

Automotive Technology (Engineering Unit)



This is one of a series of instructional curriculum units designed specifically to operate within a lockstep environment where all students carry out assignments simultaneously within the same topic area. It can be run independently, or as an ideal addition to our ScanTEK Technology Program.

This unit makes use of hardware supplied with the ScanTEK technology module. It includes 11 lessons of on-screen curriculum materials in an html format. These can be delivered via a LAN using our ClassAct classroom management system or via the Internet using our ClassCampus management system.

The curriculum includes continuous assessment, assessment tests and a workbook journal to create a portfolio of work during the lessons. Typical activities include hands-on investigations, problem-solving, and group projects.

Each lesson contains between one and two hours of study. A lesson typically begins with a PowerPoint presentation that provides students with background information required to complete the rest of the lesson. If used with our ClassAct SRS system, questions integrated into the PowerPoint can be tracked as each student responds on their handheld keypad.

Demonstration activities are carried out by the instructor using purpose built hardware. Students carry out hands-on activities using a software simulation of the hardware. The students also have an opportunity to verify their solutions using the hardware.

Where appropriate, research activities that include the use of multimedia explorers are also incorporated.

This instructional unit uses a unique software simulation of a car and its electrical systems. This enables a whole class to carry out activities in the same topic areas at the same time.



The simulation includes a multimeter to take circuit measurements of the various electrical systems found in a modern car. They can also take the car for a drive, assessing the fuel economy using the trip computer, and determine the relationship between gears, engine speed and road speed.

A variety of faults can also be inserted into both the simulator and the Automotive Trainer to provide the students with realistic fault finding activities. These faults are inserted into the following circuits:

- Lighting
- Brake Fluid Warning
- Engine Sensors
- Supplemental Restraint System

Topic areas include:

- Electrics (Starting and Charging)
- Lighting
- Engines
- Transmission
- Fuel Systems
- Wheels and Tires
- Brakes
- Steering
- Suspension
- Supplemental Restraint Systems

Activities include:

- Observe how to start a car and recognize the meaning of warning lamps.
- Identify the different lighting systems in a car.
- Maintain the engine oil level for a range of cars.
- Drive a simulator to identify the relationship between engine speed and road speed.
- Investigate the fuel economy of a car.
- Maintain the tire pressure for various types of car.
- Identify how the brake warning system operates.
- Identify different steering and suspension systems.
- Troubleshoot faults in electrical systems.

Each lesson is designed to meet a number of performance objectives. These include academic, technical and occupational objectives. The lessons are written in such a way as to enable a student to attain the performance objectives, with continuous assessment activity questions and assessment test questions linked to these in order to provide a measure of true competency.

The performance objectives are used by the ClassAct or ClassCampus management systems to generate a comprehensive portfolio of student reports.

The items supplied with this instructional unit include:

- On-screen Student Curriculum CD
- Instructor's Guide

Additional items required:

- ST390/40 Automotive Technology
- Computer

Module Facts

Order as:
ST390/LS/10 Automotive Technology
(Engineering)

	No.	Average time
Lessons	11	1 hr 45 mins
Total		19.5 hours



ClassAct, ClassAct SRS & ClassCampus enabled



LJ Technical Systems
Web site: www.ljgroup.com

Ref No. P6648-A