SEG Awards Level 2

Motor Vehicle Studies

**Underpinning Knowledge Evidence Record**

K/601/6237 Knowledge of Materials, Fabrication, Tools and Measuring Devices used in the Automotive Environment

|  |  |
| --- | --- |
| **Learners Name** |  |
| **SEG Awards Registration Number** |  |
| **Centre Name** |  |
| **Assessor 1 Name** |  |
| **Assessor 2 Name** |  |

**DECLARATION OF AUTHENTICITY**

This declaration must be completed and signed by the learner and countersigned by the tutor / assessor and covers all evidence submitted for moderation.

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| --- | --- | --- | --- |
| Learner Name |  | | |
| Unique Learner Number (ULN) |  | SEG  Learner Reg. ID |  |
| Qualification Title |  | | |
| Centre Name |  | | |

# Learner statement of authenticity

**Before signing please read the guidance below**.

I confirm, that the attached assignment / portfolio is all my own work[[1]](#footnote-1) and does not include any work completed by anyone other than myself. I have completed the assignment / portfolio in accordance with SEG Awards’ instructions and within the time limits set by my centre.

|  |  |  |  |
| --- | --- | --- | --- |
| Signature |  | Date |  |

# Centre confirmation of authenticity

On behalf of …………………………………….(insert centre name), I confirm that the above mentioned learner, to the best of my knowledge, is the sole author of the completed assignment / portfolio attached, and the assessments have been completed under the required conditions.

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| --- | --- | --- | --- |
| Signed |  | Date |  |
| Name |  | | |
| Title |  | | |

**Guidance for Learners**

You have been asked to sign this Declaration of Authenticity and place it at the front of your portfolio or course work assessment. It confirms that the work you have submitted for assessment is your own and that you have not copied it from someone else or allowed another learner to copy it from you.

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If you do copy words from a published source and do not indicate their reference you will be committing plagiarism. This is considered a form of cheating and may result in your assessment being declared void.

**Contents**

|  |  |  |
| --- | --- | --- |
| **Task No** | **Title** | **Assessment Criteria** |
| 1 | Hand tools | 1.1, 1.3, 1.5 |
| 2 | Measuring devices | 1.2, 1.3, 1.5 |
| 3 | Workshop equipment | 2.2 |
| 4 | Properties of materials | 3.1, 3.2, 3.3 |
| 5 | Fabricating | 4.1, 4.2, 4.3 |
| 6 | Locking and fastening | 4.4, 4.5 |

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| **Task 1 – Hand tools** | **Assessment Criteria 1.1, 1.3, 1.5** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Identify the types of spanners/wrenches below** | | | |
|  |  |  |  |
| **Name** | **Name** | **Name** | **Name** |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Identify the types of pliers below** | | | |
|  |  |  |  |
| **Name** | **Name** | **Name** | **Name** |
|  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Identify the types of screwdriver below** | | | | |
|  |  |  |  |  |
| **Name** | **Name** | **Name** | **Name** | **Name** |
|  |  |  |  |  |

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| **State how to correctly store and maintain hand tools** |
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|  |  |  |  |
| --- | --- | --- | --- |
| **Identify the drilling and thread forming tools and their uses in the table below** | | | |
|  | |  | |
| **Name** |  | **Name** |  |
| **Use** |  | **Use** |  |
|  | | | |
|  | |  | |
| **Name** |  | **Name** |  |
| **Use** |  | **Use** |  |

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| **Task 2 – Measuring devices** | **Assessment Criteria 1.2, 1.3, 1.5** |

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| **Below is a selection of measuring devices commonly used in the automotive environment, identify the types of measuring devices in the box provided and their limit of accuracy** | | | | | |
|  | |  | |  | |
| **Name** |  | **Name** |  | **Name** |  |
| **limit of accuracy** |  | **limit of accuracy** |  | **limit of accuracy** |  |
|  | | | | | |
|  | |  | |  | |
| **Name** |  | **Name** |  | **Name** |  |
| **limit of accuracy** |  | **limit of accuracy** |  | **limit of accuracy** |  |

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| **State how to correctly store and maintain measuring devices** |
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| **Task 3 – Workshop equipment** | **Assessment Criteria 2.2** |

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| **Identify the workshop equipment below and state their use in the box provided** | | | | | |
|  | |  | |  | |
| **Name** |  | **Name** |  | **Name** |  |
| **Use** |  | **Use** |  | **Use** |  |
|  | | | | | |
|  | |  | |  | |
| **Name** |  | **Name** |  | **Name** |  |
| **Use** |  | **Use** |  | **Use** |  |

|  |  |  |  |  |  |
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| **Identify the workshop equipment below, state their use and a suitable safety check in the boxes provided** | | | | | |
|  | |  | |  | |
| **Name** |  | **Name** |  | **Name** |  |
| **Use** |  | **Use** |  | **Use** |  |
| **Safety Check** |  | **Safety Check** |  | **Safety Check** |  |

|  |
| --- |
| **Describe what is meant by the term ‘Safe Working Load’?** |
|  |

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| --- | --- | --- | --- |
| **Identify the electrical test equipment and their uses in the table below** | | | |
|  | |  | |
| **Name** |  | **Name** |  |
| **Use** |  | **Use** |  |
|  | | | |
|  | |  | |
| **Name** |  | **Name** |  |
| **Use** |  | **Use** |  |

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| --- |
| **What precautions should be taken when using electrical test equipment?** |
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|  |  |
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| **Task 4 - Properties of materials** | **Assessment Criteria 3.1, 3.2, 3.3** |

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| **In the table below provide the definition of the listed material properties** | |
| **Property** | **Definition** |
| **Hardness** |  |
| **Toughness** |  |
| **Ductility** |  |
| **Elasticity** |  |
| **Malleability** |  |
| **Plasticity** |  |

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| **The modern motor vehicle is constructed using a variety of metals and other materials and it is important to know where these materials are used.**  **The table below identifies some materials that are used in motor vehicles**   * **Complete the table by identifying the components that would be made from the material listed.** | | | | |
| **Metallic** | | | | |
| **Material** | **Properties** | | **Limitations** | **Motor Vehicle Component** |
| **Steel** |  | |  |  |
| **Alloy steel** |  | |  |  |
| **Aluminium alloy** |  | |  |  |
| **Cast iron** |  | |  |  |
| **Copper** |  | |  |  |
| **Non-Metallic** | | | | |
| **Material** | | **Properties** | **Limitations** | **Motor Vehicle Component** |
| **Glass** | |  |  |  |
| **Thermo-setting plastic** | |  |  |  |
| **Thermo-plastic plastic** | |  |  |  |
| **Kevlar** | |  |  |  |
| **Rubber** | |  |  |  |

|  |  |
| --- | --- |
| **Task 5 - Fabricating** | **Assessment Criteria 4.1, 4.2, 4.3** |

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| **Describe how to tap a thread** |
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|  |
| --- |
| **Describe how to produce a thread on a round bar** |
|  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **In the table below identify the tools used to measure, mark out, shape and join materials when fabricating** | | | | |
| **Metals** | | | | |
|  | **Measure** | **Mark Out** | **Shape** | **Join** |
| **Tool** |  |  |  |  |
| **Plastics** | | | | |
|  | **Measure** | **Mark Out** | **Shape** | **Join** |
| **Tool** |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Describe the selection and fitting procedures of the following** | | |
| **Property** | **Selection** | **Fitting Procedures** |
| **Gaskets and seals** |  |  |
| **Sealants and adhesives** |  |  |
| **Fittings and fasteners** |  |  |
| **Electrical circuit components** |  |  |

|  |  |
| --- | --- |
| **Task 6 - Locking and fastening** | **Assessment Criteria 4.4, 4.5** |

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| --- | --- | --- |
| **Identify the locking devices below and state where each may be used** | | |
| **Locking Device** | **Name** | **Use** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
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| **State why it is important to adhere to correct operating specifications for limits, fits and tolerances in the automotive environment** |
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1. Unless otherwise stated e.g. for some entry level qualifications, learners can work together but should identify sections which are their own work. [↑](#footnote-ref-1)