

ENGLISH FOR SPECIFIC PURPOSES

ENGLISH FOR ELECTRICAL ENGINEERING

Jarum ● Riski Lestiono  
Nisa Aulia Azam ● Putri Martya Candra Pratiwi  
Yerita Nurliana ● Zuhria Husna

Editor:  
Hartono

## English for Electrical Engineering

---

vi, 453 hlm, Tab, 16 cm

---

Katalog Dalam Terbitan (KDT)

---

Copyright©Language Center - UMM PRESS, 2014

Jarum, Riski Lestiono, Nisa Aulia Azam, Putri Martya Candra Pratiwi,  
Yerita Nurliana, Zuhria Husna,

---

*Editor:* Hartono

---

Published by UMM Press

Penerbitan Universitas Muhammadiyah Malang

Jl. Raya Tlogomas No. 246 Malang 65144

Telepon (0341) 464318 Psw. 140, (0341) 7059981

Fax. (0341) 460435

E-mail: [ummpress@gmail.com](mailto:ummpress@gmail.com)

<http://ummpress.umm.ac.id>

---

First Published, September 2014

---

ISBN : 978-979-796-303-3

---

Setting Layouter : Andi F.

Cover : Ridlo S.

---

All right reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of Language Center- UMM Press

## PREFACE

English for Electrical Engineering is written to fulfill students' need to learn English as a preparatory for job communication. This book is designed to provide an opportunity to develop students' English skills more communicatively and meaningfully.

It consists of twenty eight units. Each unit presents reading, writing, and speaking section. Reading section consists of pre-reading, reading comprehension and vocabulary exercises related to the topic of the text. In writing section, some structures and sentence patterns are completed with guided writing exercises. Meanwhile, in speaking section students are provided with model and examples followed by practical activities which are presented in various ways. In addition, students are also equipped with listening comprehension skill which is presented in a separate textbook. The materials have been arranged and graded in accordance with their language levels.

Above all, to improve the quality of this textbook, criticism and suggestions for better editions are highly appreciated.



# TABLE OF CONTENTS

UNIT 1	NICOLA TESLA .....	3
	Writing an Autobiography .....	7
	Self-Introduction .....	12
UNIT 2	ELECTRICITY- LIGHTING .....	19
	Describing Famous Figure .....	24
	Describing People .....	27
UNIT 3	HOW CIRCUITS WORKS .....	33
	Activities in Progress .....	39
	What are You Doing? .....	41
UNIT 4	TELEPORTATION IN ELECTRONIC CIRCUIT .....	45
	Writing Daily Activities .....	51
	Telling Daily Activities .....	55
UNIT 5	ELECTRIC FIELDS AND MAGNETIC FIELDS .....	61
	Writing a Past Experience .....	65
	Telling Unforgettable Moments .....	71
UNIT 6	ELECTRON THEORY AND ATOMS .....	75
	Writing a Personal Agenda .....	80
	Telling a Plan .....	85
UNIT 7	ELECTRICITY AND MAGNETISM .....	91
	Describing a Place .....	97
	Asking and Giving Direction .....	99
UNIT 8	WHAT A SEMICONDUCTOR IS .....	105
	Writing a Personal Letter .....	110
	Making Polite Request .....	113

UNIT 9	ELECTRICAL POWER .....	119
	Writing Tips .....	125
	Giving Tips .....	128
UNIT 10	BIOMASS ENERGY IN INDONESIA .....	133
	Writing a Procedure Text .....	139
	Telling Procedure .....	146
UNIT 11	WHAT'S THE BEST BATTERY? .....	151
	Writing Invitations .....	156
	Inviting People .....	160
UNIT12	NEW POMEGRANATE-LIKE MATERIAL BOOSTS LITHIUM-ION BATTERY PERFORMANCE .....	167
	Writing a Public Notice .....	174
	Giving an Announcement .....	178
UNIT 13	WASTE TO WATTS: HOW TODAY'S GARBAGE CAN BE TOMORROW'S ELECTRICITY .....	183
	Writing an Email .....	187
	Asking and Giving Information .....	190
UNIT 14	EARLY MICROELECTRONICS .....	197
	Writing a Company Profile .....	204
	Presenting a Company Profile .....	211
UNIT 15	ELECTROMAGNETISM .....	219
	Describing a Product or Service .....	225
	Presenting a Product or Service .....	229
UNIT 16	BIOELECTROMAGNETISM .....	233
	Writing a Poster .....	239
	Poster Presentation .....	242

UNIT 17 A NEW BIOFUEL DERIVED FROM ALGAE .....	247
Making a Comparative Paragraph .....	252
Comparing Things .....	258
UNIT 18 RENEWABLE ENERGY - ENVIRONMENTALLY- FRIENDLY AND LOW COST ENERGY FROM INEXHAUSTIBLE SOURCES .....	263
Writing a Complaint Letter .....	268
How to Complain Politely .....	272
UNIT 19 TYPES OF RENEWABLE ENERGY .....	277
Writing an Order Letter .....	282
Making an Appointment .....	284
UNIT 20 WHAT IS HYDROELECTRIC POWER? .....	291
Summarizing an Article .....	297
Presenting an Interesting Article .....	305
UNIT 21 WIND POWER.....	306
Writing an Interview .....	313
Presenting an Interview Result .....	315
UNIT 22 SOLAR PANELS (PV) .....	327
Writing an Argumentative Paragraph.....	333
Expressing an Opinion .....	337
UNIT 23 NUCLEAR POWER .....	345
Writing Cause and Effect Paragraphs .....	350
Expressing Cause and Effect .....	352
UNIT 24 GEOTHERMAL ENERGY PROVIDES HEALTH, ENVIRONMENTAL BENEFITS .....	357
Writing a Proposal Letter .....	362
Presenting a Proposal .....	367

UNIT 25 HYDROPOWER ENERGY .....	375
Writing Pro and Con Texts .....	380
Performing Classroom Mini Debate .....	386
UNIT 26 ELECTROMEDICINE DEVELOPMENT .....	393
Writing a Speech Script .....	398
Delivering Speech .....	402
UNIT 27 INTRODUCTION TO ROBOTS .....	409
Writing Curriculum Vitae .....	414
Presenting a Personal Impression .....	418
UNIT 28 WHAT JOBS CAN YOU DO WITH AN ELECTRICAL ENGINEERING DEGREE? .....	425
Writing an Application Letter .....	433
Performing Job Interview .....	437
BIBLIOGRAPHY .....	443



---

## Objectives

After completing this unit, students are expected to master three language skills:

**1. Reading**

- Students are able to comprehend general ideas of the text.
- Students are able to find explicit information from the text.
- Students are able to find implicit information from the text.
- Students are able to find the meaning of keyword related to the text.

**2. Writing**

- Students are able to write an autobiography.

**3. Speaking**

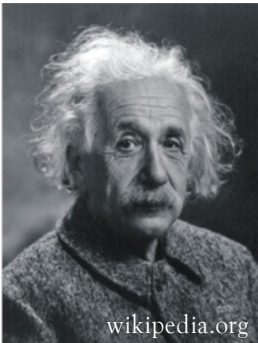
- Students are able to make a self-introduction.
-



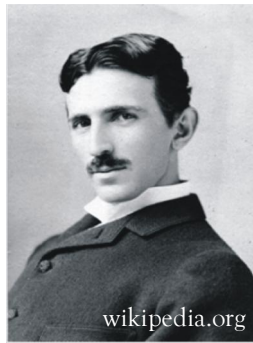
# Unit 1

Before reading the text, have a look at the pictures below to answer the questions that follow. Browse the necessary information.

Albert Einstein



Nikola Tesla



Isaac Newton



1. Of three scientists in the above pictures, who do you think is the youngest?
2. Who is your most favorite scientist among the three? Why do you think he is so inspiring?
3. Mention one of the most phenomenal inventions made by the each of three scientists.

---

Let's read.

## NIKOLA TESLA

Nikola Tesla was one of the greatest electrical **inventors** who has ever lived. His technological achievements transformed America from a nation of isolated communities to a country connected by power **grids** where information was available upon demand. In the 20th century, it was Tesla's technology that united the United States and eventually the world.

Tesla's life was like a movie. It was the story of a brilliant and charismatic immigrant who rose to the height of celebrity with his amazing talent, and then was tragically undone by his own visionary ideas. The **cast** of characters includes: Thomas Edison, J. Pierpont Morgan, Guglielmo Marconi, George Westinghouse, Mark Twain and many more.

A Serb by origin, his early discovery of the **alternating** current motor led him to America to seek a venue for his discovery. Here he developed the polyphase AC system of power transmission, which drove every home and industry in the country. He invented the Tesla coil to create high-frequency electricity, and with it, neon and florescent lighting, radio transmission, remote control, and hundreds of other **devices** are now an essential part of our everyday lives.

Tesla was also a visionary thinker, and in his papers and interviews he anticipated the development of radio and television broadcasting, robotics, computers, faxes, and even the Strategic Defense Initiative.

Tesla's great dream was to find the means to broadcast electrical power without wires in between. But like many geniuses, he was not a practical man. He gave his life to realize his visions, while others made millions with his inventions. In the end, he **wound up a penniless** and forgotten man.

In his later years, Tesla was regarded as an eccentric scientist. Ridiculed by his **contemporaries**, his ideas frequently appeared in works of science fiction. He was the inspiration for the mad scientist in Max Fleischer's Superman cartoons.

At the height of World War Two, Tesla claimed that he invented a powerful "death beam" that could destroy attacking aircraft. He proposed a system of beam weapons to protect the borders of the United States and other European nations. When he died, most of Tesla's technical papers mysteriously disappeared, and many have not been found.

Tesla was so far ahead of his time that many of his ideas are only appearing today. His **legacy** can be seen in everything from microwave ovens to MX missiles. But more than this, Tesla's life inspires us to believe that anything we can imagine can be accomplished - especially with electricity.

Anonymous. 2013. [www.pbs.org](http://www.pbs.org)

## Vocabulary list in context:

alternating (adj)	: occurring in or forming a repeated series
cast (n)	: figure
contemporary (n)	: something (e.g. ideas in style, design, fashion etc) that occurs in the same period of time
device (n)	: tool or piece of equipment that has been made for some special purposes
grid (n)	: network of electrical wires and equipment that supplies electricity to a large area
inventor (n)	: one who produces something useful for the first time
legacy (n)	: something transmitted by or received from an ancestor or predecessor or from the past
penniless (adj)	: having no money, very poor
venue (n)	: place where events of a specific type are held
wind up (v)	: to come to a conclusion

## Task 1

Find seven electronic devices mentioned in the following puzzle by circling the words. Some clues are provided below.

A	B	C	D	E	O	I	J	K	L	M	R	I
B	C	A	T	D	T	F	G	H	I	F	A	X
C	A	C	B	I	E	E	N	H	A	N	D	L
D	D	O	M	D	L	D	E	R	D	D	I	R
R	E	M	O	T	E	C	O	N	T	R	O	L
B	I	P	D	I	V	S	N	L	L	H	N	T
A	O	U	H	Y	I	H	M	I	A	T	S	T
B	M	T	E	L	E	V	I	S	I	O	N	V
C	A	E	J	D	I	N	G	I	N	M	W	W
D	S	R	D	E	C	G	H	I	J	A	X	X
E	S	C	T	F	K	K	L	M	N	T	Y	Y



www.shutterstock.com 133432184

## Vertical

1. an electronic device that can store and work with a large amount of information

2. a discharge lamp in which the gas contains a large proportion of a particular gas
3. a device that is used to receive signals and transmit audio

### Horizontal

4. a device used to send and receive printed materials (such as documents and drawings) and photographs using telephone lines
5. a small device that is used to operate electronic equipment from a distance by using electronic signals
6. an electronic device used to send images and sounds by a wire or through space

### Task 2

**Tick ( ✓ ) T (True) if the statement reflects the information in the text, F (False) if it contradicts the information in the text, and NG (Not Given) if it is not found in the text. If it is False, write the correct statement.**

Statements	T	F	NG	Corrections for False Statements
1. Nikola Tesla was the only one electronic inventor who had contributed great impacts to the world.				
2. Tesla's technology segregated some States in the USA and the world.				
3. Nikola Tesla did not accomplish all his visionary ideas.				
4. Nikola Tesla was more influential than Thomas A. Edison.				
5. Nikola Tesla was a European.				
6. Tesla's scientific research conveyed the development of electronic devices.				
7. Nikola Tesla was an inventor who tended more focus on theoretical frameworks.				

### Task 3

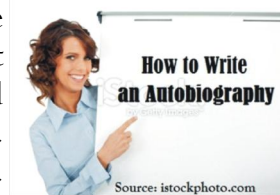
Complete the following table by finding cause or effect statements from the text.


Cause	Effect
1. Nikola Tesla developed most of his electrical inventions in America.	1. America transformed from a nation of isolated communities to a country connected by power grids where information went due to the advancement of technology.
2. Nikola Tesla dedicated his lifetime to realize his visions, while other scientists earned millions from their inventions.	2. .... ..... ..... ...
3. ....	3. Nikola Tesla was well-known as a bizarre scientist.
4. Nikola Tesla was aware of the culmination point of World War II.	4. .... ..... .....

Let's write.


## WRITING AN AUTOBIOGRAPHY

An autobiography is a written account of the life of a person or biography written by that person. There are many famous figures that had written and published their own autobiographies. Every person can write his/her own autobiography. In case you want to write your own autobiography, you need to pay attention to some points. A short autobiography should provide some information regarding personal background and accomplishment. By writing your own short autobiography, you can help someone else know about you in brief. In order to write a well-organized short autobiography, you have to pay attention to some expressions commonly used below:



<b>Name</b> My name is .... I am .... My nickname is ....		<b>Place / Origin</b> I come from ... I live in ... I settle in ...
<b>Occupation</b> I work as ... I graduated from ... I major in ...		<b>Hobby / Interest</b> My hobby is ... I am interested in ... I love doing .....

Have a closer look at the following example of a short autobiography.

Name	: William Henry "Bill" Gates III	
Place and Date of Birth	: Seattle, Washington, October 28th, 1955	
Nationality	: American	
Occupation(s)	: businessman, philanthropist, investor, computer programmer, and inventor	
Hobby/Interest	: software and computer programming	
Motto	: It is fine to celebrate a success, but it is more important to heed the lessons of failure.	
Vision and Mission	: Seeing a computer on every desk in every home	

The information above can be elaborated as a short autobiography as follows:

## BILL GATES

William Henry Gates III was born in Seattle, Washington on October 28, 1955. He is well-known as Bill Gates. He has become one of the most famous and richest American men in the world.

Bill Gates is the technology advisor of Microsoft now. Furthermore, he is known as a businessman, philanthropist, investor, computer



programmer, and inventor. He spends his lifetime doing what he loves, that is developing software. Due to his breakthrough in technology world, Bill Gates' inventions are unbeatable until now.

Behind his success, there are some life principles that have encouraged him to change the world through his invention in technology. He conveys a motto about his success to a lot of people. He states that it is fine to celebrate success, but it is more important to heed the lessons of failure. He also has a mission that someday he will see a computer on every desk and in every home.

#### Task 4

Identify some points regarding biodata, education backgrounds, working experiences, and future outlook presented in the following autobiography.



### ZUHRIA'S AUTOBIOGRAPHY

My name is Zuhria Husna. I was born in Malang on April 16, 1988. I accomplished my bachelor's degree from Electrical Engineering Department at University of Muhammadiyah Malang four years ago. I am now working as a junior researcher in Indonesian Institute of Sciences (LIPI).

Due to my excellent achievements in scientific research, I have been granted a scholarship abroad to enhance my scientific insights. I am now pursuing my master's degree in Electrical Engineering Department at Kyushu University, Japan. I am specializing myself in bioelectromagnetism. It is not easy to study in a foreign country because I encounter cultural shocks and a different educational system. However, I have a life principle, which is *"if there is no pain, there will be no gain."*

My hobbies are blogging and travelling. During my stay in Japan, I can do both hobbies at the same time. I love exploring Japan to gain Japanese historical and cultural insights so that I can write my adventure stories in my personal blog.

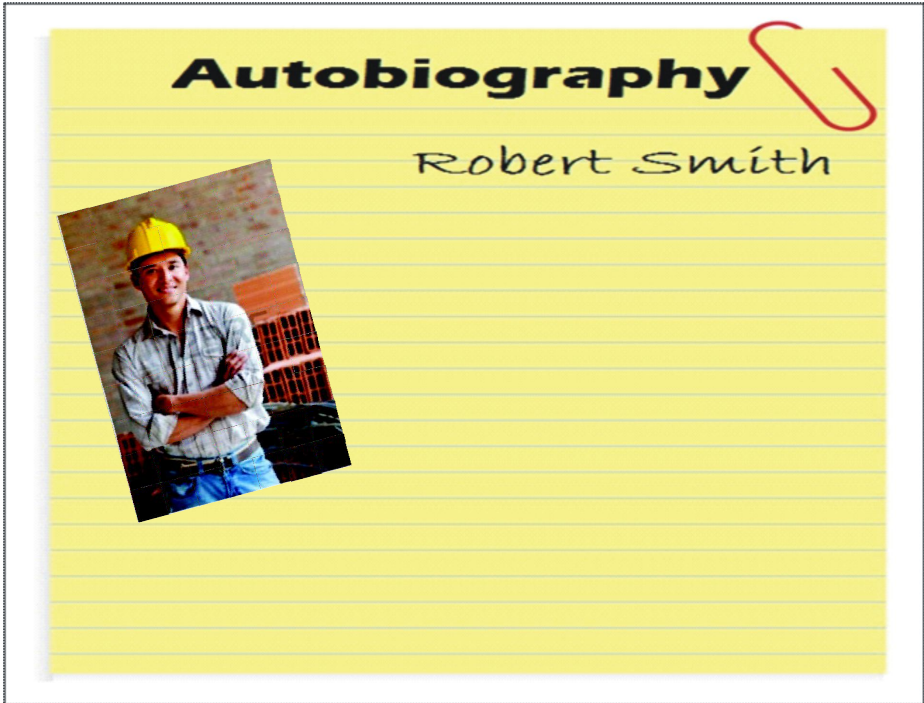
After accomplishing my master's degree in Japan, I want to return to Indonesia in order to share my knowledge to my friends and colleagues. Furthermore, I want to introduce an innovative idea about bioelectromagnetism in medical fields in Indonesia in both practical and theoretical frameworks so that I can help many patients who need to be cured by using technology.

Name	:	_____
Place and Date of Birth	:	_____
Age	:	_____
Hobby	:	_____
Current City	:	_____
Occupation	:	_____
University	:	_____
Major	:	_____
Specialization	:	_____
Motto	:	_____
Vision and Mission	:	_____

## Write 5

**Write an autobiography based on the following information.**

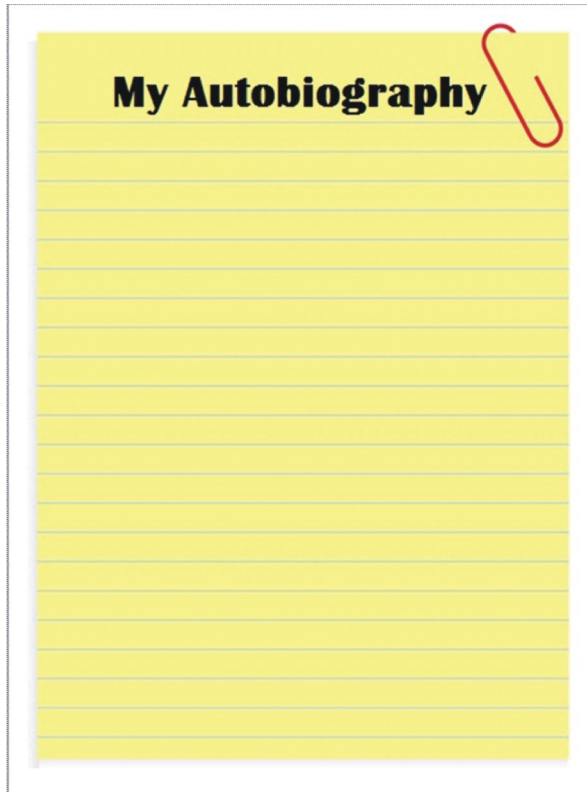
Name	:	Robert Smith
Place and Date of Birth	:	Boston, April 16, 1987
Current City	:	New York
Hobby	:	Reading, travelling, and swimming
University	:	Massachusetts Institute of Technology (MIT)
Major	:	Electrical Engineering
Achievement(s)	:	(1) The best graduate in Electrical Engineer Department at Massachusetts Institute of Technology (MIT) (2) Electrical Engineer of the Year at ElectroCorps
Occupation	:	Junior electrical engineer in ElectroCorps
Motto	:	Excellence is my habit and perfection is my goal



### Task 6

Complete the form below with your personal information and then write your own autobiography.

Name	:	_____
Place and Date of Birth	:	_____
Address	:	_____
Hobby	:	_____
University	:	_____
Major	:	_____
Motto	:	_____
Vision and Mission	:	_____



Let's Speak.

## SELF-INTRODUCTION

Self-introduction is needed when you want to cope with new environment where you do not get along with new people. By introducing yourself to other people, it means that you try to get along with new friends by mingling with them socially. Here are some expressions used to introduce yourself:

*Hello!*

My name is Rizka.  
I come from Jember.  
I live in Malang now.  
I study electrical  
engineering.



*Hi!*

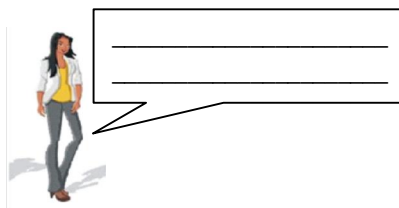
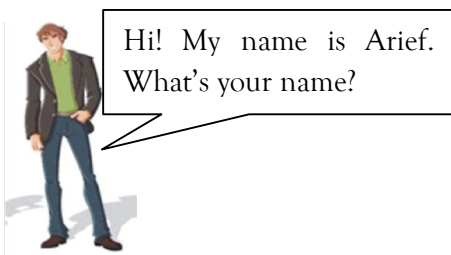
My name is Fasta.  
My hobby is reading.  
My future dream is  
to be a professional  
electrical engineer.



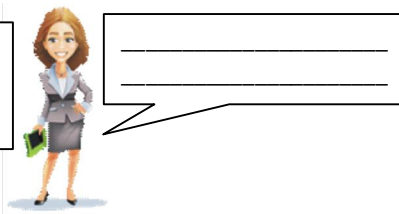
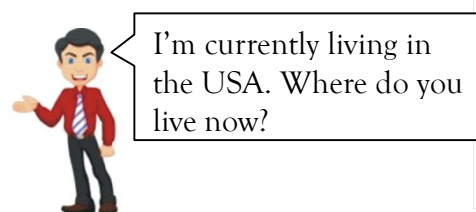
## Task 7

Respond to these following questions orally.

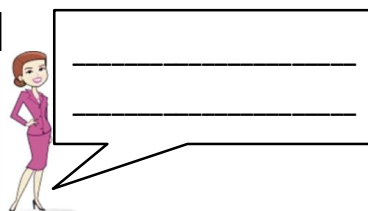
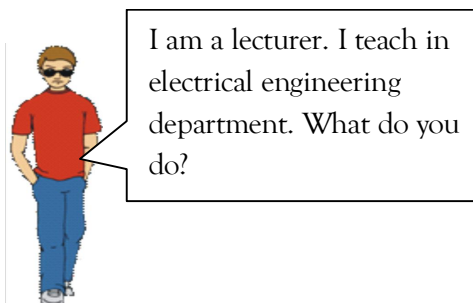
1.



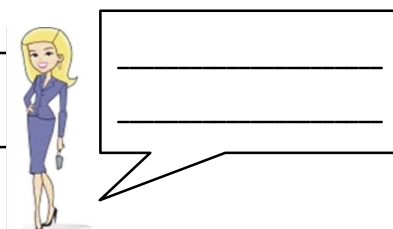
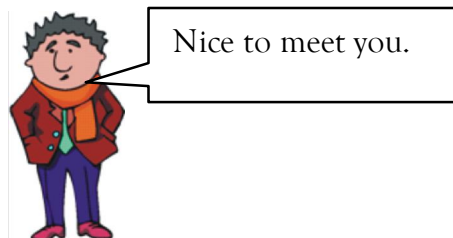
2.



3.



4.



### Task 8

Now it is your turn to introduce yourself in front of the class by following this guideline.

<b>My Self- Introduction</b>	Name is _____
	I was born in _____ on _____
	I currently live in _____
	I study _____ at _____
	My hobby is _____
	My future dream is _____

### Task 9

Interview your classmates by asking them to introduce themselves. Then write some information about your classmates in the following template.

<b>Your Classmate's Name 1</b> _____	Name	:	_____
	Birthday	:	_____
	Hometown	:	_____
	Recent address:		_____
	Hobby	:	_____
	Dream	:	_____

<b>Your Classmate's Name 2</b> _____	Name	:	_____
	Birthday	:	_____
	Hometown	:	_____
	Recent address:		_____
	Hobby	:	_____
	Dream	:	_____

Your Classmate's Name 3 _____	Name	:	_____
	Birthday	:	_____
	Hometown	:	_____
	Recent address:		_____
	Hobby	:	_____
	Dream	:	_____

---

*"If we marry educational technology with quality, enriching contents,  
that's a circle of win."*

---





---

## Objectives

After completing this unit, the students are expected to master three language skills:

**1. Reading**

- Students are able to comprehend the main ideas of the text.
- Students are able to find explicit information of the text.
- Students are able to find implicit meaning of the text.
- Students are able to find the synonym of words related to the text.
- Students are able to relate the information from the text to their real life.

**2. Writing**

- Students are able to describe people.

**3. Speaking**

- Students are able to describe people.
-



## BIBLIOGRAPHY

- AFP-JIJI, The Japan Times, Jul 25, 2013
- Anonym. 2010. Nuclear Power. [http://energyharvesting.mfs-skateboards.com/?page\\_id=24](http://energyharvesting.mfs-skateboards.com/?page_id=24)
- Anonymous. 2003. Introduction to Robots. <http://www.galileo.org/robotics/intro.html>
- Anonymous. 2010. Magnetic Fields and Electric Fields. <http://corrosion-doctors.org/Voltage/electromagnetic-def.htm>
- Anonymous. 2013. Nikola Tesla. <https://www.pbs.org/tesla>
- Anonymous. 2014. Laser Lamp. <http://www.newsourcetechnology.com/laser=lamp.htm>
- Anonymous. 2014. Types of Renewable Energy. <http://www.renewableenergyworld.com/rea/tech/home>
- Anonymous. 2014. What's the best battery. [http://batteryuniversity.com/learn/article/whats\\_the\\_best\\_battery](http://batteryuniversity.com/learn/article/whats_the_best_battery)
- Anonymous. 2013. Wind Power. [www.renewableenergyworld.com/rea/tech/wind-power](http://www.renewableenergyworld.com/rea/tech/wind-power)
- Bass, Devon. 2012. Waste to Watts: How Today's Garbage Can Be Tomorrow's Electricity. <http://oilprice.com/Alternative-Energy/Renewable-Energy/Waste-to-Watts-How-Todays-Garbage-Can-Be-Tomorrows-Electricity.html>
- Bergman. 2007. Electricity and Magnetism. [www.windows2universe.org](http://www.windows2universe.org)
- Blume, Steven W. 2007. Electric Power System Basic for the nonelectrical Professional. <http://faculty.ccri.edu/jbernardini/JB-Website/ETUT1160/M01/0-ETUT1160-02-WP-ElectricPowerBasics.pdf>
- Doug Lowe. Electronics All-in-One for Dummies
- G. Honsen and Team, 2013. Hydropower. Hydropower Book. Cambridge University Press.
- Geno Jezek. Bioelectromagnetism
- Government Office of Sweden. 2012. A New Biofuel from Algae. Environmental Technology - 13 Swedish Solutions. <http://www.regeringen.se/content/1/c6/17/61/39/67ff1a10.pdf>

Henricus Ismanthono. 2013. Geothermal energy: Abundant and eco-friendly, but neglected?. Jakarta  
<http://en.reset.org/knowledge/renewable-energy-environmentally-friendly-and-low-cost-energy-inexhaustible-sources>  
<http://mriscans.cliniccompare.co.uk/mri-scanner-machines>  
<http://www.electronics-tutorials.com/basics/electron-theory.htm>  
<http://www.energysavingtrust.org.uk/Generating-energy/Choosing-a-renewable-technology/Solar-panels-PV>  
<http://www.greenpeace.org/usa/en/multimedia/goodies/green-guide/in-your-home/electricity-lighting/>  
[http://www.ieeeghn.org/wiki/index.php/Early\\_Microelectronics](http://www.ieeeghn.org/wiki/index.php/Early_Microelectronics)  
<http://www.scribd.com/doc/5368265/What-is-Electromedicine>  
 Juergen Kolb, July 2009 (edited January 2013)  
 McGrayne. 2014. Electromagnetism. [www.britannica.com](http://www.britannica.com)  
 McMahan, Mary. 2014. What is hydroelectric power?  
 Nitin Nampalli. 2014. Batteries & Energy Storage, New technologies, Solar Choice News  
 POWERGRID International. 2013. Geothermal Energy Provides Health, Environmental Benefits  
 Soclof, Sidney. 2008. How Circuits Work. <http://science.howstuffworks.com/environmental/energy/circuit.htm>  
 Tamarra Kemsley. 2013. Scientists Achieve Teleportation in Electronic Circuit for First Time  
 Zafar, Salman. <http://www.bioenergyconsult.com/biomass-energy-resources-in-indonesia/>  
<http://1.bp.blogspot.com>  
<http://1.bp.blogspot.com>  
<http://1.bp.blogspot.com/-36PImeVA78A/UCFljxynvrI/AAAAAAAAAQs/h0QkwUcCBPc/s1600/clase.jpg>  
[http://1.bp.blogspot.com/-aQaUnojAT68/Tab6ATEffsI/AAAAAAAAAABM/FnjDLJed55U/s1600/full\\_tree\\_coconut\\_palm.jpg](http://1.bp.blogspot.com/-aQaUnojAT68/Tab6ATEffsI/AAAAAAAAAABM/FnjDLJed55U/s1600/full_tree_coconut_palm.jpg)  
[http://1.s3.envato.com/files/8410856/Man\\_Working\\_Stress.jpg](http://1.s3.envato.com/files/8410856/Man_Working_Stress.jpg)  
<http://2.bp.blogspot.com/C1bS0ekSn1k/Th2dYAQYh4I/AAAAAAAAATc/0zUCodukSVA/s1600/normal+light+bulb.jpg>  
<http://2.bp.blogspot.com/-Lmyve2oO1Jk/T5N2RKzJqAI/AAAAAAAAAFAF8/T636ih7YKJA/s1600/MonocrystallineSolarPanel.jpg>

<http://3.bp.blogspot.com>  
<http://3.bp.blogspot.com>  
[http://3.bp.blogspot.com/\\_u\\_byB1LPEr8/TGWpJytM9YI/AAAAAAAAAOiA/iZEeHkCEHRo/s1600/alex\\_ferguson.gif](http://3.bp.blogspot.com/_u_byB1LPEr8/TGWpJytM9YI/AAAAAAAAAOiA/iZEeHkCEHRo/s1600/alex_ferguson.gif)  
<http://3.bp.blogspot.com/-1-2ZKtGKfY4/UEhVo6tjFkI/AAAAAAAAAHGo/dJU4qxEPQo/s1600/bus+station.4.JPG>  
<http://3.bp.blogspot.com/wp-content/uploads/2011/07/energy-saving-light-bulbs.jpg>  
[http://3.bp.blogspot.com/-ZRheTpaKgYM/TjAucWWLr0I/AAAAAAAAAGc/SeJX\\_KKyWmw/s320/arguing.jpg](http://3.bp.blogspot.com/-ZRheTpaKgYM/TjAucWWLr0I/AAAAAAAAAGc/SeJX_KKyWmw/s320/arguing.jpg)  
<http://38.media.tumblr.com>  
<http://4.bp.blogspot.com>  
<http://4.bp.blogspot.com>  
<http://4.bp.blogspot.com/-89LeTrPvwJY/UVy3XtCDpBI/AAAAAAAAABSI/zbGNMr7wUww/s1600/Getah+Daun+Jarak.jpg>  
<http://4.bp.blogspot.com/-c3mo-AXh0C0/UyRBkVPlmXI/AAAAAAAAAAJg/UkXWPrgpXBU/s1600/Desain+online+SSI+kemasan+Siklon+1.jpg>  
<http://4.bp.blogspot.com/-LJBRv86dd14/Tmsn35vmKUI/AAAAAAAAAIs/QXBG2pgyVw4/s1600/Orang+Tua.jpg>  
[http://adhartadotcom.files.wordpress.com/2013/08/lens19284822\\_c638f8ea0a6820c2e1634a2586b7fde3.jpg](http://adhartadotcom.files.wordpress.com/2013/08/lens19284822_c638f8ea0a6820c2e1634a2586b7fde3.jpg)  
<http://agamaislam.umm.ac.id>  
<http://archive.icann.org/en/tlds/biz4/IntroductoryMaterialBiz.html>  
<http://blog.weddingpaperdivas.com/wp-content/uploads/2010/12/Lotus-Pattern-Engagement-Party-Invitation.jpg>  
<http://blogs.mcgill.ca/ccepr/files/job-interviewer.jpg>  
<http://breakthruthink.com>  
<http://cache.boston.com>  
<http://careergirlnetwork.com/wp-content/uploads/2014/02/Women-in-forefront.jpg>  
[http://carenowpc.com/yahoo\\_site\\_admin/assets/images/installation\\_man.12030733\\_std.jpg](http://carenowpc.com/yahoo_site_admin/assets/images/installation_man.12030733_std.jpg)  
<http://cdn.garcya.us/wp-content/uploads/2010/07/Household-appliances-icons-5.jpg>  
[http://cdn.images.express.co.uk/img/dynamic/11/590x/back-pain\\_gif-437580.jpg](http://cdn.images.express.co.uk/img/dynamic/11/590x/back-pain_gif-437580.jpg)

<http://cdn.instructables.com>  
<http://cdn.zmescience.com>  
<http://cdn.zmescience.com/wp-content/uploads/2014/06/job-interview.jpg>  
<http://cdn2.bigcommerce.com>  
<http://cdn3.disneybaby.com>  
[http://cdn9.1cak.com/posts/6f44197485299fb90133322d78a1bac3\\_t.jpg](http://cdn9.1cak.com/posts/6f44197485299fb90133322d78a1bac3_t.jpg)  
[http://cdn-media.viva.co.id/thumbs2/2013/08/20/218581\\_alat-baca-kartu~card-reader~e-ktp-buatan-bppt\\_663\\_382.jpg](http://cdn-media.viva.co.id/thumbs2/2013/08/20/218581_alat-baca-kartu~card-reader~e-ktp-buatan-bppt_663_382.jpg)  
<http://cdn-static.zdnet.com>  
[http://ceranity.files.wordpress.com/2011/08/20070511\\_transformer\\_bumblebee.jpg](http://ceranity.files.wordpress.com/2011/08/20070511_transformer_bumblebee.jpg)  
[http://circleme.me/blog/wp-content/uploads/2013/08/invited\\_4665c.jpg](http://circleme.me/blog/wp-content/uploads/2013/08/invited_4665c.jpg)  
[http://education.jlab.org/qa/atom\\_model\\_02.gif](http://education.jlab.org/qa/atom_model_02.gif)  
[http://energyharvesting.mfs-skateboards.com/?page\\_id=24](http://energyharvesting.mfs-skateboards.com/?page_id=24)  
[http://forum.allaboutcircuits.com/image\\_cache/http.www.globalspec.comImageRepositoryLearnMore20138BJTtransistor\\_0122104272e6dcd3400459eb19fff7eb26ecb52.png](http://forum.allaboutcircuits.com/image_cache/http.www.globalspec.comImageRepositoryLearnMore20138BJTtransistor_0122104272e6dcd3400459eb19fff7eb26ecb52.png)  
<http://goalsandachievements.com/wp-content/uploads/2014/01/presentation.jpg>  
<http://granitegrok.com>  
[http://hivehealth.com/wp-content/uploads/2009/01/mx350\\_on\\_switch\\_lg.jpg](http://hivehealth.com/wp-content/uploads/2009/01/mx350_on_switch_lg.jpg)  
<http://i.huffpost.com/gen/1192345/thumbs/o-AIRPORT-COMPLAINTS-facebook.jpg>  
<http://i.huffpost.com/gen/1436300/thumbs/o-INDONESIA-RICE-FIELD-900.jpg?2>  
[http://i00.i.aliimg.com/img/pb/417/418/336/336418417\\_885.jpg](http://i00.i.aliimg.com/img/pb/417/418/336/336418417_885.jpg)  
[http://i00.i.aliimg.com/img/pb/417/418/336/336418417\\_885.jpg](http://i00.i.aliimg.com/img/pb/417/418/336/336418417_885.jpg)  
<http://i1.tribune.com.pk/wp-content/uploads/2012/01/328006-medicine-1327672397-822-640x480.jpg>  
<http://image.improve.com>  
[http://image.shutterstock.com/display\\_pic\\_with\\_logo/483673/483673,1315336391,35/stock-vector-cartoon-man-complaining-84164974.jpg](http://image.shutterstock.com/display_pic_with_logo/483673/483673,1315336391,35/stock-vector-cartoon-man-complaining-84164974.jpg)  
<http://images.employmentcrossing.com>

<http://images.fineartamerica.com/images-medium-large/magnetism-andrew-lambert-photography.jpg>  
<http://images.inmagine.com/400nwm/iris/jaggat-001/ptg00098732.jpg>  
[http://images.sodahead.com/polls/003579497/4436560689\\_MarriedCoupleCartoon\\_xlarge.jpeg](http://images.sodahead.com/polls/003579497/4436560689_MarriedCoupleCartoon_xlarge.jpeg)  
<http://img.carapedia.com/images/article/cara-hemat-listrik-untuk-pemakaian-rumah.gif>  
<http://img.geocaching.com/cache/1f8cb566-44d0-4e4e-a057-76ff03a45d4c.jpg>  
<http://img.tradeindia.com/fp/1/001/024/445.jpg>  
<http://img1.wikia.nocookie.net>  
<http://imgs.tuts.dragoart.com>  
[http://isuphoto.smugmug.com/Other/Media-Services/Media-Business/Students-giving-ethics/i-z4W8R9W/1/L/10\\_31\\_13\\_THN\\_ethics\\_presentation-2960-L.jpg](http://isuphoto.smugmug.com/Other/Media-Services/Media-Business/Students-giving-ethics/i-z4W8R9W/1/L/10_31_13_THN_ethics_presentation-2960-L.jpg)  
<http://karaagatha.files.wordpress.com>  
<http://langitbirushop.com/wp-content/uploads/2013/09/Jam-Tangan-Guess-Wanita-Terbaru.jpg>  
<http://learn.fi.edu/franklin/scientst/elecnow.html>  
<http://lennysm.files.wordpress.com/2010/03/speech.gif>  
<http://lennysm.files.wordpress.com/2010/03/speech.gif>  
<http://listverse.com/2009/05/01/top-10-renewable-energy-sources/>  
<http://media.dallasopera.org/about/dallasopera-map.png>  
<http://mriscans.cliniccompare.co.uk/mri-scanner-machines>  
<http://myhobbies.websiteforever.com/images/boy-clipart.jpg>  
<http://new.medicine.com.my/wp-content/uploads/2005/07/hospital1.gif>  
<http://nidesoft.com/forum/blackberry-vs-nokia/blackberry-vs-nokia.jpg>  
<http://pad1.whstatic.com>  
[http://ramblingsdc.net/Australia/WfWA/20060517\\_01r\\_Albany.jpg](http://ramblingsdc.net/Australia/WfWA/20060517_01r_Albany.jpg)  
[http://resources.phrasemix.com/img/full/10-26-Feel-obligated.jpg?\\_\\_SQUARESPACE\\_CACHEVERSION=1319688329473](http://resources.phrasemix.com/img/full/10-26-Feel-obligated.jpg?__SQUARESPACE_CACHEVERSION=1319688329473)  
[http://s1.reutersmedia.net/resources/r/?m=02&d=20100618&t=2&i=132741987&w=580&fh=&fw=&ll=&pl=&r=img-2010-06-18T070843Z\\_01\\_NOOTR\\_RTRMDNC\\_0\\_India-494096-1](http://s1.reutersmedia.net/resources/r/?m=02&d=20100618&t=2&i=132741987&w=580&fh=&fw=&ll=&pl=&r=img-2010-06-18T070843Z_01_NOOTR_RTRMDNC_0_India-494096-1)  
[http://s3files.core77.com/hack2work/h2w\\_king\\_bad2.jpg](http://s3files.core77.com/hack2work/h2w_king_bad2.jpg)  
<http://sebandung.com/wp-content/uploads/2014/04/Tempat-Belanja-Barang-Elektronik-Di-Bandung.jpg>





<http://upload.wikimedia.org>  
[http://upload.wikimedia.org/wikipedia/commons/3/31/Mark\\_Zuckerberg\\_at\\_the\\_37th\\_G8\\_Summit\\_in\\_Deauville\\_018\\_v1.jpg](http://upload.wikimedia.org/wikipedia/commons/3/31/Mark_Zuckerberg_at_the_37th_G8_Summit_in_Deauville_018_v1.jpg)  
<http://upload.wikimedia.org/wikipedia/commons/4/4b/Restaurant.jpg>  
[http://upload.wikimedia.org/wikipedia/commons/7/76/LED\\_bulbs.jpg](http://upload.wikimedia.org/wikipedia/commons/7/76/LED_bulbs.jpg)  
[http://upload.wikimedia.org/wikipedia/commons/7/79/Tesla\\_circa\\_1890.jpeg](http://upload.wikimedia.org/wikipedia/commons/7/79/Tesla_circa_1890.jpeg)  
[http://upload.wikimedia.org/wikipedia/commons/9/90/Solar\\_cell.png](http://upload.wikimedia.org/wikipedia/commons/9/90/Solar_cell.png)  
[http://upload.wikimedia.org/wikipedia/commons/b/bd/Clinac\\_2rtg.jpg](http://upload.wikimedia.org/wikipedia/commons/b/bd/Clinac_2rtg.jpg)  
[http://upload.wikimedia.org/wikipedia/commons/b/bd/Dts\\_news\\_bill\\_gates\\_wikipedia.JPG](http://upload.wikimedia.org/wikipedia/commons/b/bd/Dts_news_bill_gates_wikipedia.JPG)  
[http://upload.wikimedia.org/wikipedia/commons/b/bd/Grebe\\_CR-12\\_Radio,\\_1920s.jpg](http://upload.wikimedia.org/wikipedia/commons/b/bd/Grebe_CR-12_Radio,_1920s.jpg)  
[http://upload.wikimedia.org/wikipedia/commons/b/be/Carl\\_Sagan\\_Planetary\\_Society.JPG](http://upload.wikimedia.org/wikipedia/commons/b/be/Carl_Sagan_Planetary_Society.JPG)  
[http://upload.wikimedia.org/wikipedia/commons/c/cc/Castor\\_bean\\_in\\_distubred\\_area.jpg](http://upload.wikimedia.org/wikipedia/commons/c/cc/Castor_bean_in_distubred_area.jpg)  
[http://upload.wikimedia.org/wikipedia/commons/c/cc/Castor\\_bean\\_in\\_distubred\\_area.jpg](http://upload.wikimedia.org/wikipedia/commons/c/cc/Castor_bean_in_distubred_area.jpg)  
<http://upstatemetalrecycling.files.wordpress.com/2013/03/20ga-hd-servo-wire.jpg>  
<http://us.123rf.com/400wm/400/400/archman/archman1007/archman100700297/7324912-modern-computer.jpg>  
<http://us.cdn2.123rf.com>  
<http://wp.streetwise.co/wp-content/uploads/2013/02/invitation.jpg>  
<http://www.123rf.com/clipart-vector/explaining.html>  
<http://www.alliantenergykids.com/EnergyBasics/AllAboutElectricity/000416>  
<http://www.amusingplanet.com/2013/04/taum-sauk-hydroelectric-power-station.html>  
<http://www.atmmachines.com>  
<http://www.awarenessideas.com>  
<http://www.billnye.com/about-bill-nye/curriculum-vitae/>  
<http://www.blogcdn.com/www.dailyfinance.com/media/2012/10/blender-complain-435cs102612.jpg>  
<http://www.bobvila.com/articles/how-to-install-a-dimmer-switch/>  
<http://www.bobvila.com/articles/how-to-install-a-light-fixture/>

<http://www.body-tone.com/pics/BODYSTIM.JPG>  
<http://www.bryantcomfortheroes.com>  
<http://www.businesspundit.com>  
<http://www.buydig.com/blog/wp-content/images/progressofawesome/television.jpg>  
<http://www.christmasdesigners.com/blog/wp-content/uploads/2012/06/Clamp-meter-with-a-home-mad.jpg>  
<http://www.clipartbest.com/cliparts/9iz/n7b/9izn7bAiE.jpeg>  
[http://www.clipartlogo.com/free/student\\_2.html](http://www.clipartlogo.com/free/student_2.html)  
<http://www.clker.com/cliparts/y/3/q/N/m/W/agenda-hi.png>  
<http://www.communication4all.co.uk>  
<http://www.computermuseum.li/Testpage/CSIRACa.jpg>  
<http://www.cooltanarts.org.uk/wp-content/uploads/2013/10/robot.jpg>  
<http://www.drawingcoach.com>  
[http://www.drwyckoff.org/wp-content/uploads/2011/06/a1\\_wyckoff-1\\_pp.jpg](http://www.drwyckoff.org/wp-content/uploads/2011/06/a1_wyckoff-1_pp.jpg)  
<http://www.duckduckgoose.com>  
<http://www.dvorsons.com/jet-tech/images/f16dp-dishwasher.jpg>  
<http://www.easypacelearning.com/images/givingdirections.jpg>  
<http://www.eco-business.com>  
<http://www.ecodiy.org/images/solar%20panel.JPG>  
[http://www.emirates-careers.com/sites/default/files/job-interview-tips\\_0.jpg](http://www.emirates-careers.com/sites/default/files/job-interview-tips_0.jpg)  
<http://www.englet.com/order>  
<http://www.englishdaily626.com/summary.php?134>  
<http://www.englishdaily626.com/summary.php?135>  
<http://www.english-test.net/images/toeic/013.jpg>  
[http://www.engr.psu.edu/newsdocs/E%20E\\_\\_2437a720-0\\_\\_b9eba912562f435cb.jpg](http://www.engr.psu.edu/newsdocs/E%20E__2437a720-0__b9eba912562f435cb.jpg)  
<http://www.eoionline.org/wp/wp-content/uploads/classroom.jpg>  
<http://www.esl-lab.com/dir1/map1.GIF>  
[http://www.fsec.ucf.edu/en/consumer/solar\\_electricity/basics/images/F1\\_HowCellWorks\\_401x217.gif](http://www.fsec.ucf.edu/en/consumer/solar_electricity/basics/images/F1_HowCellWorks_401x217.gif)  
<http://www.furnitureinfashion.net/images/modern-plasma-tv-stands-black-EH708-BL.jpg>  
<http://www.fvbenergy.com/wp-content/uploads/2012/12/renewable-energy-chart.jpg>  
<http://www.gadgetspeak.com/aimg/557727-dualit-dab-lite-radio-l.jpg>

<http://www.glassdoor.com>  
<http://www.goaeasy.com>  
<http://www.google.com>  
<http://www.homesolarinfo.com/images/panels-on-roof.jpg>  
<http://www.incolor-inc.com>  
<http://www.indianist.com/wp-content/uploads/2013/06/Tips-for-Maintaining-Air-Conditioners.jpg>  
<http://www.instructables.com/id/how-to-make-paper-transistor/>  
[http://www.jawapower.co.id/slide/DSC\\_0221ed-rez\\_t.jpg](http://www.jawapower.co.id/slide/DSC_0221ed-rez_t.jpg)  
<http://www.kh-uia.org.il/En/SupportIsrael/TechnologyandHighTechLeaders/Pages/Bio-Fuel.aspx>  
<http://www.letters.org/proposal-letter/proposal-letter-for-training.html>  
<http://www.lifeunderthelights.com>  
[http://www.manateememorial.com/sites/manateememorial.com/files/patient\\_cart\\_front\\_no\\_instruments\\_0240\\_0.JPG](http://www.manateememorial.com/sites/manateememorial.com/files/patient_cart_front_no_instruments_0240_0.JPG)  
<http://www.mgsenergy.com>  
<http://www.michaelpeggs.com>  
<http://www.momlogic.com>  
<http://www.mrmediatraining.com/wp-content/uploads/2012/07/Excited-Speaker.jpg>  
<http://www.mysafetysign.com>  
<http://www.orau.org/ptp/collection/consumer%20products/electrontubesblack.jpg>  
[http://www.pcc.org.uk/assets/10/making\\_a\\_complaint\\_image.gif](http://www.pcc.org.uk/assets/10/making_a_complaint_image.gif)  
<http://www.physicstoday.org/jobs/profiles/electrical-engineering-jobs>  
<http://www.picgifs.com/graphics/a/agenda/graphics-agenda407852.jpg>  
[http://www.picturesof.net/\\_images\\_300/A\\_Black\\_and\\_White\\_Cartoon\\_Gossips\\_Chin\\_Waggin\\_g\\_on\\_a\\_Sofa\\_Royalty\\_Free\\_Clipart\\_Picture\\_100709-202632-314053.jpg](http://www.picturesof.net/_images_300/A_Black_and_White_Cartoon_Gossips_Chin_Waggin_g_on_a_Sofa_Royalty_Free_Clipart_Picture_100709-202632-314053.jpg)  
[http://www.planet-science.com/umbraco/ImageGen.ashx?image=/media/9858/marie\\_curie.jpg&width=600&constrain=true](http://www.planet-science.com/umbraco/ImageGen.ashx?image=/media/9858/marie_curie.jpg&width=600&constrain=true)  
<http://www.prlog.org>  
<http://www.prodryers.com>  
[http://www.proprofs.com/quiz-school/user\\_upload/ckeditor/speech-1%283%29.gif](http://www.proprofs.com/quiz-school/user_upload/ckeditor/speech-1%283%29.gif)  
<http://www.qrg.northwestern.edu>  
<http://www.roarlocal.com.au/wp-content/uploads/2013/08/websites-on-mobile-phones-300x225.jpg>

<http://www.robo-toys.com>  
<http://www.robotshop.com/blog/en/files/Cooking-Robot.jpg>  
<http://www.robotslab.com/Services/ImageHandler.ashx?MediaBinaryGUID=%27f54b6e4cc3d64ae0bd240ae47d6484ab%27>  
<http://www.robotslab.com/Services/ImageHandler.ashx?MediaBinaryGUID=%27f54b6e4cc3d64ae0bd240ae47d6484ab%27>  
<http://www.rondatoday.com/wp-content/uploads/2009/10/uk-electrical-appliances-spain.jpg>  
<http://www.sample-resignation-letters.com/p381305-writing-a-business-proposal-letter-with.cfm>  
<http://www.seia.org/policy/solar-technology/photovoltaic-solar-electric>  
<http://www.signstoyou.com>  
<http://www.siliconray.com/media/catalog/product/cache/1/image/9df78eab33525d08d6e5fb8d27136e95/2/s/2sc5200.jpg>  
<http://www.solarfeeds.com/wp-content/uploads/panels-sun-shine.jpg>  
<http://www.stepbystep.com/wp-content/uploads/2013/01/How-to-Smile-During-a-Speech.jpg>  
[http://www.successfulreader.com/community/cfs-filesystemfile.ashx/\\_key/CommunityServer.Blogs.Components.WeblogFiles/9d227a68-7172-42dc-bd11-47ec709a8e18/group-of-students-writing-pencil-drawing.jpg](http://www.successfulreader.com/community/cfs-filesystemfile.ashx/_key/CommunityServer.Blogs.Components.WeblogFiles/9d227a68-7172-42dc-bd11-47ec709a8e18/group-of-students-writing-pencil-drawing.jpg)  
<http://www.talkmen.com/gfx/files/A00693/electric.jpg>  
<http://www.technews24h.com>  
[http://www.thedynamicturnaround.com/herbal%20medicine\\_white.jpg](http://www.thedynamicturnaround.com/herbal%20medicine_white.jpg)  
[http://www.thejakartapost.com/files/images2/p04-b\\_0.img\\_assist\\_custom-400x300.jpg](http://www.thejakartapost.com/files/images2/p04-b_0.img_assist_custom-400x300.jpg)  
<http://www.timlo.net/baca/68719504969/jelang-kemarau-waduk-gajah-mungkur-mulai-berhemat/a>  
<http://www.tipson talking.com>  
<http://www.tipson talking.com/wp-content/uploads/2013/05/job-interview.jpg>  
<http://www.tokojadi.netd2eosjbgw49cu5.cloudfront.net>  
<http://www.totaljobs.com>  
<http://www.totaljobs.com>  
<http://www.umm.ac.id/files/image/robotumm.JPG>  
[http://www.umm.ac.id/images/image\\_headmenu/mhs\\_alumni.png](http://www.umm.ac.id/images/image_headmenu/mhs_alumni.png)  
<http://www.uobkupartnership.talktalk.net>

<http://www.uvisor.com>  
<http://www.vectors4all.net/preview/science-fiction-illustration-clip-art.jpg>  
<http://www.vocabulary.cl>  
<http://www.wikihow.com/Prepare-Used-Cooking-Oil-for-Biodiesel>  
<http://www.wikihow.com/Use-a-Washing-Machine>  
<http://www.yasour.org>  
[http://www.yohanessurya.com/images/pic\\_01.jpg](http://www.yohanessurya.com/images/pic_01.jpg)  
<https://c2.staticflickr.com>  
<https://hwb.wales.gov.uk>  
<https://nationalcareersservice.direct.gov.uk>  
<https://www.dom.com/dominion-virginia-power/customer-service/your-service/images/forestry-distribution.jpg>  
<https://www.kickstarter.com>  
<https://www.kickstarter.com/projects/625327275/extremely-durable-battery-pack-for-smartphones-and>  
[Impactfactory.com](http://Impactfactory.com)  
[madskillsvocabulary.com](http://madskillsvocabulary.com)  
[www.docstoc.com](http://www.docstoc.com)  
[www.gograph.com](http://www.gograph.com)  
[www.officeclipart.com](http://www.officeclipart.com)