Everett Public Schools Framework: Automotive Maintenance/Foundations		
Course: Automotive Foundations	Total Framework Hours: 90 Hours	
CIP Code: 470600	Type: Exploratory	
Career Cluster: Transportation Distribution and Logistics	Date Last Modified: Friday, December 20, 2013	

### **Resources and Standard used in Framework Development:**

Resources and Standards used in Framework Development are from the OSPI Model Framework for 470600 Automotive Foundations

#### **AUTOMOTIVE SAFETY AND POLLUTION PREVENTION** Unit 1

Hours: 8

#### Performance Assessment(s):

Summative assessment provided by International Committee for Automotive Repair (ICAR) safety program Safety and Pollution Prevention program (SP2) on line industry test in both Automotive Safety and Automotive pollution prevention. Certification documents provided with 80% pass rate.

#### **Leadership Alignment:**

Students complete Skills USA Proffesional Development Program which teaches employability skills including workplace safety.

### **Standards and Competencies**

#### Standard: Safety

- Utilize proper protective equipment (PPP)
- Demonstrate understanding of proper ventilation equipment and procedures
- Demonstrate awareness of danger when working with electricity, flammables, and toxic materials
- Demonstrate leadership skills by overseeing peers with work safety and clean work environment
- Demonstrate shop Safety
- Understand hazardous materials and wastes and how to safely handle them.

#### Standard WR 5: Health and Safety

- WR-5.1 Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.
- WR-5.2 Explain emergency procedures to follow in response to workplace accidents.
- WR-5.3 Create a disaster and/or emergency response plan.
- WR-5.4 Identify and apply OSHA and other health and safety regulations that apply to specific tasks and jobs in the occupational area
- WR-5.5 Identify and apply EPA and other environmental protection regulations that apply to specific tasks and jobs in the occupational area
- WR-5.6 Identify and apply Right-To-Know (Hazard Communication Policy) and other communicative regulations that apply to specific tasks and jobs in the occupational area
- WR-5.7 Explain procedures for documenting and reporting hazards to appropriate authorities
- WR-5.8 List penalties for non-compliance with appropriate health and safety regulations
- WR-5.9 Identify contact information for appropriate health and safety agencies and resources
- WR-5.10 Create a systematic safety program which would achieve OSHA compliance and promote a safe working environment
- WR-5.11 Illustrate a safe environment for students in printing
- WR-5.12 Identify, describe and demonstrate the effective use of Material Safety Data Sheets (MSDS)
- WR-5.13 Read chemical, product, and equipment labels to determine appropriate health and safety considerations
- WR-5.14 Identify, describe and demonstrate personal, shop and job site safety practices and procedures
- WR-5.15 Demonstrate safe dress and use of relevant safety gear and personal protective equipment (PPE), including wrist rests, adjustable workspaces and equipment, gloves, boots, earplugs, eye protection, and breathing apparatus
- WR-5.16 Illustrate appropriate safe body mechanics, including proper lifting techniques and ergonomics

- WR-5.17 Locate emergency equipment in your lab, shop, and classroom, including (where appropriate) eyewash stations, shower facilities, sinks, fire extinguishers, fire blankets, telephone, master power switches, and emergency exits
- WR-5.18 Demonstrate the safe use, storage, and maintenance of every piece of equipment in the lab, shop, and classroom
- WR-5.19 Describe safety practices and procedures to be followed when working with and around electricity
- WR-5.20 Illustrate proper handling and storage practices, including working with hazardous materials, disposal, and recycling
- WR-5.21 Demonstrate proper workspace cleaning procedures
- WR-5.22 Illustrate First Aid procedures for potential injuries and other health concerns in the occupational area
- WR-5.23 Describe the importance of emergency preparedness and an emergency action plan
- WR-5.24 Illustrate procedures used to handle emergency situations and accidents, including identification, reporting, response, evacuation plans, and follow-up procedures
- WR-5.25 Identify practices used to avoid accidents
- WR-5.26 Identify and describe fire protection, precautions and response procedures
- WR-5.27 Discuss the role of the individual and the company/organization in ensuring workplace safety
- WR-5.28 Discuss ways to identify and prevent workplace/school violence

### **Aligned to Washington State Standards**

#### **Arts**

#### **Communication - Speaking and Listening**

#### **Health and Fitness**

#### Language

CC: College and Career Readiness Anchor Standards for Language

3 - Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

#### **Mathematics**

#### Reading

CC: College and Career Readiness Anchor Standards for Reading

- 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 from the text.
- 2 Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- 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 meaning or tone.
- 10 Read and comprehend complex literary and informational texts independently and proficiently.

Science		
Social Studies		
Writing		
	21st Century Skills	
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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 2 CAREERS TRANSPORTATION

### **Performance Assessment(s):**

Broader understanding of potential careers in the transportation industry. Industry partners provide guest speakers.

#### **Leadership Alignment:**

Skills USA component career exploration

### **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-1.6 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-1.13 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

- 1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Hours: 2

Mathematics		
Reading		
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Writing		
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LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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

Jnit 3 THE AUTOMOTIVE INDUSTRY	Hours: 1
Performance Assessment(s):	
ormative evaluaton of information in presentation. Instructor led power point including quiz.	
eadership Alignment:	
kills USA PDP investigation of careers in Automotive Technology	
Standards and Competencies	
Standard WR 1: Career Planning  VR-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 in the VR-1.4 Determine academic/training or certification requirements for transition from one learning level to the next and explore opportunities for earning chool such as advanced placement, tech prep, International Baccalaureate, college in the high school, military and apprenticeship opportunities.	
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CC: College and Career Readiness Anchor Standards for Writing	
- Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investi	gation.
- Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information	

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

21st Century Skills		
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 Literacy	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 BASIC TOOLS	Hours: 2
Performance Assessment(s):	
Formative quiz using Student Response System during instructor led power point presentation. Students demonstrate proficiency in shop activities	
_eadership Alignment:	
Standards and Competencies	
Standard: Demonstrate the use of hand tools Common hand tools (pliers, combination wrenches, open-end wrenches, box end wrenches, punches, chisel, hammers, adjustable wrenches, sock wrenches, Allen wrenches, files, hacksaws, thread cutting taps, thread cutting dies, etc Use Lifting tools safely.	ets, extensions, torque
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Mathematics	
Reading	
Science	
Social Studies	
Writing	
CC: College and Career Readiness Anchor Standards for Writing	
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Automotive Maintenance/Foundations

Unit 4 Basic Tools

Page 8 of 37

21st Century Skills		
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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 Work 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

Automotive Maintenance/Foundations

Unit 4 Basic Tools

Page 9 of 37

Unit 5 ENGINE OPERATION Hours: 6

#### **Performance Assessment(s):**

Formative evaluation Student Response System quiz based on instructor led power point presentation. Instructor summative evaluation based on students ability to understand engine operation and demonstrate basic vehicle service.

#### **Leadership Alignment:**

Students are encouraged to compete in regional, state and national Skills USA competitions.

### **Standards and Competencies**

Standard: Basic Engine Fundamentals

- Understand ignition system components
- Understand cooling system purpose
- Understand fuel system purpose
- Demonstrate preventative maintenance tasks include belts, hoses, fluid levels, and lights.

### **Aligned to Washington State Standards**

**Arts** 

#### **Communication - Speaking and Listening**

#### **Health and Fitness**

### Language

CC: College and Career Readiness Anchor Standards for Language

- 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 specialized reference materials, as appropriate.
- 5 Demonstrate understanding of word relationships and nuances in word meanings.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

#### **Mathematics**

- 1 Make sense of problems and persevere in solving them.
- 2 Reason abstractly and quantitatively.
- 4 Model with mathematics.
- 5 Use appropriate tools strategically.
- 6 Attend to precision.
- 8 Look for and express regularity in repeated reasoning.

Reading		
Science		
Social Studies		
Writing		
	21st Century Skills	
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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 VEHICLE LIFTS Hours: 4

#### **Performance Assessment(s):**

Demonstate ability to safely lift a vehicle on different types of lifts in the automotive shop

### **Leadership Alignment:**

### **Standards and Competencies**

Standard: Demonstrate procedures used to lift equipment

- Identify the various types of lifting and hoisting equipment.
- Properly and safely lift materials with lifting and hoisting equipment used in the shop or field location.
- Demonstrate the proper and safe use of a hydraulic press and pullers.

### **Aligned to Washington State Standards**

#### **Arts**

### **Communication - Speaking and Listening**

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

2 - Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

Automotive Maintenance/Foundations Unit 6 Vehicle Lifts Page 12 of 37

Health and Fitness		
Language		
Mathematics		
Reading		
Science		
Social Studies		
Writing		
	21st Century Skills	
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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

Init 7 MEASURING AND MEASUREMENT TOOLS	Hours: 4
Performance Assessment(s):	•
ormative quiz on Student Response System instuctor led power point lesson. Students demonstrate proffeciency with various	s measuring tools.
eadership Alignment:	
Standards and Competencies	
standard: Demonstrate proper measuring procedures.	
- Describe commonly used low precision measuring tools (steel rule, tape measure, ruler, and combination square)	
- Identify an outside caliper and explain what it is used.	
- Identify and inside caliper and explain what it is used.	
- Identify a feeler gauge and explain what it is used.	
- Identify a hole gauge and explain what it is used.	
- Identify a telescoping/snap gauge and explain what it is used.	
- Identify a vernier caliper and explain what it is used.	
- Identify an outside micrometer and explain what it is used.	
- Identify an inside micrometer and explain what it is used.	
- Identify a depth indicator gauge and explain what it is used.	
- Identify a dial indicator and explain what it is used.	
- Identify a go/no go gauge and explain what it is used.	
- Identify plastic gauge and what it is used.	
Aligned to Washington State Standards	
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lathematics	
C: Mathematical Practices (MP)	
- Make sense of problems and persevere in solving them.	
- Model with mathematics.	

- 5 Use appropriate tools strategically.
- 6 Attend to precision.
- 8 Look for and express regularity in repeated reasoning.

Reading		
Science		
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	21st Century Skills	
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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 8 POWER/PNUEMATIC TOOLS

Hours: 2

#### **Performance Assessment(s):**

Formative quiz in Student Response Ssytem during instructor led power point presentation. Students demonstrate proffeciency in shop activities.

#### **Leadership Alignment:**

### **Standards and Competencies**

Standard: Demonstrate the use of power tools.

- Drill holes to given specifications using an electric drill
- Identify types of drill bits
- Identify and explain the purpose of an air impact wrench
- Identify and explain the purpose of impact sockets
- Identify and explain the purpose of an electric soldering iron
- Identify and explain the purpose of a bench grinder

### **Aligned to Washington State Standards**

#### **Arts**

#### **Communication - Speaking and Listening**

#### **Health and Fitness**

#### Language

CC: College and Career Readiness Anchor Standards for Language

6 - Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Mathematics		
Reading		
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LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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 8 INFORMATION SYSTEMS Hours: 1

#### Performance Assessment(s):

Students access, research and produce an estimate including repair procedure using digital information system (AllData).

#### **Leadership Alignment:**

### **Standards and Competencies**

Standard: Identify and use technical publications (service manuals, IPL's, Microfiche, CD).

- Describe types of service and parts manual formats and their applications.
- Reference information in manuals and materials correctly.
- Define industry specific terminology and nomenclature.
- Calculate time using labor time guides and flat rate time.
- Solve problems following a diagnostic and troubleshooting manual.
- Identify manufacturer, model, serial number, and type of a part.

### **Aligned to Washington State Standards**

#### **Arts**

### **Communication - Speaking and Listening**

#### **Health and Fitness**

#### Language

CC: College and Career Readiness Anchor Standards for Language

- 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 specialized reference materials, as appropriate.
- 5 Demonstrate understanding of word relationships and nuances in word meanings.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Mathematics			
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21st Century Skills			
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS	
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 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	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 9 FLUID LEVEL CHECKS Hours: 8

#### **Performance Assessment(s):**

Formative evaluation based on students ability to demonstrate correct lubrication checks, maintenance and safety checks on shop vehicles.

#### **Leadership Alignment:**

Students discuss ethics of safety evaluation of vehicles as per the PDP.

### **Standards and Competencies**

Standard: Lubrication and Safety Checks

- Understand types of fluids and how to service fluids on a vehicle
- Change and service engine oil.
- Demonstrate preventative maintenance tasks include belts, hoses, and fluid levels

#### **Aligned to Washington State Standards**

#### **Arts**

#### **Communication - Speaking and Listening**

#### **Health and Fitness**

### Language

CC: College and Career Readiness Anchor Standards for Language

- 1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Automotive Maintenance/Foundations

Unit 9 Fluid Level Checks

Page 20 of 37

Mathematics			
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Reading			
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Social Studies			
Writing			
21st Century Skills			
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS	
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 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	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 11 LUBRICATION SYSTEMS Hours: 6

#### **Performance Assessment(s):**

Formative evaluation based on students ability to correctly perform a vehicle service

### **Leadership Alignment:**

### **Standards and Competencies**

Standard: Lubrication and Safety Checks

- Understand types of fluids and how to service fluids on a vehicle
- Change and service engine oil.
- Demonstrate preventative maintenance tasks include belts, hoses, and fluid levels

### Aligned to Washington State Standards

#### **Arts**

#### **Communication - Speaking and Listening**

#### **Health and Fitness**

#### Language

CC: College and Career Readiness Anchor Standards for Language

- 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 specialized reference materials, as appropriate.
- 5 Demonstrate understanding of word relationships and nuances in word meanings.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

#### **Mathematics**

- 1 Make sense of problems and persevere in solving them.
- 4 Model with mathematics.
- 5 Use appropriate tools strategically.
- 6 Attend to precision.
- 8 Look for and express regularity in repeated reasoning.

Reading				
Science				
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	21st Century Skills			
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS		
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 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	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 COOLING SYSTEMS Hours: 6

#### **Performance Assessment(s):**

Formative evaluation. Student Response System quiz during instructor led power point presentation. Students demonstrate ability to analyze and evaluate an automotive cooling system.

### **Leadership Alignment:**

### **Standards and Competencies**

Standard: Cooling System Service

- Check coolant
- Understand cooling system purpose
- Check antifreeze protection
- Demonstrate preventative maintenance tasks include belts, hoses, and fluid levels

### **Aligned to Washington State Standards**

#### **Arts**

#### **Communication - Speaking and Listening**

#### **Health and Fitness**

#### Language

CC: College and Career Readiness Anchor Standards for Language

- 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 specialized reference materials, as appropriate.
- 5 Demonstrate understanding of word relationships and nuances in word meanings.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

#### **Mathematics**

- 1 Make sense of problems and persevere in solving them.
- 4 Model with mathematics.
- 5 Use appropriate tools strategically.
- 6 Attend to precision.

Reading		
Science		
Social Studies		
Writing		
	21st Century Skills	
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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 BRAKING SSYTEMS Hours: 8

#### **Performance Assessment(s):**

Formative evaluation. Student Response System quiz during instructor led power point presentation. Students demonstrate ability to evaluate braking system on shop vehicle.

#### **Leadership Alignment:**

### **Standards and Competencies**

Standard: Brake Service

- Understand braking system operation
- Recognize types of brakes
- Recognize components of the braking system
- Demonstrate preventative maintenance tasks include belts, hoses, fluid levels, and brakes.

### **Aligned to Washington State Standards**

#### **Arts**

### **Communication - Speaking and Listening**

#### **Health and Fitness**

#### Language

CC: College and Career Readiness Anchor Standards for Language

- 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 specialized reference materials, as appropriate.
- 5 Demonstrate understanding of word relationships and nuances in word meanings.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

#### **Mathematics**

- 4 Model with mathematics.
- 5 Use appropriate tools strategically.
- 6 Attend to precision.

Reading		
Science		
Social Studies		
Writing		
	21st Century Skills	
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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 IGNITIONS SYSTEMS Hours: 6

#### **Performance Assessment(s):**

Formative evaluation. Student response system quiz during instructor led power point presentation. Students demonstrate understanding of ignition system in shop activity.

#### **Leadership Alignment:**

### **Standards and Competencies**

Standard: Basic Engine Fundamentals

- Understand ignition system components
- Demonstrate preventative maintenance tasks include belts, hoses, fluid levels, and lights.

### **Aligned to Washington State Standards**

#### **Arts**

### **Communication - Speaking and Listening**

#### **Health and Fitness**

#### Language

CC: College and Career Readiness Anchor Standards for Language

- 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 specialized reference materials, as appropriate.
- 5 Demonstrate understanding of word relationships and nuances in word meanings.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

#### **Mathematics**

- 5 Use appropriate tools strategically.
- 6 Attend to precision.

Reading		
Science		
Social Studies		
Writing		
	21st Century Skills	
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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 FUELS AND FUEL SYSTEMS

### Hours: 8

#### **Performance Assessment(s):**

Formative evaluation based on Student Response Systems quiz during instructor led power point presentation. Students demonstrate ability to understand fuel system checks on shop vehicle.

#### **Leadership Alignment:**

### **Standards and Competencies**

Standard: Basic Engine Fundamentals

- Understand fuel system purpose
- Demonstrate preventative maintenance tasks include belts, hoses, fluid levels, and lights.

### **Aligned to Washington State Standards**

#### Arts

#### Communication - Speaking and Listening

#### **Health and Fitness**

#### Language

CC: College and Career Readiness Anchor Standards for Language

- 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 specialized reference materials, as appropriate.
- 5 Demonstrate understanding of word relationships and nuances in word meanings.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

#### **Mathematics**

- 6 Attend to precision.
- 7 Look for and make use of structure.
- 8 Look for and express regularity in repeated reasoning.

Reading			
Science			
Social Studies			
Writing			
21st Century Skills			
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS	
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 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	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 16 TIRES AND WHEELS Hours: 8

#### **Performance Assessment(s):**

Formative evaluation Student Response System quiz duing instructor led power point presentation. Formative evaluation based on students ability to change, repair, mount and balance a tire using shop equipment and vehicle.

#### **Leadership Alignment:**

### **Standards and Competencies**

Standard: Tire Service and Suspension

- Understand tire maintenance and care
- Demonstrate preventative maintenance tasks include, tire pressures, and tire wear.

### **Aligned to Washington State Standards**

**Arts** 

#### Communication - Speaking and Listening

#### **Health and Fitness**

### Language

CC: College and Career Readiness Anchor Standards for Language

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 specialized reference materials, as appropriate.
- 5 Demonstrate understanding of word relationships and nuances in word meanings.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

#### **Mathematics**

- 1 Make sense of problems and persevere in solving them.
- 5 Use appropriate tools strategically.
- 6 Attend to precision.

Reading		
Science		
Social Studies		
Writing		
	21st Century Skills	
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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Unit 17 EXHAUST SYSTEMS Hours: 2

#### **Performance Assessment(s):**

Formative evaluation based on Student Response System quiz during instructor led power point presentation.

#### **Leadership Alignment:**

### **Standards and Competencies**

# Aligned to Washington State Standards

**Arts** 

#### **Communication - Speaking and Listening**

#### **Health and Fitness**

#### Language

CC: College and Career Readiness Anchor Standards for Language

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 specialized reference materials, as appropriate.
- 5 Demonstrate understanding of word relationships and nuances in word meanings.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Mathematics		
Reading		
Science		
Social Studies		
Writing		
	21st Century Skills	
LEARNING AND INNOVATION	INFORMATION, MEDIA AND TECHNOLOGY SKILLS	LIFE AND CAREER SKILLS
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 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	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 18 STEERING AND SUSPENSION SYSTEMS

#### **Performance Assessment(s):**

Formative evaluation Student Response System quiz during instructor led power point presentation.

#### **Leadership Alignment:**

### **Standards and Competencies**

Standard: Tire Service and Suspension

- Identify parts of the suspension system
- Understand tire maintenance and care
- Demonstrate preventative maintenance tasks include, tire pressures, and tire wear.

### Aligned to Washington State Standards

#### **Arts**

#### Communication - Speaking and Listening

#### **Health and Fitness**

#### Language

CC: College and Career Readiness Anchor Standards for Language

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 specialized reference materials, as appropriate.
- 5 Demonstrate understanding of word relationships and nuances in word meanings.
- 6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

#### **Mathematics**

#### CC: Geometry (G)

- 4 Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.
- 6 Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
- 8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
- 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.\*

#### 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.
- 8 Look for and express regularity in repeated reasoning.

Hours: 8

Reading			
Science			
Social Studies			
Writing			
	21st Century Skills		
LEARNING AND INNOVATION		LIFE AND CAREER SKILLS	
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	✓ Access and Evaluate Information ✓ Use and Manage Information  Media Literacy  Analyze Media  Create Media Products  Information, Communications, and Technology (ICT Literacy)  Apply Technology Effectively	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	
Communication and Collaboration  Communicate Clearly	F L	✓ Work Effectively in Diverse Productivity and Accountable Manage Projects  ☐ Produce Results	se Teams pility ility