

**Curriculum at a Glance**  
**Introduction to Transportation Technology**  
**Grade 10-12**

Unit Description	Content and/or Skills
Safety and Lab Procedures	<b>Synopsis:</b> In this unit students will be instructed on the safety procedures used in the lab.
Principles of Engine Operation	<b>Synopsis:</b> In this unit, students will identify the energy conversions that take place in a combustion engine. Students will disassemble at least one functional internal combustion engine and identify key parts of the engine and their purposes.
Precision measurement	<b>Synopsis:</b> Students will use precision measurement tools such a vernier caliper, micrometer, dial indicator and telescoping gauge to measure parts from the engine that they disassembled in the Principles of Engine Operation Unit. Measurements will be taken with an accuracy of .001 inches.
Carburetion and Fuel Systems	<b>Synopsis:</b> Students will be instructed on the various scientific laws as they apply to the carburetor. These laws will include Venturi's principle as well as Bernoulli's principle. Students will disassemble a working carburetor in order to identify the parts and functions of the system.
Lubrication systems	<b>Synopsis:</b> Students will identify the physical and chemical properties of various lubrication systems
Electricity and the ignition system	<b>Synopsis:</b> Students will identify and apply various electrical properties. Students will demonstrate the conversion between mechanical and electrical energy.
Engine Inspection and Assembly	<b>Synopsis:</b> Students will properly assemble all parts of the engine that they disassembled in the Principles of Engine operation unit. All fasteners will be properly tightened with a torque wrench according to specifications. Finished engines will be tested for proper function.
Alternative Energy Systems	<b>Synopsis:</b> Students will be introduced to alternative forms of transportation. Students will evaluate the impact of using various forms of transportation.

