

## Bruner's E5: Evaluation Lens

Process	4C Super Skill	Engine Management System Activity
<p>1) After connecting the scan-tool with a scope probe, insert the probe into a check terminal wish to measuring. (Be sure to connect the grounding cable).</p> <p>2) On the initial main screen, enter <b>[SCOPE]</b> and select <b>[SINGLE AUTO SET (CH1)]</b>.</p> <p>3) The wave form is measured according to the adjustment of time axis and voltage axis.</p>	Communicating	<p>Demonstrate mastery of waveform analysis concepts in an oral presentation, explaining how waveforms are measured and interpreted in engine diagnostics.</p> <p>Discuss the evaluation of waveform analysis as a diagnostic tool for engine management, highlighting its advantages and limitations compared to other diagnostic methods.</p>
	Collaborating	<p>Complete peer assessment within a team, evaluating each member's understanding of waveform analysis and providing feedback to enhance comprehension and diagnostic skills.</p> <p>Use collaborative electronic tools to evaluate waveform analysis techniques, sharing insights and discussing different approaches to interpreting waveforms for engine diagnostics</p>
	Critical Thinking and Problem Solving	<p>Reflect on the value of waveform analysis in real-life engine diagnostic scenarios, considering its role in identifying and solving complex engine problems.</p> <p>Debate the effectiveness of waveform analysis in diagnosing engine issues compared to traditional diagnostic methods, analyzing the benefits and drawbacks of each approach.</p> <p>Complete a self-assessment exercise after performing waveform analysis on engine systems, evaluating personal diagnostic skills and identifying areas for improvement in future diagnostic procedures.</p>
	Creating and Innovating	<p>Use formative assessment techniques to improve waveform analysis performance, incorporating feedback to refine diagnostic strategies and optimize engine diagnostic processes.</p> <p>Design a model illustrating legal and ethical considerations when using waveform analysis tools for engine</p>

		<p>diagnostics, addressing issues such as data privacy and professional responsibility in diagnostic practices.</p> <p>Complete open-ended assessment tasks related to waveform analysis, such as analyzing complex waveform patterns and developing innovative diagnostic solutions for challenging engine problems.</p>
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<p>1) Turn on the 'IGNITION KEY' and activate the system.</p> <p>2) Locate the scanner in better place to measure and insert the connector into the D.L.C terminal.</p> <p>3) When power on the scanner, the initial main screen will be displayed.</p>	Communicating	<p>Demonstrate mastery of system activation process through an oral presentation, explaining each step and its significance.</p> <p>Discuss and evaluate the effectiveness of different methods of activating the system, considering factors such as speed and accuracy.</p>
	Collaborating	<p>Complete peer assessment for team members involved in the system activation process, providing constructive feedback to improve performance.</p> <p>Work collaboratively to evaluate the system activation process using tools like Kagan's Jig-Saw structure or Kivunja's Star Graphic Organizer.</p>
	Critical Thinking and Problem Solving	<p>Reflect on the learning outcomes of the system activation process and discuss its real-life applications and implications.</p> <p>Complete a Plus, Minus, Interesting (PMI) model to evaluate the system activation process, identifying strengths, weaknesses, and areas for improvement.</p> <p>Debate the efficiency of different techniques for system activation and conduct a cost-benefit analysis to determine the most effective approach.</p>
	Creating and Innovating	<p>Use formative assessment to improve system activation performance and propose changes or innovations to enhance the process.</p> <p>Design a model illustrating legal and ethical behaviours when using digital tools like scanners and connectors in the context of the system activation process.</p>

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<p>1) Select <b>[Scan]</b> on the main screen, then select <b>[ENHANCED SCAN]</b> on the selection screen.</p> <p>2) Select <b>[KOREAN]</b> in the country selection screen, then select <b>[HYUNDAI]</b> in the manufacturer selection screen.</p> <p>3) Select <b>[HYUNDAI MOTORS]</b>, then select <b>[EF SONATA]</b> on the vehicle model selection screen.</p> <p>4) Select <b>[ENGINE CONTROL DOHC]</b> on the vehicle selection submenu screen. The following screen will appear if the communication with the engine ECU is successful.</p> <p>5) A communication error screen will appear if the diagnostics cable connection is faulty or if the system malfunctions. Check the related wiring and circuits and try again.</p> <p>6) Click <b>[SELF DIAGNOSIS]</b> to display the trouble codes.</p> <p>7) Press <b>[ESC]</b> to leave the screen, then select <b>[CURRENT DATA]</b> to check the system's service data.</p> <p><b>Checklist for addressing a communication error</b></p>	Communicating	<p>Demonstrate mastery of diagnostic procedures through an oral presentation, explaining each step and its significance in identifying engine issues.</p> <p>Discuss the evaluation of the diagnostic process, including the effectiveness of selecting the correct vehicle type and interpreting trouble codes.</p>
	Collaborating	<p>Collaborate with peers to complete peer assessments of diagnostic procedures, providing constructive feedback and suggestions for improvement.</p> <p>Use collaborative tools to evaluate diagnostic data and troubleshoot communication errors encountered during the diagnostic process.</p>
	Critical Thinking and Problem Solving	<p>Reflect on the importance of diagnostic procedures in real-life situations and discuss their relevance in solving engine-related issues.</p> <p>Analyze diagnostic data using a Plus, Minus, Interesting (PMI) model to identify strengths and weaknesses in diagnostic approaches and propose improvements.</p> <p>Debate the effectiveness of diagnostic tools and techniques in addressing engine problems and evaluate their impact on resolving issues.</p>
	Creating and Innovating	<p>Design a SWOT analysis of the diagnostic process, identifying opportunities for improvement and proposing innovative solutions to enhance diagnostic accuracy.</p> <p>Use formative assessment to assess individual and team performance in diagnostic procedures and develop personalized portfolios showcasing diagnostic skills.</p>

1) Check the wiring connections. 2) Verify that the vehicle type selected corresponds to the actual vehicle. 3) Check if the ignition key is in the ON position.		
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<p>1) When the engine warning lamp continuously lights up, solve the problem by using the scanner. When they are not erased, set the variable control knob for major sensors to normal value, and erase them again.</p> <p>2) When the engine alarm lamp keeps lighting up and in an emergency condition without scanner, push the emergency stop switch and turn it on after 15 seconds to clear the memory</p>	Communicating	<p>Demonstrate mastery of engine diagnostic procedures in an oral presentation, explaining step-by-step how to troubleshoot warning lamp issues.</p> <p>Discuss the evaluation of different scanner models and their effectiveness in diagnosing engine problems during a class discussion.</p>
	Collaborating	<p>Complete peer assessment by working in teams to evaluate each other's understanding of engine warning lamp troubleshooting techniques.</p> <p>Collaborate in a team to mentor each other, providing feedback on the effectiveness of engine diagnostic strategies and solutions.</p>
	Critical Thinking and Problem Solving	<p>Reflect on the value of engine management system knowledge in real-life scenarios, discussing its importance in resolving automotive issues.</p> <p>Conduct a Cost-Benefit Analysis of different engine diagnostic tools to determine their practicality and effectiveness in resolving warning lamp issues.</p> <p>Recognize bias in online resources related to engine diagnostics and evaluate their credibility in solving engine problems.</p>
	Creating and Innovating	<p>Design a model of legal and ethical behaviors when using diagnostic tools to ensure responsible and effective troubleshooting practices.</p> <p>Complete open-ended assessment tasks by proposing innovative solutions to common engine warning lamp problems, incorporating critical thinking skills.</p>

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<p>1) When there is any trouble in the system, the ECU senses it, lighting the warning lamp.</p> <p>2) ECU changes the mode of troubled sensors and actuators into Fail Safe to control them, when engine warning lamps light up.</p>	Communicating	<p>Demonstrate mastery of understanding how the ECU detects issues and activates warning lamps through an oral presentation.</p> <p>Discuss the evaluation of engine diagnostic procedures and their effectiveness in identifying problems.</p>
	Collaborating	<p>Complete peer assessment of troubleshooting techniques with team members to improve problem-solving skills.</p> <p>Work collaboratively to evaluate the effectiveness of different diagnostic tools and techniques in engine management.</p>
	Critical Thinking and Problem Solving	<p>Reflect on the value of understanding engine diagnostics in real-life scenarios and its impact on vehicle safety.</p> <p>Use a Plus, Minus, Interesting (PMI) model to evaluate the benefits and limitations of various diagnostic approaches.</p> <p>Debate the effectiveness of engine warning systems in addressing vehicle malfunctions and ensuring driver safety.</p>
	Creating and Innovating	<p>Complete a SWOT analysis of proposed changes to engine diagnostic procedures to identify potential risks and benefits.</p> <p>Use formative assessment data to innovate and improve engine diagnostic protocols for more accurate troubleshooting.</p> <p>Design a model illustrating legal and ethical considerations in using engine diagnostic tools and data.</p>

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<p>1) Check terminal is connected to sensors, actuators of EMS control circuit.</p> <p>2) Trainee exercises test of voltage, current and resistance of each check terminal of EMS with multi-tester.</p>	Communicating	<p>Demonstrate mastery of EMS testing procedures through an oral presentation, explaining the importance of checking terminals and interpreting test results.</p> <p>Discuss the evaluation of EMS diagnostic tasks, including the accuracy of voltage, current, and resistance measurements, and their implications for engine performance.</p>
	Collaborating	<p>Complete peer assessments of EMS testing techniques, providing constructive feedback to improve accuracy and efficiency in diagnosing engine issues.</p> <p>Work collaboratively in teams to evaluate the effectiveness of EMS testing methods and tools, using the Kivunja Star Graphic Organizer to identify strengths and weaknesses.</p>
	Critical Thinking and Problem Solving	<p>Reflect on the value of EMS testing skills in real-life scenarios, debating the importance of accurate diagnostics for efficient engine management.</p> <p>Conduct a Cost-Benefit Analysis of EMS testing procedures, weighing the costs of diagnostic tools against the benefits of improved engine performance and longevity.</p> <p>Complete a self-assessment exercise to evaluate individual proficiency in EMS diagnostics, identifying areas for improvement and setting goals for skill development.</p>
	Creating and Innovating	<p>Use formative assessment data to develop innovative strategies for optimizing EMS testing procedures, such as creating personalized portfolios of diagnostic techniques.</p> <p>Design a model illustrating legal and ethical behaviors in EMS diagnostics, emphasizing the importance of accuracy, honesty, and integrity in</p>



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