



Goodheart-Willcox Publisher Correlation of Small Gas Engines ©2017 to Alabama Course of Study: CTE Agriculture, Food, and Natural Resources Course: Agricultural Systems, Grades 9-12	
STANDARD	CORRELATING PAGES
Tools	
1. Identify specific tools used on agricultural engines and demonstrate their use.	13-40
Four-Stroke Engines	
2. Explain how a four-stroke engine operates.	89-92, 95, 110
3. Identify parts of a four-stroke engine.	89-92, 95, 110
a. Diagnose mechanical system problems in a four-stroke engine.	235-253, 257-274
b. Repair mechanical system problems in a four-stroke engine.	235-253, 257-274
4. Explain how the ignition system works in four-stroke engines.	189-201
a. Diagnose ignition system problems in a four-stroke engine.	285-291
b. Correct ignition system problems in a four-stroke engine.	285-291
5. Explain how the fuel system works in four-stroke engines.	142-150, 159-184, 257-274, 277-283
a. Diagnose fuel system problems in a four-stroke engine.	142-150, 159-184, 257-274, 277-283
b. Correct fuel system problems in a four-stroke engine.	142-150, 159-184, 257-274, 277-283
6. Identify types of fuel and lubricants and indicate the proper uses of each one.	92, 214-216
Two-Stroke Engines	
7. Explain how a two-stroke engine operates.	93-94
8. Identify parts of a two-stroke engine.	89, 92-94

a. Diagnose mechanical system problems in a two-stroke engine.	92-95
b. Correct mechanical system problems in a two-stroke engine.	92-95
9. Explain how the ignition system works in two-stroke engines.	189-204, 285-302
a. Diagnose ignition system problems in a two-stroke engine.	189-204, 285-302
b. Correct ignition system problems in a two-stroke engine.	189-204, 285-302
10. Explain how the fuel system works in two-stroke engines.	142-150, 257-274, 277-283
a. Diagnose fuel system problems in a two-stroke engine.	142-150, 257-274, 277-283
b. Correct fuel system problems in a two-stroke engine.	142-150, 257-274, 277-283
c. Identify two-stroke engine fuel and lubricant types and indicate the proper uses of each one.	213-214
Cooling Systems	
11. Identify components of air and liquid cooling systems in engines and explain their functions.	223-230,
a. Explain the process and need for draining, replacing, and properly disposing of coolants.	244-245, 466-468
b. Diagnose and correct cooling system problems in agricultural engines	244-245
Preventive Maintenance	
12. Demonstrate preventive maintenance procedures for servicing agricultural engines.	235-246, 239-240, 234-244, 245-246,
13. Research and share information about basic types of fuel and lubricants and differentiate their chief components, characteristics, and applications as related to agricultural equipment.	139-142, 207-208, 385, 393, 398, 425, 432, 449-451



Engine Overhaul	
14. Demonstrate procedures for disassembling and cleaning agricultural engines.	142–150, 257–274, 277–283
15. Demonstrate procedures for inspecting agricultural engines for wear.	325–327, 330–334, 341–342
a. Demonstrate the procedure for measuring engine components.	139–142, 207–213
16. Assemble an agricultural engine according to manufacturer's specifications.	296–297, 299–302
Exhaust Systems	
17. Explain the operation of an exhaust system on four-stroke and two-stroke engines.	91, 93, 110, 150–152, 242–243, 385, 432
Engine Repair Estimation	
18. Create a written estimate of repairs including total cost and itemization of parts, labor, and time.	308
19. Create an invoice itemizing work performed and parts used.	308