

## MECHANIC BADGE



### How to earn your badge...

Choose **one** of the four options. Then complete all tasks for your chosen option.

#### Option 1: Motor Car

1. Learn the principles of operating an engine. Make sure you understand the function of the clutch, gearbox and rear axle differential
2. Show how to check and refill the windscreen wash bottle of a car
3. Show how to change a bulb at the front and in the rear light cluster of a car
4. Show how to check the level of coolant in the radiator, 'top up' the radiator and explain the importance of anti-freeze
5. Show how to check tyre pressures and inflate a tyre correctly
6. Remove and replace a road wheel
7. Explain what to look for when checking that a tyre conforms to the legal requirement. Find out why tyres with different amounts of wear should not be mixed on the same axle
8. Show how to change a wiper blade
9. Explain the outline requirements for an MOT road test

#### Option 2: Power Boat

1. Complete **one** of these activities:
  - Discuss the principles and performance of several types of motorboat engines, other than two-stroke. Show that you know the maintenance needed for a familiar type of marine internal combustion engine, other than two-stroke
  - Assist with the maintenance, dismantle, service and reassemble an outboard engine. Show how to fit it properly to the transom of a boat. Explain how to detect minor faults in starting and running whilst afloat
2. Complete **one** of these activities:
  - As driver or mechanic member of a power boat's crew, help to prepare the boat for a voyage by checking the engine for possible minor faults, checking the fuel supply and pump and mustering the fire-fighting equipment. Show you know how to leave the engine in a proper manner and how to drain the engine in an emergency.
  - Check the engine of a motorboat in preparation for a cruise or expedition, making sure there is fuel that is stored safely, an adequate tool kit and effective fire-fighting apparatus. Accompany the expedition, either as the mechanic or assistant, and be fully or jointly responsible for the operation, care and maintenance of the engine throughout

### **Option 3: Aircraft**

1. Learn the basic principles of one these component parts and be able to point them out:
  - an aircraft piston engine
  - an aircraft gas turbine engine
2. Learn the basic principles of flight and airframe construction of a fixed wing aircraft
3. Learn and then demonstrate Aircraft Marshalling signals used by day and night
4. Show you can carry out any four of these:
  - replenishing a light aircraft fuel and oil system safely
  - rigging and de-rigging a glider
  - picketing a light aircraft
  - changing plugs on a light aircraft engine
  - inspecting aircraft main and tail or nose wheel tyres for serviceability
  - repairing a small tear in the fabric surface of a light aircraft or glider
  - checking the control system of a light aircraft or glider for correct sense of movement

### **Option 4: Motorcycle Or Scooter**

1. Learn the principles of operating an engine. Learn about the function of the clutch, gearbox, carburettor and transmission of a motorcycle
2. Check and top up the level of the engine oil
3. Explain how to adjust the tension of the final drive chain
4. Show how you change a bulb at the front and in the rear light cluster
5. Show how you would check tyre pressures and inflate a tyre correctly
6. Remove and replace a road wheel
7. Explain what to look for when checking that a tyre conforms to the legal requirement
8. Explain the outline requirements for an MOT road test