Contest Guidelines

Each contestant must be able to identify the parts of the small engine and be able to give the purpose of each part. The engine parts will be identified on a disassembled engine, not on an assembled engine. The contestant will look at each part and give its name and its purpose to the judge orally*. Each contestant will also take a fill-in-the-blank vocabulary test while in the holding room. There will be a word bank at the top of the test page.

Engine Parts:

Air Cleaner Exhaust Valve
Armature Fuel Tank
Camshaft Flywheel
Carburetor Flywheel Key
Combustion Chamber Intake Valve
Connecting Rod Oil Filler Plug

Crankcase Piston
Crankshaft Piston Head
Cylinder Piston Ring
Cylinder Block Spark Plug

Cylinder Head

The judge will ask each contestant to identify two parts that are not on the list. This will be used as a tiebreaker only and will not count against the students regular test score.

Each contestant must work independently and without assistance*. Any outside assistance may disqualify the contestant. Contestants will be kept in a holding area until their competition begins.

*Students who communicate through an interpreter may use their interpreter during the oral testing. Students who require reading assistance may request to have the test read to them.



Air Cleaner: a device that filters the air that is mixed with the fuel in the engine.



Camshaft: the shaft containing lobes or cams which rotate to raise and lower the valves.



Combustion Chamber: the volume of the cylinder above the piston with the piston at top dead center.



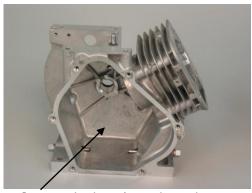
Armature: a part consisting of coils of wire around an iron core that induces an electric current when it is rotated in a magnetic field.



Carburetor: a device for automatically mixing fuel in the proper proportion with air to produce a combustible gas.



Connecting Rod: a rod that connects the piston to the crankshaft.



Crankcase: the housing where the crankshaft and many other parts of the engine operate.



Cylinder: a round hole having some depth bored to receive a piston. Sometimes referred to as a bore or barrel.



Cylinder Head: a detachable portion of an engine fastened securely to the cylinder block that contains all or part of the combustion chamber.



Crankshaft: the main shaft of the engine which, in conjunction with the connecting rod, changes the reciprocating motion of the piston into rotary motion.



Cylinder Block: the largest single part of an engine; the main mass of metal where the cylinders are bored or placed.



Exhaust Valve: a valve that permits the remains of the burned fuel to leave the combustion chamber.



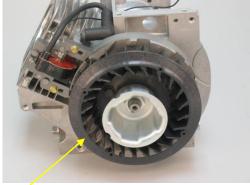
Fuel Tank: the device which contains the fuel to be burned in the engine.



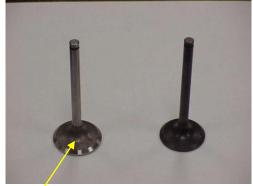
Flywheel Key: a device that holds the flywheel in place.



Oil Filler Plug: the device that closes the opening where the crankcase is filled with oil.



Flywheel: a heavy wheel that maintains the speed of the engine while it is running.



Intake Valve: a valve that permits the airfuel mixture to enter the combustion chamber and seals its exit.



Piston: a cylindrical part closed at one end that is connected to the crankshaft by the connecting rod.



Piston Head: the part of the piston above the rings.



Piston Rings: expanding rings placed in the grooves of the piston to create a seal that prevents the passage of fluid or gas past the piston.



Spark Plug: a device inserted into the combustion chamber of an engine that contains an insulated control electrode for conducting current.

ID and Purpose

Part	Identification				Definition					Total			
Fuel Tank	10	8	6	4	2	0	10	8	6	4	2	0	
Spark Plug	10	8	6	4	2	0	10	8	6	4	2	0	
Cylinder Block	10	8	6	4	2	0	10	8	6	4	2	0	
Armature	10	8	6	4	2	0	10	8	6	4	2	0	
Air Cleaner	10	8	6	4	2	0	10	8	6	4	2	0	
Crankshaft	10	8	6	4	2	0	10	8	6	4	2	0	
Intake Valve	10	8	6	4	2	0	10	8	6	4	2	0	
Piston Head	10	8	6	4	2	0	10	8	6	4	2	0	
Piston Rings	10	8	6	4	2	0	10	8	6	4	2	0	
Connecting Rod	10	8	6	4	2	0	10	8	6	4	2	0	
Piston	10	8	6	4	2	0	10	8	6	4	2	0	
Camshaft	10	8	6	4	2	0	10	8	6	4	2	0	
Cylinder Head	10	8	6	4	2	0	10	8	6	4	2	0	
Exhaust Valve	10	8	6	4	2	0	10	8	6	4	2	0	
Flywheel	10	8	6	4	2	0	10	8	6	4	2	0	
Flywheel Key	10	8	6	4	2	0	10	8	6	4	2	0	
Crankcase	10	8	6	4	2	0	10	8	6	4	2	0	
Oil Filler Plug	10	8	6	4	2	0	10	8	6	4	2	0	
Carburetor	10	8	6	4	2	0	10	8	6	4	2	0	
Cylinder	10	8	6	4	2	0	10	8	6	4	2	0	
Combustion Chamber	10	8	6	4	2	0	10	8	6	4	2	0	
Total Score (420 points possible)													

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Score Sheet

Vocabulary Score (105 possible)	
Verbal Score (420 possible)	
Total Score (525 possible)	

1. A rod that connects the piston to the crankshaft.

a. Armature

b. Connecting Rod

	c. Flywheel Key d. Piston
2.	A round hole bored at a certain depth to receive a piston (sometimes called a bore or barrel).
	a. Carburetorb. Crankcasec. Cylinderd. Piston
3.	A valve that permits the remains of the burned fuel to leave the combustion chamber.
	a. Camshaftb. Exhaust Valvec. Intake Valved. Piston
4.	The device which contains the fuel to be burned in the engine.
	a. Air Cleanerb. Crankcasec. Fuel Tankd. Piston Head
5.	A cylindrical part closed at one end that is connected to the crankshaft by the connecting rod.
	a. Armatureb. Camshaftc. Flywheeld. Piston
6.	A device inserted into the combustion chamber of an engine that contains an insulated control electrode for conducting current.
	a. Armatureb. Cylinderc. Flywheeld. Spark Plug

Combustion Chamber	
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Fuel Tank	
Carburetor Crankcase	
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Crankshaft Flywheel Key	
The device that closes the opening where the crankcase is filled with oil.	
Crankshaft Oil Filler Plug	
Flywheel Piston Rings	
A device that holds the flywheel in place.	
Camshaft Flywheel Key	
a.b. c.d. Tree a.b. c.d. Efficient a.b. c.d. A. a.b. c.d.	c. Cylinder Head d. Fuel Tank A device for automatically mixing fuel in the proper proportion with air to produce a combustible gas. a. Air Cleaner b. Carburetor c. Crankcase d. Oil Filler Plug The main shaft of the engine which, in conjunction with the connecting rod, changes the reciprocating motion of the piston into rotary motion. a. Camshaft b. Crankshaft c. Flywheel Key d. Piston Ring The device that closes the opening where the crankcase is filled with oil. a. Connecting Rod b. Crankshaft c. Oil Filler Plug d. Spark Plug Expanding rings placed in the grooves of the piston to create a seal that prevents the passage of fluid or gas past the piston. a. Carburetor b. Flywheel c. Piston Rings d. Spark Plug A device that holds the flywheel in place. a. Armature b. Camshaft c. Flywheel Key

7. A device that filters the air that is mixed with the fuel in the engine.

a. Air Cleaner

14. The shaft containing lobes or cams which rotate to raise and lower the valves.
a. Armatureb. Camshaftc. Connecting Rodd. Crankshaft
15. The part of the piston above the rings.
a. Carburetorb. Combustion Chamberc. Cylinder Blockd. Piston Head
16. The volume of the cylinder above the piston with the piston at top dead center.
a. Carburetorb. Combustion Chamberc. Cylinder Blockd. Piston
17. A detachable portion of an engine fastened securely to the cylinder block that contains all or part of the combustion chamber.
a. Carburetorb. Combustion Chamberc. Cylinder Headd. Fuel Tank
18. A valve that permits the air-fuel mixture to enter the combustion chamber and seals its exit.
a. Armatureb. Exhaust Valvec. Intake Valved. Spark Plug

13. The housing where the crankshaft and many other parts of the engine operate.

a. Carburetor

c. Crankcased. Cylinder Block

b. Combustion Chamber

- 19. A part consisting of coils of wire around an iron core that induces an electric current when it is rotated in a magnetic field.
 - a. Armature
 - b. Cylinder
 - c. Flywheel
 - d. Piston
- 20. A heavy wheel that maintains the speed of the engine while it is running.
 - a. Camshaft
 - b. Flywheel
 - c. Piston
 - d. Spark Plug
- 21. The largest single part of an engine. The main mass of metal where the cylinders are bored or placed.
 - a. Combustion Chamber
 - b. Crankcase
 - c. Cylinder Block
 - d. Fuel Tank

1. A rod that connects the piston to the crankshaft.

a. Armature

d. Spark Plug

	b. Connecting Rodc. Flywheel Keyd. Piston
2.	A round hole bored at a certain depth to receive a piston (sometimes called a bore or barrel).
	a. Carburetorb. Crankcasec. Cylinderd. Piston
3.	A valve that permits the remains of the burned fuel to leave the combustion chamber.
	 a. Camshaft b. Exhaust Valve c. Intake Valve d. Piston
4.	The device which contains the fuel to be burned in the engine.
	 a. Air Cleaner b. Crankcase c. Fuel Tank d. Piston Head
5.	A cylindrical part closed at one end that is connected to the crankshaft by the connecting rod.
	a. Armatureb. Camshaftc. Flywheeld. Piston
6.	A device inserted into the combustion chamber of an engine that contains an insulated control electrode for conducting current.
	a. Armatureb. Cylinderc. Flywheel

b. Combustion Chamber c. Cylinder Head d. Fuel Tank 8. A device for automatically mixing fuel in the proper proportion with air to produce a combustible gas. a. Air Cleaner b. Carburetor c. Crankcase d. Oil Filler Plug 9. The main shaft of the engine which, in conjunction with the connecting rod, changes the reciprocating motion of the piston into rotary motion. a. Camshaft b. Crankshaft c. Flywheel Key d. Piston Ring 10. The device that closes the opening where the crankcase is filled with oil. a. Connecting Rod b. Crankshaft c. Oil Filler Plug d. Spark Plug 11. Expanding rings placed in the grooves of the piston to create a seal that prevents the passage of fluid or gas past the piston. a. Carburetor b. Flywheel c. Piston Rings d. Spark Plug 12. A device that holds the flywheel in place. a. Armature b. Camshaft c. Flywheel Key d. Piston Ring

7. A device that filters the air that is mixed with the fuel in the engine.

a. Air Cleaner

13. The housing where the crankshaft and many other parts of the engine operate. a. Carburetor b. Combustion Chamber c. Crankcase d. Cylinder Block 14. The shaft containing lobes or cams which rotate to raise and lower the valves. a. Armature b. Camshaft c. Connecting Rod d. Crankshaft 15. The part of the piston above the rings. a. Carburetor b. Combustion Chamber c. Cylinder Block d. Piston Head 16. The volume of the cylinder above the piston with the piston at top dead center. a. Carburetor b. Combustion Chamber c. Cylinder Block d. Piston 17. A detachable portion of an engine fastened securely to the cylinder block that contains all or part of the combustion chamber.

18. A valve that permits the air-fuel mixture to enter the combustion chamber and seals its exit.

a. Carburetor

a. Armatureb. Exhaust Valvec. Intake Valved. Spark Plug

c. Cylinder Headd. Fuel Tank

b. Combustion Chamber

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 - a. Combustion Chamber
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 - c. Cylinder Block
 - d. Fuel Tank