

Task: Team Player
MLR I-IV 9-12

It is essential for any company or organization to have employees that work together as a team for the company to survive. High school automotive students must also work together in the learning environment. Completing team skills is a measureable task that all students need to master.

- A. The instructor will separate the class into groups of 2-3 students. Each student will have perform a specific task on a rotating basis. Working in smaller groups will help the learner to identify that each student has a specific duty and the task cannot be completed efficiently working as an individual.
- B. The student will inspect the vehicle for necessary information. (e.g. year, make, model, engine size, etc.) All students will understand that necessary information is pertinent to ordering the correct parts. The student/learner will call various parts stores to locate the best price of the parts to be used.
- C. The student will determine the necessary tools and equipment needed to perform an oil change on the vehicle in the shop. All vehicles may or may not use the same viscosity of oil as well as the same oil filter. The drain bolt size may also vary as well as filter size and location. The student will then perform an oil change procedure.
- D. The student will take and dispose of the used oil in an approved container and install a courtesy reminder on the upper left corner of the customer's windshield for the next oil change service to be performed.
- E. The student will write a brief synopsis regarding individual problems, safety concerns, and or unforeseen wait times. They will also discuss possible corrective steps or procedures to expedite the procedure.

Common Core State Standards

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

1.1 Use and inspect personal protection equipment.

1.4 Assume responsibilities under Hazard Communications regulations.

2.3 Participate as a team member in a learning environment.

6.12 Perform engine oil and filter change.

Essential Understandings

The student will need to know where to find and how to decipher vehicle identification labels to determine correct engine size. The students should understand and be able to differentiate standard and metric tools when looking at the different oil pan drain plugs. They will also need to determine the correct viscosity of oil that each manufacturer requires for their vehicle. Prior tool knowledge of a torque wrench is required due to over-tightening the drain plug leading to undesired outcomes. The student must also have an understanding of mathematical computations needed to determine the next oil change procedure. Oil disposal regulations will need to be followed as well as wearing personal protection equipment to prevent injury.

Possible Solutions/Solution Paths

There are several options for the tasks that will produce acceptable responses. Although the desired outcome for ordering the parts is to make the most amount of profit, it is a school environment and any vendor will be sufficient. The school does not allow the automotive department to run as a business and the task is to call various vendors to order parts at the lowest price. Sometimes in auto parts, the lowest price is not always the best choice. The student that orders the parts must check the engine compartment against the vin code to make sure the engine appears to be unaltered. The student that performs the oil change must determine if the oil drain plug is standard or metric and wear the appropriate personal protection. Some metric and standard wrenches/sockets will interchange but bolt identification is an objective that will be measured. The correct disposal of the oil and filter will also be part of the task as will the correct viscosity of oil being put back into the vehicle. The last part of the task is that the student will be able to determine the correct amount of miles driven before the next oil service is due.

Additional Teacher Information

The teacher will need to make sure that all the information needed to perform this task has been previously covered. Tools will have to be accessible to the students as well as phone numbers for parts vendors that offer a delivery service. The use of the wrong tools may cause damage to the drain bolt and careful observation by the instructor will need to be used to prevent such damage. Realizing that most students have never performed basic preventive maintenance procedures, the instructor will cover torque wrenches and their proper use before this task is to be performed. Due to some metric tools being a very similar in size, it can be easy for the student to make an error in picking the tools for the task. They will need to refer back to previous lessons covering fasteners to be able to identify if the drain bolt is metric or standard. The student will also have to research the engine refill cap to determine the correct viscosity of oil to be used. Before any study has been completed regarding oil and its lubrication properties, most people have the misconception that all oil is the same. This set of tasks is simple yet complex in its entirety. If the student(s) do not follow a simple order of operation, the oil change procedure can cause engine failure.