1

The Internal Combustion Engine

Get ready!

- 1 Before you read the passage, talk about these questions.
 - Which parts of an internal combustion engine are located in the engine block?
 - What kinds of fuels do internal combustion engines use?



cylinders



piston rings



The **Internal**Combustion Engine

Internal combustion engines ignite **fuel** to create useful mechanical energy. Most engines have a tank that holds fuel. Fuel pumps from the tank into chambers called **cylinders**. An engine's cylinders are located between its **head** and its **engine block**. **Valves** control the flow of fuel into and out of the cylinders. Each cylinder contains a **piston** which can move up and down the cylinder. **Piston rings** form seals between the pistons and the walls of the cylinders.

When fuel enters a cylinder, the piston rises. This compresses the fuel at the top of the cylinder. When this happens, a **spark plug** ignites the fuel. The explosion makes the piston shoot down the cylinder. This, in turn, pushes a **connecting rod**. The connecting rod then turns the **crankshaft** in the **crankcase**. The turn of the crankshaft outputs mechanical energy. A **sump** with lubricating oil keeps the engine parts running smoothly.

Reading

- Read the encyclopedia entry. Then, mark the following statements as true (T) or false (F).
 - 1 __ The cylinders are set between the engine block and the crankcase.
 - **2** __ Upward movement of the piston compresses fuel in the cylinder.
 - **3** __ Connecting rods connect the pistons to the crankshaft.



crankshaft

piston

Vocabulary

3 Match the words or phrases (1-8) with the definitions (A-H).

1 __ fuel

5 __ spark plug

2 __ sump3 __ valve

6 __ piston ring7 __ engine block

4 __ cylinder

8 __ connecting rod

- **A** a round hole in the engine block that contains a piston
- B a reservoir that holds oil in the engine
- **C** a device that ignites fuel using electricity
- **D** the main part of an engine to which other parts are attached
- **E** a substance that produces heat or power when burned
- **F** a rod that links a piston to a crankshaft
- G a ring that creates a seal around a piston
- H a device that opens and closes to control the flow of fluid

4 Read the sentence pairs. Choose which word best fits each blank.				
1	piston / crankshaft A The is located near the bottom of the engine. B The compresses fuel in the engine's cylinders	Mechanic: Manager:	How could something like that happen? I would guess that someone just forgot to put oil in the engine. 2 is pretty dry. Ah, then the lack of lubrication made the 3 Precisely. It should be easy to fix. I just 4	
2	engine's cylinders. head / crankcase A The covers the top of the engine.		the crankshaft from the crankcase. And then clean them both, lubricate them, and put them back together. Are you going to need to 5?	
6 (B The is where an engine's sump is located. Listen and read the	Mechanic: Manager:	No, I basically have everything that I need already. Oh. So how long do you think the repairs will take? 6 or two. Two and a half hours at most.	
е	ncyclopedia entry again. What oes a spark plug do?	Speakii	ng	

Listening

- 6 Section Listen to a conversation between a mechanic and a dealership manager. Choose the correct answers.
 - 1 What are the speakers mainly talking about?
 - A where an engine's sump is located
 - B what is wrong with a car's engine
 - C how internal combustion engines work
 - D why some engines have a crankshaft
 - 2 What is the woman going to remove from the engine?
 - A the crankcase
 - B the engine block
 - C the crankshaft
 - **D** the sump

With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

I think I know ... / How long ...? / Probably ... at most.

Student A: You are a mechanic. Talk to Student B about:

- what is wrong with a car's engine
- how to repair the engine
- how long the repairs will take

Student B: You are a car dealership manager. Talk to Student A about repairs to an engine.

Writing

9 Use the encyclopedia entry and the conversation from Task 8 to fill out the engineer's report.

Engine Diagnostic Report

Problem:	
Cause of problem:	
Repairs:	
Estimated time to repair:	

4 Advertising

Get ready!

- 1 Before you read the passage, talk about these questions.
 - 1 What are the various ways a car dealership can advertise a sale?

What can a dealership use to attract people to a sale?





Hello everyone,

I just wanted to let you all know about our upcoming advertising efforts. We are currently developing an ad **campaign** featuring some cool new **commercials** for various **media**. They should appear during prime time **television** and **radio broadcasts**. We are also developing a matching series of advertisements for local magazines. We hope to capture quite a lot of **attention** with these ads.

In addition to the advertisements, we will be running a number of **promotions**. We will have at least two **sales** per month from now until October. These are going to be big events, with a lot of **on-site** entertainment. These will have big **contests** and cool **give-aways**. People will be able to win a brand new car. We will even have **balloons** and an **inflatable** bouncy castle for the kids. We will send **flyers** advertising our sales to previous customers. We will also send them out in newspapers.

Let me know if you have any questions or suggestions.

Thanks,

Ichiro Sena, Branch Manager

inflatable



3 Match the words or phrases (1-8) with the definitions (A-H).

1 __ media5 __ magazine2 __ on-site6 __ give-away3 __ balloon7 __ commercial4 __ inflatable8 __ advertisement

- A every means of mass communication to be considered as a group
- B capable of being filled with air
- **C** a free product that companies give out to make people buy products
- **D** a promotion designed to sell a product to people who see it
- **E** a thin, regularly published book with ads and articles
- **F** occurring or located at a given place
- **G** a rubber bag that is filled with air and used as a toy or decoration
- **H** an ad that is broadcast on radio or television



- 2 Read the email. Then, mark the following statements as true (T) or false (F).
 - **1** __ The dealership will broadcast commercials on television and radio.
 - 2 __ The dealership is going to have one sale each month until October.
 - **3** __ The dealership plans to hand out flyers to people on the street.

ı	The man cay the commercial while he was watching
	The main can are commencial mine no nac matering
2	The sales team decided to launch the new adat the end of April.
3	A customer won a new car as a prize in a(n)
4	The commercial attracted a lot of to the dealership.
5	We cut the prices of our cars for a(n) over the holiday.
6	Hopefully, we will gain a lot of attention with this new

6 Listen and read the email again. What will the dealership's sales have for kids?

Listening

- 6 Solution Listen to a conversation between an owner and a manager of a car dealership. Choose the correct answers.
 - 1 What are the speakers mainly talking about?
 - A the development of a television commercial
 - B how their advertising efforts are working
 - C why some radio commercials are effective
 - D new ways of advertising their dealership
 - 2 Which of the following does the man want to decrease the number of?
 - A contests
- **B** commercials
- C sales
- **D** flyers

7 See Listen again and complete the conversation.

Manager:	Whenever we make a 1, we ask our customers where they heard about us.
Owner:	Oh, that's clever. And what do they say?
Manager:	Well, most of them hear or see our television and 2
Owner:	Which parts of our campaign are not doing well?
Manager:	3 – those attract almost no customers.
Owner:	We should cut back on those. I wonder if having more sales would get us 4
Manager:	Maybe. I think we should give a car or two away 5
Owner:	That's a good idea, especially if we hand out some 6

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

We should ...

That's a good idea.

That sounds like a plan.

Student A: You are an owner of a car dealership. Talk to Student B about:

- the dealership's advertising efforts
- how well different advertisements are doing
- ways to attract more people to the dealership

Student B: You are a manager of a car dealership. Talk to Student A about advertising.

Writing

Use the email and the conversation from Task 8 to fill out the email to an ad agency.

o: cooper@easternvilleads.com
From:g_hammond@supercarseasternville.com
Subject: New Ads
Dear Mr. Cooper, Based on some responses from customers, we would like to change our advertising campaign a bit.
advertising campaign
if you have any questions.
Let me know if you have any questions.
George Hammond, Manager, Supercars of Easternville

Glossary

internal benchmark [N-COUNT-U3] An **internal benchmark** is a standard set by comparing practices in similar parts of the same organization.

inventory [N-UNCOUNT-U2] **Inventory** is the supply of materials used to manufacture products, as well as completed products that are in storage before being shipped to buyers.

invoice price [N-COUNT-U7] An **invoice price** is the price the dealer pays for a car.

just-in-time production [N-UNCOUNT-U2] **Just-in-time production** is a production technique that involves reducing waste by producing only what is necessary at the moment it is necessary. Signals are used to indicate when materials, labor or equipment is needed.

keys [N-COUNT-U11] Keys are small pieces of metal used to open the lock of a vehicle and start an engine.

late fee [N-COUNT-U14] A late fee is a fee caused by missing the deadline on a payment.

lead [N-UNCOUNT-U9] A lead is a person who is a potential client or customer.

lean manufacturing [N-UNCOUNT-U2] **Lean manufacturing** is a manufacturing process that focuses on eliminating waste in the production process and adding value to a product for consumers.

liabilities [N-COUNT-U8] Liabilities are a business's debts and expenses.

limited [ADJ-U2] If something is limited, it is not as large as it could possibly be.

loading cost [N-COUNT-U6] A loading cost is a cost associated with loading the cars onto the carrier.

Ioan [N-COUNT-U13] A loan is a sum of money borrowed and expected to be paid back with interest.

loss [N-COUNT-U12] A **loss** is a negative net income.

manipulator [N-COUNT-U4] The manipulator is the arm of a robot.

manufacturing [N-UNCOUNT-U2] Manufacturing is the process of assembling products for sale.

mark up [N-COUNT-U7] A mark up is the amount the dealer increases the price above invoice price to make a profit.

market adjustment [N-COUNT-U7] A market adjustment is a change in price based on the market in which the car is sold.

measure [V-T-U3] To measure something is to estimate or judge it based on certain criteria.

monthly [ADV-U14] If a payment is paid monthly, then it is paid once every month.

MSRP [N-COUNT-U7] An **MSRP** is the manufacturer's suggested retail price.

needs [N-UNCOUNT-U9] The needs of a customer are his or her desired outcomes from an encounter.

net profit [N-UNCOUNT-U8] **Net profit** is the measure of business's profitability, or the difference between revenue and total expenses.

networking [N-UNCOUNT-U9] **Networking** is the habit of using one's colleagues and professional associations to enhance professional success.

non-negotiable [ADJ-U12] If something is non-negotiable, it cannot be changed or contested.

offer [V-T-U12] To offer something is to present it.