

# Kwok Tak Seng Catholic Secondary School

Which brands of dry cells  
have the longest life time?

# Indemnity

- This test has been conducted in non-stringent environment and **cannot accurately reflect the attributes** i.e. “life time”, of each type of battery tested. )

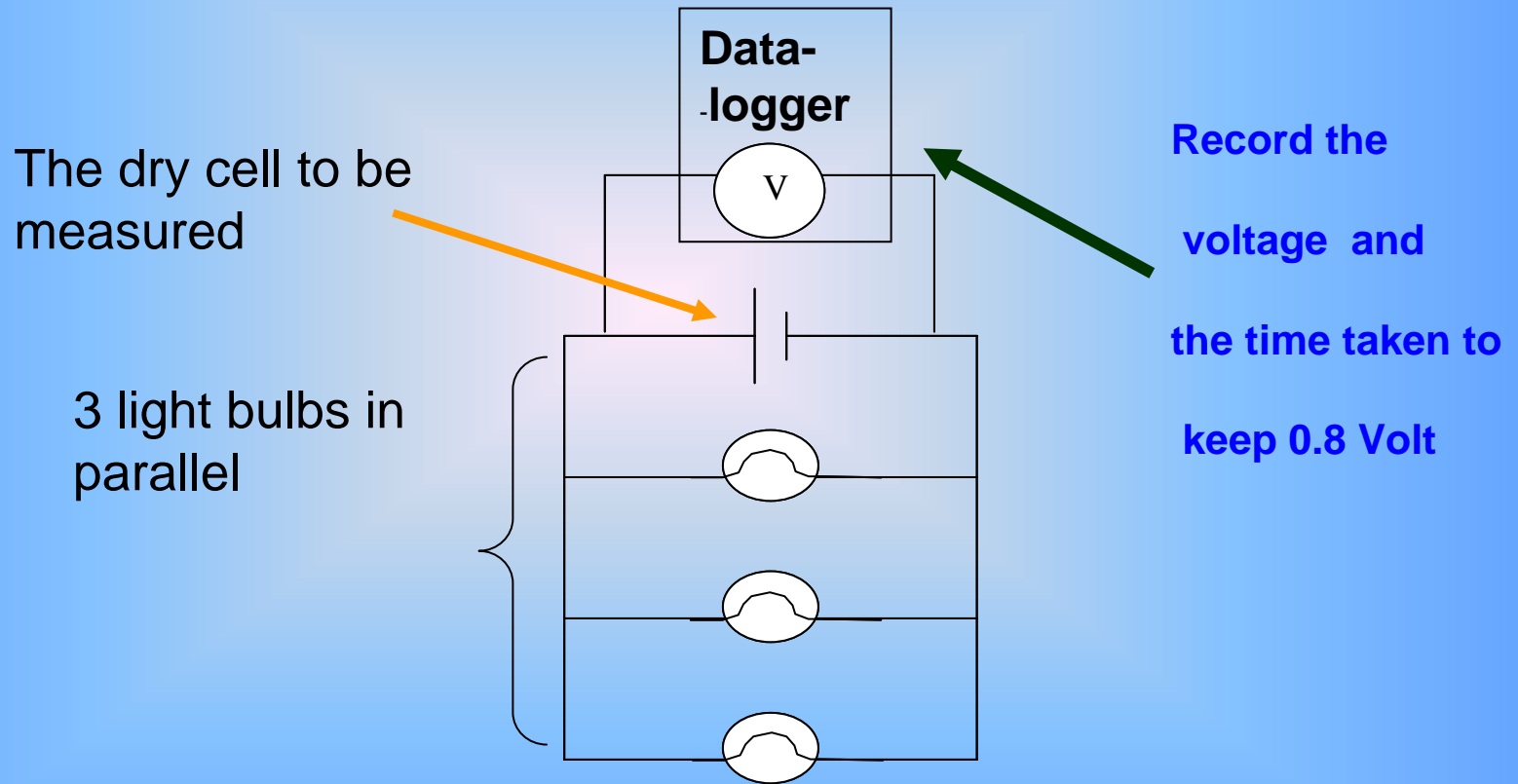
# Experiment

1. Put a dry cell in the cylinder.

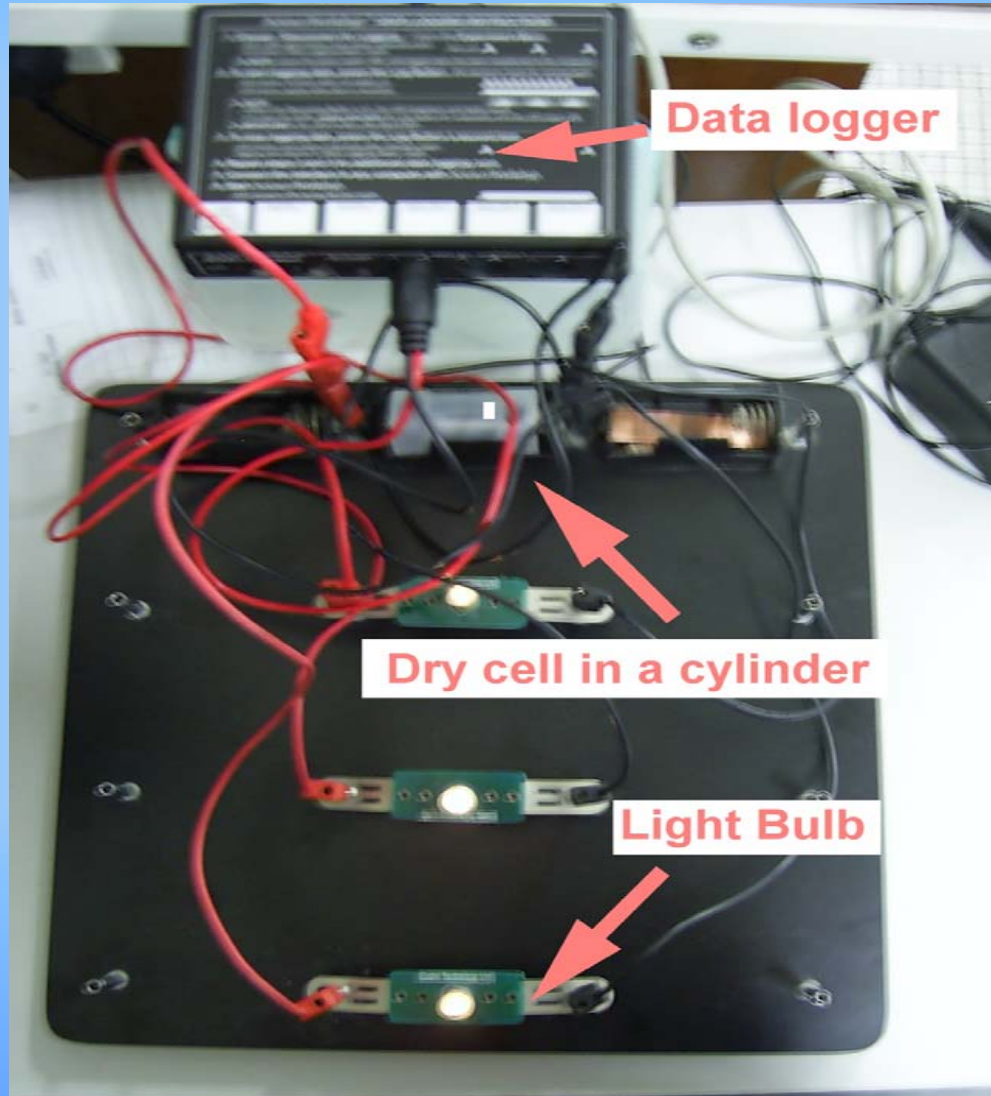


Photo 1: A dry cell in a cylindrical cell adaptor

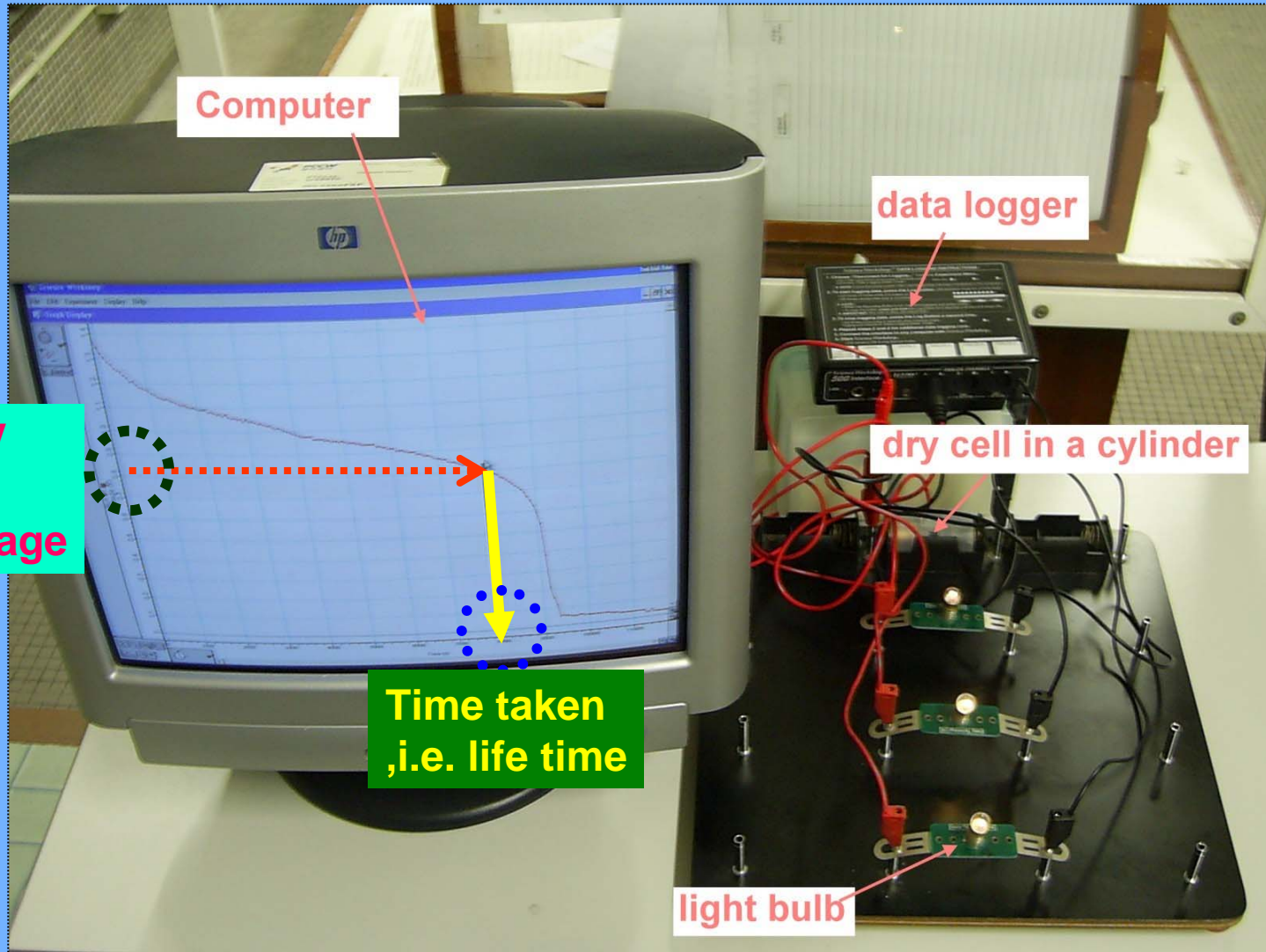
- 2. Connect the dry cell to a parallel circuit with 3 bulbs and a data logger.



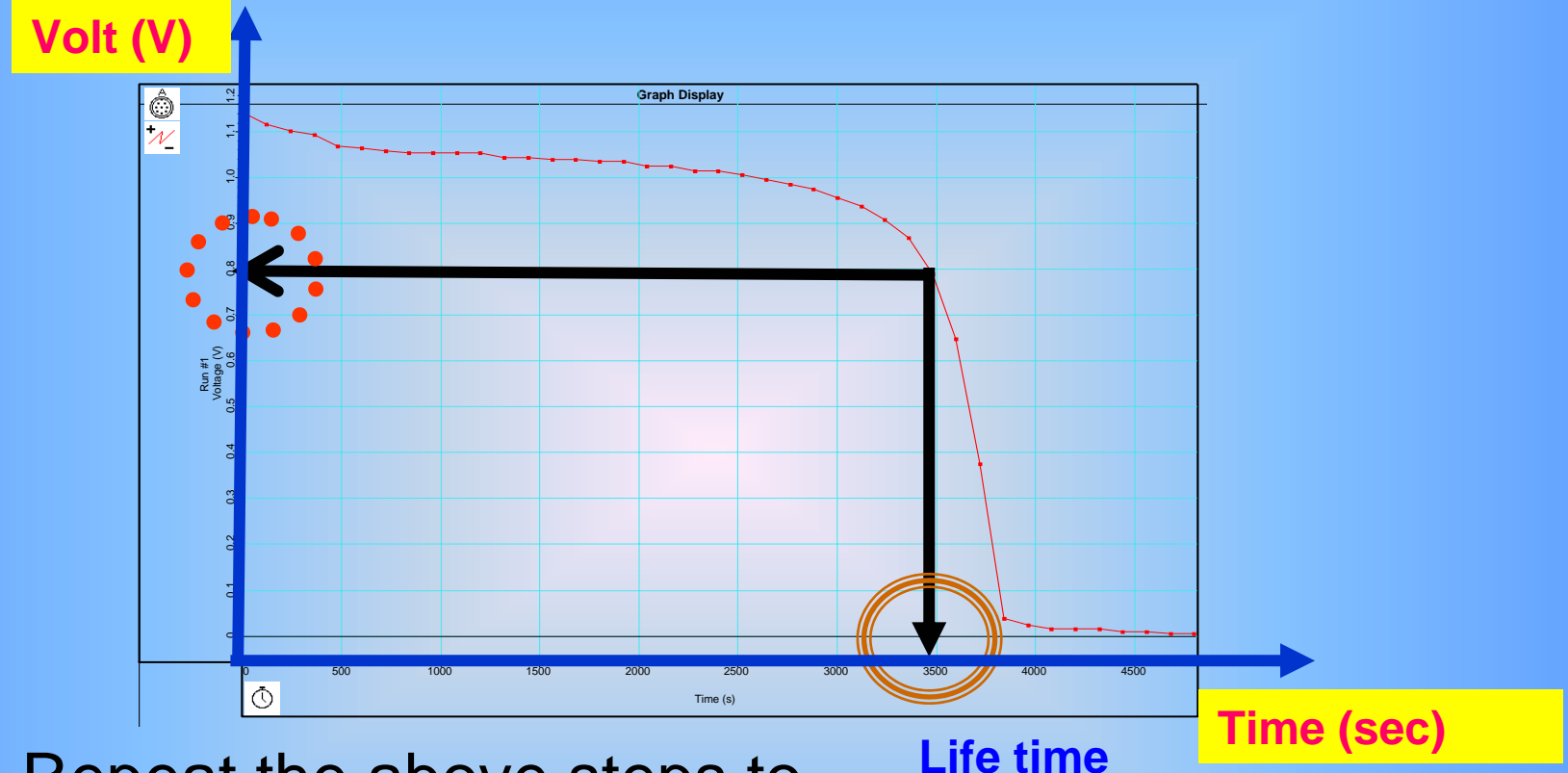
# The photo of the circuit



### 3. Connect the circuit with the computer.



4. Computer changed the data into a graph of voltage against time



5. Repeat the above steps to test different brands of dry cells.

**End of experiment**

# **Data Analysis**

# Four brands of dry cells



**GR** = GP rechargeable  
(1800mAh & 700mAh)



**DU**=Duracell



**PS**=Panasonic

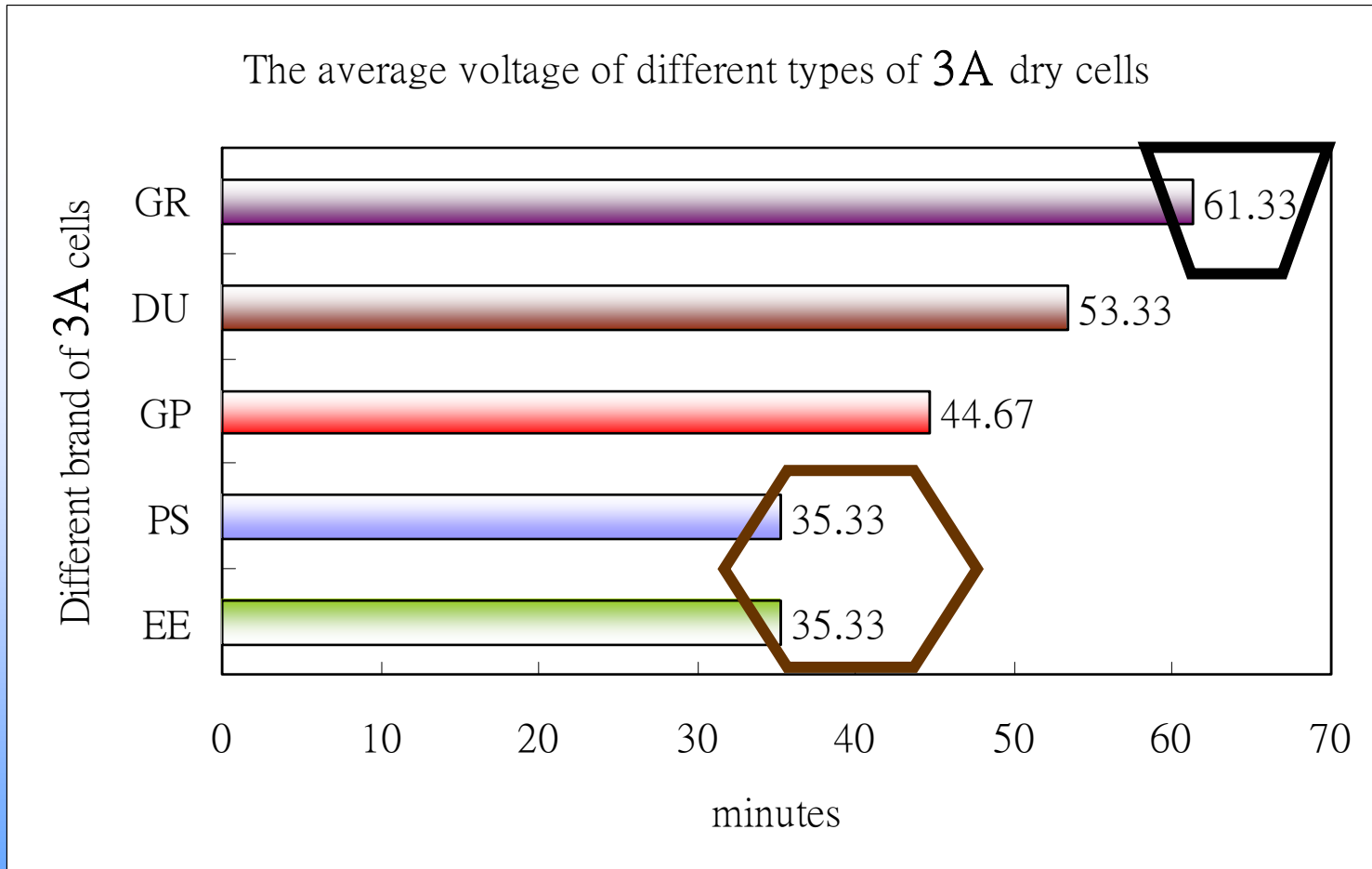


**GP**=Gold Peak

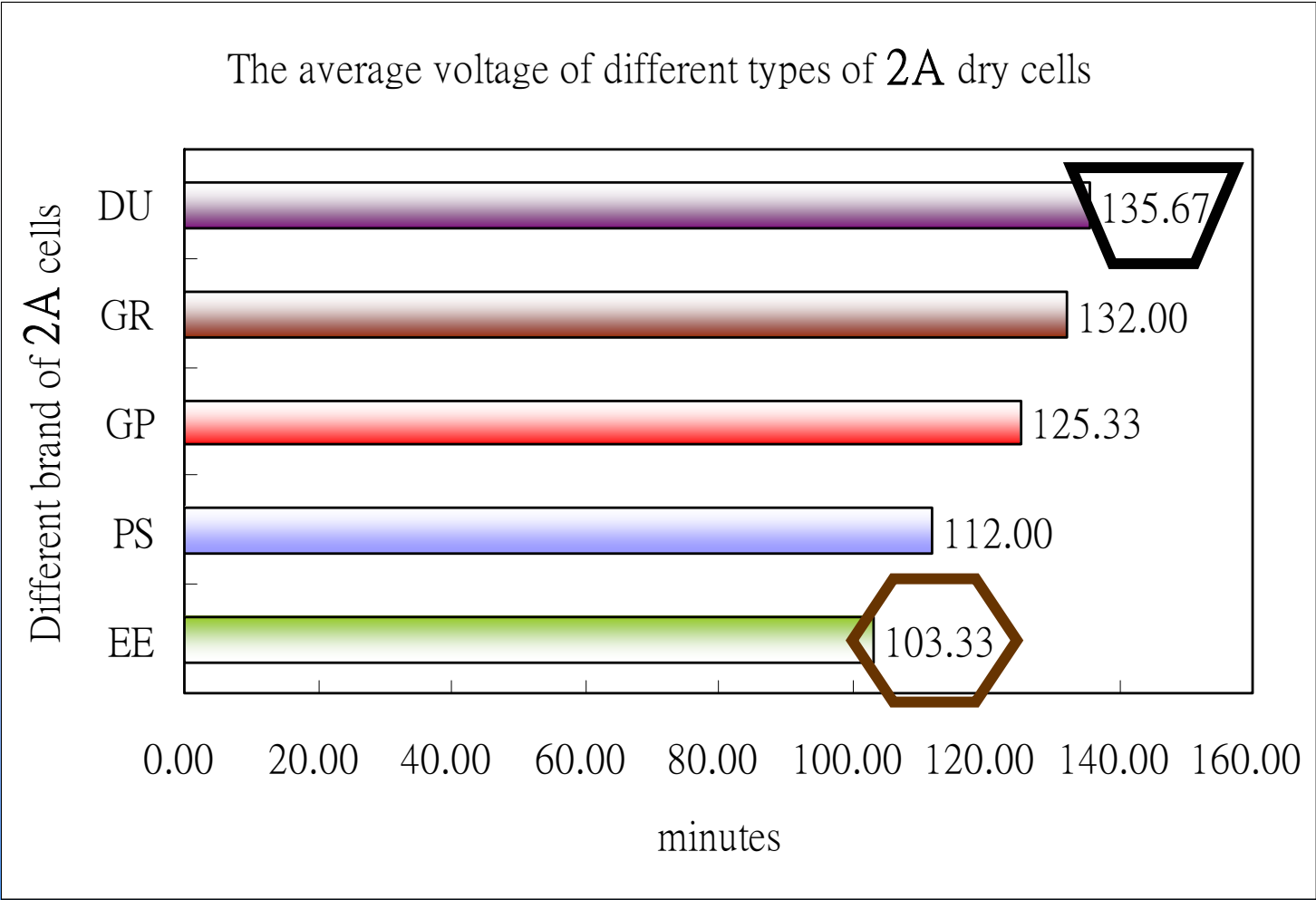


**EE**=Energizer

# The results of 3A dry cell of different brands



# The results of 2A dry cell of different brands



Evaluation  
&  
Conclusion

Life time of dry cell could not be  
**absolute**

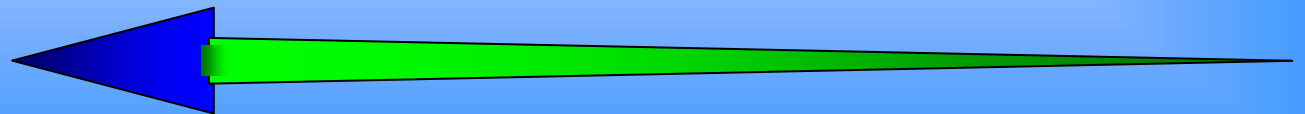
**But...**

The relative life times of dry cells can be compared.

Different dry cells are used in different electronic products according to its consumption electric quantity

From the website of consumer council

Consumption electric quantity of Electronic products	Low	Medium	High
Examples of Electronic products	Radio, clock and remote control	MD & MP3 machine	Flashing light in camera
Life time of dry cell	Longest	Longer	Shortest



# The Longest life of 2A dry cell



# The Longest life of 3A dry cell



# Conclusion

- There is no absolute life time of a dry cell.

- If we do not consider the rechargeable cell, the Duracell has the longest life in both 2A and 3A dry cells.

# Reference web sites

- [http://www.consumer.org.hk/website/ws\\_chi/choice/preview/p308.html](http://www.consumer.org.hk/website/ws_chi/choice/preview/p308.html)
- [http://www.consumer.org.hk/website/ws\\_chi/choice/preview/p309.html](http://www.consumer.org.hk/website/ws_chi/choice/preview/p309.html)

# Reference book

## *Books:*

- *p.308*
- *Integrated Chemistry Today 1*
- *First published 1993*
- *Jing Kung Educational Press*

# 2A

Average life time (min)

37

103

136

156

176

303

EV

EE

DU

ET

EA

EL



Minutes

# 3A

Average life time (min)

14

35

53

60

78

122

EV

EE

DU

ET

EA

EL



0 20 40 60 80 100 120

Minutes

**Thank you!**