



# Pathfinder Honour: Requirements & Framework

## Small Engines

Part of Vocational Category of Honours

Honour Patch



Part of Technician  
Master Honour



### Snapshot of Honour

Small engines . . . they seem to be everywhere. You'll find them in lawnmowers, brush-cutters, small pumps, small generators and even model aeroplanes. The list seems endless.

In this honour you'll learn about 2-stroke and 4-stroke cycles. You'll know about the components of a 2-stroke engine, ignition systems, lubrication systems and different fuels.

On the practical side, there's the safety aspects of operating small engines and handling and storing fuel. There's troubleshooting tips and information on sparkplugs and how they can give an indication of 'engine health'. Finally, there's the satisfaction of overhauling a small engine.

### Honour History:

Original Honour: 1975 Author not known.

General Conference: Reviewed 2001

South Pacific Division : Reviewed June 2007

- Reviewed: June 2007, David McCrostie, Damien Ridley, Tasmanian Conference (Initial Draft)
- Reviewed: July 2009, John Sommerfeld, Ian Dunlop, South Queensland Conference.

## Small Engines Honour

**Honour Framework:** [Compulsory items are underlined. Others are for guidance]

#Skill Level:	Level 2
<u>Pre-requisites:</u>	Nil
Preparation Time:	Average (4-8 hrs)
Physical Requirements:	Minimal / Moderate
Equipment/Materials Required:	Small engine/s; Tools and equipment to maintain / overhaul a small engine
Location:	Indoors; Outdoors; Excursion etc
Sabbath Appropriate:	Not likely
<u>Safety &amp; Legal Requirements:</u>	Refer to and comply with Local, State and Country Requirements. All duty of care must be complied with.
Links to P/F Curriculum: (Cards, Speciality, Pursuits), or AO Modules	
Suggested Teaching / Presentation method(s):	Presentation and Discussion; Excursion; Practical application;
Recommended Assessment:	Workbook & Assessment Sheet which has a checklist of practical requirements and a short test to check knowledge of the honour.
List of Resources:	See Trainer's Notes

#Skill Level. A General Conference term which broadly describes typical physical and mental development. Level 1 (Friends, Companions); Level 2 (Explorers, Rangers); Level 3 (Voyagers, Guides)

### Honour Components:

Requirements:	See following page
Trainer's Notes:	Small Engines Honour Trainer's Notes
Student's Workbook:	Small Engines Honour Workbook
Assessment Sheet:	Small Engines Honour Assessment (On SPD Honour Website but Leader's level access is required)

## Small Engines Honour

# Requirements

Source: General Conference of SDA, 16 June 2009.

<http://gcyouthministries.org/Ministries/Pathfinders/Honors/tabid/85/agentType/View/PropertyID/263/Default.aspx>

*Note: Any Additional South Pacific Division (SPD) Requirements are in italics*

~~Strikethroughs~~ show parts not applicable to the SPD.

1. Describe the basic design and operation of the *2 stroke* (2-cycle) engine and the *4-stroke* (4-cycle) engine.
2. Name the parts of the *2-stroke* (2-cycle) engine and tell what each part does.
3. List the fuel types used in small engines and explain their use.
4. ~~Show care and safety in fuel handling and storage.~~ Know and demonstrate safety rules associated with the operation of small engines including care and safety in fuel handling and storage.
5. Describe two types of ignition systems *used in small engines*.
6. ~~List two~~ Describe acceptable cleaning ~~fluids~~ products for small engines *and engine parts*. Why is gasoline (ie petrol) *considered* an improper cleaning fluid?
7. List and tell how three basic lubrication systems operate.
8. List ~~in order~~ a general trouble-shooting procedure *for small engines*.
9. Demonstrate that you know how to test and clean spark plugs and ~~glow plugs~~ discuss how the examination of spark plugs gives an indication of the condition of a small engine.
10. Demonstrate that you can overhaul, clean, inspect, reassemble, and properly tune ~~any~~ a small engine.

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General Conference Reference No: YOU6360 Small Engines