produce results in a Skills USA CRC Lesson: Fostering Diversity (75 Minutes)
8.A.3 Utilize time and manage workload efficiently
Manage Projects
10.A.1 Set and meet goals, even in the face of obstacles and competing pressures

Standards and Competencies

ENGINE PERFORMANCE (EP)

EP - A. General

1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.
2. Perform engine absolute (vacuum/boost) manifold pressure tests; determine necessary action
3. Perform cylinder power balance test; determine necessary action.
4. Perform cylinder cranking and running compression tests; determine necessary action.
5. Perform cylinder leakage test; determine necessary action.
6. Verify engine operating temperature.
7. Remove and replace spark plugs; inspect secondary ignition components for wear and damage.

EP - B. Computerized Engine Controls

1. Retrieve and record diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable.
2. Describe the importance of operating all OBDII monitors for repair verification.

EP - C. Fuel, Air Induction, and Exhaust Systems

1. Replace fuel filter(s).
2. Inspect, service, or replace air filters, filter housings, and intake duct work.
3. Inspect integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shields; determine necessary action.
4. Inspect condition of exhaust system hangers, brackets, clamps, and heat shields; repair or replace as needed.
5. Check and refill diesel exhaust fluid (DEF)

EP - D. Emissions Control Systems

1. Inspect, test, and service positive crankcase ventilation (PCV) filter/breather cap, valve, tubes, orifices, and hoses; perform necessary action.

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Presentation of Knowledge and Ideas (11-12)

5 - Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence

Health and Fitness

Language

Mathematics

CC: Mathematical Practices (MP)

2 - Reason abstractly and quantitatively.

4 - Model with mathematics.

CC: Number and Quantity (N)

Quantities (N-Q)

1 - Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and

2 - Define appropriate quantities for the purpose of descriptive modeling.*

3 - Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.*

Reading

CC: Reading for Literacy in Science and Technical Subjects

Integration of Knowledge and Ideas (9-10)

7 - Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically

Key Ideas and Details (11-12)

1 - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the

Science

Physical Science

Force and Motion (Newton's Laws)

9-11 PS1A: Average velocity is defined as a change in position with respect to time. Velocity includes both speed and direction.

Energy Transfer, Transformation, and Conservation

9-11 PS3A: Although energy can be transferred from one object to another and can be transformed from one form of energy to another form, the total energy in a closed system is

Systems (Predictability and Feedback)

9-12 SYSA: Feedback is a process in which the output of a system provides information used to regulate the operation of the system. Positive feedback increases the disturbance to a

9-12 SYSB: Systems thinking can be especially useful in analyzing complex situations. To be useful, a system needs to be specified as clearly as possible.

Social Studies

Writing

CC: Writing for Literacy in History/Social Studies, Science, and Technical Subjects (11-12)

Research to Build and Present Knowledge

7 - Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when

8 - Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- ☐ Think Creatively
- ☑ Work Creatively with Others
- ☐ Implement Innovations

Creative Thinking and Problem Solving
- ☐ Reason Effectively
- ☐ Use Systems Thinking
- ☑ Make Judgements and Decisions
- ☐ Solve Problems

Communication and Collaboration
- ☑ Communicate Clearly
- ☐ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- ☑ Access and Evaluate Information
- ☐ Use and Manage Information

Media Literacy
- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)
- ☐ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- ☐ Adapt to Change
- ☐ Be Flexible

Initiative and Self-Direction
- ☑ Mange Goals and Time
- ☑ Work Independently
- ☐ Be Self-Directed Learners

Social and Cross-Cultural
- ☐ Interact Effectively with Others
- ☐ Work Effectively in Diverse Teams

Productivity and Accountability
- ☑ Manage Projects
- ☑ Produce Results

Leadership and Responsibility
- ☐ Guide and Lead Others
- ☑ Be Responsible to Others

Unit 12 SHOP AND PERSONAL SAFETY — Hours: 80

Performance Assessment(s):

Assessments include self, peer or instructor review and validation of each competency listed above. In addition instructor may have worksheets, quizzes and tests on same items. These competencies are industry task list for possible student certification and are the actual assessment for the task listed. Comply with personal and environmental safety practices associated with clothing; eye protection; hand protection; proper lifting practices; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of fuels/ chemicals/materials in accordance with federal, state, and local regulations.

Leadership Alignment:

Students will reason effectively, communicate clearly, use and manage information and guide and lead others in Skills USA Lesson: Message is Clear (150 Minutes), Putting your Best Communication Forward (123 Minutes)
The student will analyze, refine, and apply decision-making skills through classroom, family, community, and business and industry experiences.
The student will identify and analyze the characteristics of family, community, business, and industry leaders.
The student will demonstrate oral, interpersonal, written and electronic communication and presentation skills and understands how to apply those skills.
The student will be involved in activities that require applying theory, problem-solving and using critical thinking skills while understanding the outcomes of related decisions.
The student will demonstrate self-advocacy skills by achieving planned, individual goals.
3.A.4 Utilize multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact
Use and Manage Information
4.B.1Use information accurately and creatively for the issue or problem at hand

Standards and Competencies

REQUIRED SUPPLEMENTAL TASKS (GT)

GT - A. Shop and Personal Safety

1. Identify general shop safety rules and procedures.
2. Utilize safe procedures for handling of tools and equipment.
3. Identify and use proper placement of floor jacks and jack stands.
4. Identify and use proper procedures for safe lift operation.
5. Utilize proper ventilation procedures for working within the lab/shop area.
6. Identify marked safety areas.
7. Identify the location and the types of fire extinguishers and other fire safety equipment; demonstrate knowledge of the procedures for using fire extinguishers and other fire safety equipment.
8. Identify the location and use of eye wash stations.
9. Identify the location of the posted evacuation routes.
10. Comply with the required use of safety glasses, ear protection, gloves, and shoes during lab/shop activities.
11. Identify and wear appropriate clothing for lab/shop activities.
12. Secure hair and jewelry for lab/shop activities.
13. Demonstrate awareness of the safety aspects of supplemental restraint systems (SRS), electronic brake control systems, and hybrid vehicle high voltage circuits.
14. Demonstrate awareness of the safety aspects of high voltage circuits (such as high intensity discharge (HID) lamps, ignition systems, injection systems, etc.).
15. Locate and demonstrate knowledge of material safety data sheets (MSDS).

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Health and Fitness

Language

Mathematics

Reading

CC: Reading for Literacy in Science and Technical Subjects

3 - Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on

Craft and Structure (11-12)

4 - Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12

Science

Social Studies

Writing

CC: Writing (11-12)

2 - Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and

Production and Distribution of Writing

4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types

6 - Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- ☐ Think Creatively
- ☑ Work Creatively with Others
- ☐ Implement Innovations

Creative Thinking and Problem Solving
- ☑ Reason Effectively
- ☐ Use Systems Thinking
- ☑ Make Judgements and Decisions
- ☐ Solve Problems

Communication and Collaboration
- ☑ Communicate Clearly
- ☐ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- ☐ Access and Evaluate Information
- ☑ Use and Manage Information

Media Literacy
- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)
- ☐ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- ☐ Adapt to Change
- ☐ Be Flexible

Initiative and Self-Direction
- ☑ Mange Goals and Time
- ☐ Work Independently
- ☑ Be Self-Directed Learners

Social and Cross-Cultural
- ☐ Interact Effectively with Others
- ☑ Work Effectively in Diverse Teams

Productivity and Accountability
- ☐ Manage Projects
- ☑ Produce Results

Leadership and Responsibility
- ☑ Guide and Lead Others
- ☐ Be Responsible to Others

Unit 13 TOOLS AND EQUIPMENT — Hours: 80

Performance Assessment(s):

NATEF tasks Sheets
OB1-OB5
Pass/Fail Demonstrations
Module Test.

Leadership Alignment:

Students will reason effectively communicate clearly access and evaluate information, manage goals and time in a Skills USA Lesson: Putting your Best Communication Forward (123 Minutes) Communications
Implement Innovations
1.C.1 Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur
Solve Problems
2.D.1Solve different kinds of non-familiar problems in both conventional and innovative ways
Guide and Lead Others
11.A.1 Use interpersonal and problem-solving skills to influence and guide others toward a goal

Standards and Competencies

REQUIRED SUPPLEMENTAL TASKS (GT)

GT - B. Tools and Equipment

1. Identify tools and their usage in automotive applications.
2. Identify standard and metric designation.
3. Demonstrate safe handling and use of appropriate tools.
4. Demonstrate proper cleaning, storage, and maintenance of tools and equipment.
5. Demonstrate proper use of precision measuring tools (i.e. micrometer, dial-indicator, dial-caliper).

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Health and Fitness

Language

Mathematics

CC: Number and Quantity (N)

Quantities (N-Q)

3 - Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.*

Vector and Matrix Quantities (N-VM)

9 (+) - Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive

CC: Algebra (A)

Reasoning with Equations and Inequalities (A-REI)

CC: Functions (F)

Interpreting Functions (F-IF)

9 - Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of

Reading

CC: Reading for Literacy in Science and Technical Subjects

Key Ideas and Details (11-12)

1 - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the

Range of Reading and Level of Text Complexity (11-12)

10 - By the end of grade 12, read and comprehend science/technical texts in the grades 11–12 text complexity band independently and proficiently.

Science

Social Studies

Writing

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation

- ☐ Think Creatively
- ☐ Work Creatively with Others
- ☐ Implement Innovations

Creative Thinking and Problem Solving

- ☑ Reason Effectively
- ☐ Use Systems Thinking
- ☑ Make Judgements and Decisions
- ☑ Solve Problems

Communication and Collaboration

- ☑ Communicate Clearly
- ☐ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy

- ☑ Access and Evaluate Information
- ☐ Use and Manage Information

Media Literacy

- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)

- ☐ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability

- ☐ Adapt to Change
- ☐ Be Flexible

Initiative and Self-Direction

- ☑ Mange Goals and Time
- ☐ Work Independently
- ☐ Be Self-Directed Learners

Social and Cross-Cultural

- ☐ Interact Effectively with Others
- ☐ Work Effectively in Diverse Teams

Productivity and Accountability

- ☑ Manage Projects
- ☐ Produce Results

Leadership and Responsibility

- ☑ Guide and Lead Others
- ☐ Be Responsible to Others

Unit 14 PREPARING VEHICLE FOR SERVICE — Hours: 50

Performance Assessment(s):

Assessments include self, peer or instructor review and validation of each competency listed above. In addition instructor may have worksheets, quizzes and tests on same items. These competencies are industry task list for possible student certification and are the actual assessment for the task listed.

Leadership Alignment:

Students will make judgments and decisions, collaborate with others, access and evaluate information, adapt to change and work effectively in diverse teams in a Skills USA
Lesson: Lesson: Making Informed Decision (70 Minutes) Decision Making
Collaborate with Others
3.B.1 Demonstrate ability to work effectively and respectfully with diverse teams
4.B.2 Manage the flow of information from a wide variety of sources

Standards and Competencies

REQUIRED SUPPLEMENTAL TASKS (GT)

GT - C. Preparing Vehicle for Service

1. Identify information needed and the service requested on a repair order.
2. Identify purpose and demonstrate proper use of fender covers, mats.
3. Demonstrate use of the three C's (concern, cause, and correction).
4. Review vehicle service history.
5. Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Health and Fitness

Language

Mathematics

Reading

CC: Reading for Literacy in Science and Technical Subjects

3 - Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks attending to special cases or exceptions

Craft and Structure (9-10)

4 - Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10

Science

Social Studies

Writing

CC: Writing (11-12)

2 - Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and

Production and Distribution of Writing

4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types

6 - Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- ☐ Think Creatively
- ☐ Work Creatively with Others
- ☑ Implement Innovations

Creative Thinking and Problem Solving
- ☐ Reason Effectively
- ☐ Use Systems Thinking
- ☑ Make Judgements and Decisions
- ☑ Solve Problems

Communication and Collaboration
- ☑ Communicate Clearly
- ☑ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- ☑ Access and Evaluate Information
- ☑ Use and Manage Information

Media Literacy
- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)
- ☐ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- ☑ Adapt to Change
- ☐ Be Flexible

Initiative and Self-Direction
- ☑ Mange Goals and Time
- ☐ Work Independently
- ☐ Be Self-Directed Learners

Social and Cross-Cultural
- ☐ Interact Effectively with Others
- ☑ Work Effectively in Diverse Teams

Productivity and Accountability
- ☐ Manage Projects
- ☑ Produce Results

Leadership and Responsibility
- ☐ Guide and Lead Others
- ☐ Be Responsible to Others

Unit 15 PREPARING VEHICLE FOR CUSTOMER — Hours: 50

Performance Assessment(s):

Assessments include self, peer or instructor review and validation of each competency listed above. In addition instructor may have worksheets, quizzes and tests on same items. These competencies are industry task list for possible student certification and are the actual assessment for the task listed.

Leadership Alignment:

Students will reason effectively, use and manage information, manage goals be responsible and interact effectively with others in a Skills USA Lesson: Get It Done (75 Minutes) Work Ethic
3.A.5 Communicate effectively in diverse environments (including multi-lingual)
Interact Effectively with Others
9.A.1Know when it is appropriate to listen and when to speak
Be Responsible to Others
11.B.1 Act responsibly with the interests of the larger community in mind

Standards and Competencies

REQUIRED SUPPLEMENTAL TASKS (GT)

GT - D. Preparing Vehicle for Customer

1. Ensure vehicle is prepared to return to customer per school/company policy (floor mats, steering wheel cover, etc.).

Aligned to Washington State Standards

Arts

Communication - Speaking and Listening

Health and Fitness

Language

Mathematics

Reading

Science

Social Studies

Writing

CC: Writing (11-12)

2 - Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and

Production and Distribution of Writing

4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types

6 - Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or

Research to Build and Present Knowledge

21st Century Skills

LEARNING AND INNOVATION

Creativity and Innovation
- ☐ Think Creatively
- ☐ Work Creatively with Others
- ☐ Implement Innovations

Creative Thinking and Problem Solving
- ☑ Reason Effectively
- ☐ Use Systems Thinking
- ☐ Make Judgements and Decisions
- ☐ Solve Problems

Communication and Collaboration
- ☑ Communicate Clearly
- ☐ Collaborate with Others

INFORMATION, MEDIA AND TECHNOLOGY SKILLS

Information Literacy
- ☐ Access and Evaluate Information
- ☑ Use and Manage Information

Media Literacy
- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications, and Technology (ICT Literacy)
- ☐ Apply Technology Effectively

LIFE AND CAREER SKILLS

Flexibility and Adaptability
- ☐ Adapt to Change
- ☐ Be Flexible

Initiative and Self-Direction
- ☑ Mange Goals and Time
- ☐ Work Independently
- ☐ Be Self-Directed Learners

Social and Cross-Cultural
- ☑ Interact Effectively with Others
- ☐ Work Effectively in Diverse Teams

Productivity and Accountability
- ☐ Manage Projects
- ☑ Produce Results

Leadership and Responsibility
- ☐ Guide and Lead Others
- ☑ Be Responsible to Others