

Bob's Mower Dilemma

Duty Area: Repairing Ignition Systems

Bob has an older mower that his dad passed down to him. He learned to cut grass and earn money with this mower, and it has continued to be reliable over the decades. Like his dad, Bob has stored it indoors when not in use and has serviced the machine regularly.

Recently, Bob took his old push mower from the shed to mow his lawn and, like always, checked the oil and gas. He had always filled the tank with fresh fuel at the end of each mowing, but double-checked that the tank was filled with fresh gas from last weekend when he finished. The oil was good to go—he put the throttle in choke mode and pulled the starter rope, but nothing happened.

After several pulls of the starter rope, he began examining the machine. He saw that the spark plug wire was connected and seemed to fit securely. He thought maybe the spark plug had gone bad, so he removed it, looked it over and confirmed the spark plug gap was set correctly. He went ahead and replaced the spark plug with a new one, just in case, and tried starting the engine again, but still nothing. He decided to take the machine to the local repair shop to figure out what was going on.

The service manager, Mike, called back a couple of days later to tell Bob that the ignition system on the mower was an older system that had stopped working and that the replacement parts for that older system would be difficult to find due to the age of the machine, but he believed he could find them from other locations, though at a premium price. Mike also told Bob that he could upgrade the ignition system from the mower's aged points and condenser system to a newer, electronic *Magnatron* ignition system, which he had in stock. This upgrade would also be expensive, but it would result in fewer ignition problems in the future. Another option Mike shared was for Bob to buy a new mower and scrap this one.

Big Question: What is the importance of identifying the ignition system of a small engine so that the repair of the engine can be completed?

Focused Questions:

- What factors should Bob consider in deciding which option to go with?
- How might a cost-benefit analysis help Bob make a decision?
- How might the sentimental value of the lawnmower affect Bob's decision?

Project-Based Assessment:

Have students use available ignition system parts to identify the parts by name and define the function/purpose of each part. New and older engine systems should be made available to best identify the parts and their functions for each ignition system. A matching exercise could be used to match the physical part to its name. Students could also carry out a matching activity to align the name of each part to its respective function or purpose.

Resources:

[How to tell if a engine has points and condenser or newer electronic ignition \(magnetron\)](#)