Skills in routine light vehicle maintenance

Personal protective equipment

When carrying out any routine light vehicle maintenance it is important to comply with all health and safety legislation. This includes using appropriate personal protective equipment (APPE) – this is appropriate to the task being carried out, such as having oil-resistant gloves on when draining oil, or wearing safety glasses when using a hammer and chisel.

1 Give five items of APPE commonly used when carrying out routine light vehicle maintenance and repair.
   a) ........................................................................................................................................
   b) ........................................................................................................................................
   c) ........................................................................................................................................
   d) ........................................................................................................................................
   e) ........................................................................................................................................

Protecting the customer’s car

Apart from a house, a car is often the most expensive purchase most people will ever make. It should be treated as if it was your own and protected from damage while maintenance is carried out.

2 Give one interior item used for vehicle protection during maintenance.
   ........................................................................................................................................

3 Give one exterior item used for vehicle protection during maintenance.
   ........................................................................................................................................
Minimising risks

The workshop can be a dangerous environment so risks must be managed when performing a task. Before carrying out any routine light vehicle maintenance, you must investigate the risks involved.

Have a look at the situation, identify all the potential hazards and assess their risk (chance of happening) by giving each a numerical score from 1 to 10 (low numbers being safe, high numbers being dangerous). An example is given in the table below. Add the numbers together to give a total score indicating the chance of an accident. Make a plan to reduce the hazard or lessen the risk. Then reassess the hazard and the risk and give them new scores. Adding these together should give a lower total, indicating that the situation is now safer.

<table>
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<tr>
<th>Situation</th>
<th>Hazard</th>
<th>Score</th>
<th>Action</th>
<th>Score</th>
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<tr>
<td></td>
<td></td>
<td>Hazard</td>
<td>Risk</td>
<td>Total</td>
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<tr>
<td>Air pipe lying across floor</td>
<td>Someone tripping on the pipe</td>
<td>6</td>
<td>6</td>
<td>12</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Remove pipe to floor near wall</td>
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4. Imagine you are carrying out an oil and filter change – list and score the risks involved using the risk assessment table below. Then discuss this with your tutor or employer.
Environmental factors
The routine maintenance of light vehicles involves the replacement of fluids and oils that are hazardous and carcinogenic (could cause cancer). These should not come into contact with the skin or be ingested (eaten), either by accident or when eating with dirty hands. Components will also need adjusting or replacing at regular intervals, set by the vehicle’s manufacturer.

These fluids and components can be dangerous to the environment if not properly disposed of. Incorrect or even illegal disposal can result in heavy fines under the Control of Substances Hazardous to Health (COSHH) Regulations.

5 In the table below, list all the fluids and components that should be replaced as part of a routine full service on a light vehicle and how each should be properly disposed of.
When repairing light vehicles you will need to reference data specific to the vehicle you are working on. Some of this information may be in paper format, such as a vehicle manual or data sheet, but most likely it will be in a digital format, either via the internet or, more commonly, an automotive computer program.

6 Working in a small group, use the available program or manual to find out the following for the vehicle you are servicing:

- **a)** Engine oil type and quantity

- **b)** Brake fluid type

- **c)** Coolant type and quantity

- **d)** Gearbox oil type and quantity

- **e)** Tyre pressure
Name .............................................................................................................. Date .........................

f) Brake pad minimum thickness
..........................................................................................................................

g) Brake shoe minimum thickness
..........................................................................................................................

h) Road wheel torque
..........................................................................................................................

i) Sump plug torque
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j) Vehicle jacking points, for use with a ramp, jack and axle stands
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**Tool and equipment selection**
If you look after your tools they will last a lifetime, so selecting the correct tool for the job is important. Are you able to identify all the tools used to carry out routine light vehicle maintenance?

7 Working in a small group, complete the following tasks and fill in the table below:
   a) List as many tools and pieces of equipment required to service and maintain a light vehicle as you can.
   b) For the tools listed, find out what checks should be carried out prior to being used.
   c) Find each of the 20 tools listed and inspect them using the checks you have identified. Record if they are serviceable or not.

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<th>Tool/equipment</th>
<th>Checks</th>
<th>Safe?</th>
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Name .................................................................  Date  .........................

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Record and recommend

It is important that accurate records are kept for invoicing, parts, customer details, vehicle details, warranty and workshop loading. Systems may be paper-based or digital, allowing technicians to access the relevant records using a laptop.

8 Find out the following information.
   a) Where are the records kept in your workplace?

   ...................................................................................................................................

   b) What is an average labour rate for your local area?

   ...................................................................................................................................

   c) When reporting additional work, who authorises it?

   ...................................................................................................................................

9 Choose a specific vehicle and fill out a job card for a routine maintenance task.

Quick quiz

10 What does APPE stand for?

   ...................................................................................................................................

11 List three items that protect a customer’s vehicle when maintenance is being carried out.

   ...................................................................................................................................

12 List three tools or pieces of equipment that need to be regularly calibrated.

   ...................................................................................................................................

13 What tool is used to remove an oil filter?

   ...................................................................................................................................

14 What information is recorded on a service sheet?

   ...................................................................................................................................
15 List four items that require a measured inspection.

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16 On which of the following would you record the details of work to be carried out?
   a) Job card  
   b) Invoice  
   c) Warranty return  
   d) Loading diary  

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17 If you are not sure what to do when carrying out a task, what should you do?

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Are you ready for assessment?

If you can answer yes to the following questions, discuss with your tutor whether you might be ready to be assessed.

- Can you work in a way to minimise any risks to yourself, others, equipment or vehicles?
- Do you know how to properly dispose of lubricants and components?
- Can you easily find technical data for the light vehicle you are servicing?
- Are you able to carry out light vehicle maintenance?
- Do you know how to inspect all the major service components?
- Are you able to make accurate work records?