Contents

目 錄

(The details of sections 1, 5 and 6 will be provided in the true copy.)*

Section 2 Basic vocabulary in Secondary Science

The following table shows basic English terms used in Secondary Science. You may do the following:

1. If you have learnt any of them, put a '✔' in the middle column.
2. Find all their Chinese terms and write them down in the right column.
3. Find out their pronunciation on the Active Science website: *http://science.pearson.com.hk.*

English term	I have learnt it	Chinese term
science	✔	科學
analyse		
animal		
apparatus		
characteristic		
chemical		
caution		
conclude		
demonstrate		
discuss		
energy		
electricity		
equipment		
experiment		
laboratory		
living thing		
material		
measure		
non-living thing		
observe		
plant		
procedure		
record		
result		
scientist		
substance		
temperature		
volume		
weight		

第二節　中學科學的基本詞彙

下表顯示中學科學的基本中文詞彙。你可進行以下活動：

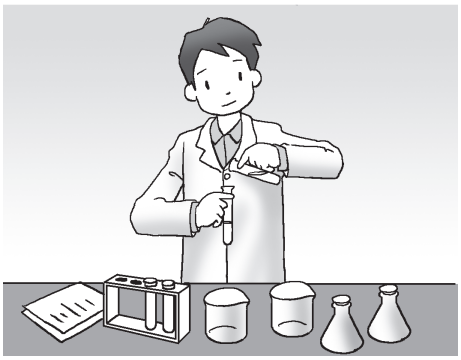
1. 在中間的一欄加上「✔」，以顯示你曾學習過的詞彙。
2. 找出與中文詞彙相應的英文詞彙，然後把英文詞彙寫在右欄。
3. 在「活學科學」網站找出英文詞彙的讀音：*http://science.pearson.com.hk*。

中文詞彙	我曾學習過	英文詞彙
科學	✔	science
分析		
化學品		
生物		
示範		
安全事項		
步驟		
物料		
物質		
非生物		
科學家		
重量		
特徵		
能量		
記錄		
討論		
動物		
設備		
植物		
結果		
量度		
温度		
電		
實驗		
實驗室		
儀器		
總結		
體積		
觀察		

Grace, Stephen and Paul were classmates in the primary school. They are now studying in different secondary schools. One day they met in the street and chatted.

Using the terms on page 6, fill in the blanks below. Use each term once only.

1. Grace said, 'I love science. I am interested in _____ things. For example, I like to _____ different kinds of fish and see how they live.'
2. Paul said, 'There are so many different _____ and _____ in the world. It is interesting to know more about their _____.'



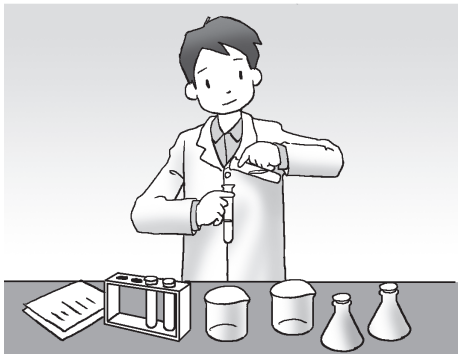
3. Grace said, 'I have to use various _____ when I dive. I hope I can find new kinds of fish.'
4. Stephen said, 'I love science too, but I am interested in _____ things. I want to have my own _____ and do my own _____ on different _____ .'
5. Paul said, 'To ensure safety, you have to use the _____ and _____ carefully.'
6. Stephen said. 'Sure! I will pay attention to _____ and plan the _____ carefully. During the experiments, I will _____ the _____ in detail. After the experiments, I will _____ the results and _____ what I have found.'
7. Grace said, 'I hope you can produce a new _____ for making good wet suits.'

8. Paul said, 'I do not wish to be a _____ , but I want to be a science teacher. I like to _____ with my students and _____ interesting experiments.'
9. Stephen said, 'A science teacher gives students training in basic but important skills, for example, how to measure the _____ , _____ and _____ of a liquid.'
10. Paul said, 'I like to teach many interesting topics, such as _____ and _____ .'

美儀、志恆和展明是小學同學，他們現時在不同的中學就讀。有一天，他們在街上相遇，並一起閒談。

利用第 7 頁的詞彙，完成以下的填充。每個詞彙限用一次。

1. 美儀說：「我喜歡科學，我對 _____ 非常感興趣。例如，我喜歡 _____ 不同種類的魚兒和研究牠們的生態。」
2. 展明說：「世界上有許多不同種類的 _____ 和 _____，能認識它／牠們的 _____ 是一件樂事。」
3. 美儀說：「我會使用一些不同的 _____ 來潛水。我希望找到新品種的魚兒。」



4. 志恆說：「我也喜歡科學，但我對 _____ 較有興趣。我希望有自己的 _____，可以進行自己的 _____，研究各種不同的 _____。」
5. 展明說：「要確保安全，你應小心地使用各種 _____ 和 _____。」
6. 志恆說：「當然！我會留意各種 _____ 和小心地計劃實驗的 _____。進行實驗時，我會把 _____ 仔細地 _____。實驗完畢後，我會對實驗的結果作出 _____ 和 _____。」
7. 美儀說：「我希望你可發明一種新 _____，用來製造性質優良的潛水衣。」

8. 展明說：「我的志願不是當一位 _____，而是一位科學老師。我享受與學生進行 _____ 和 _____ 有趣的實驗。」
9. 志恆說：「作為科學老師，可給予學生既基本又重要的技巧訓練，例如如何量度液體的 _____、_____ 和 _____。」
10. 展明說：「我喜愛教授很多有趣的課題，好像 _____ 和 _____ 等。」

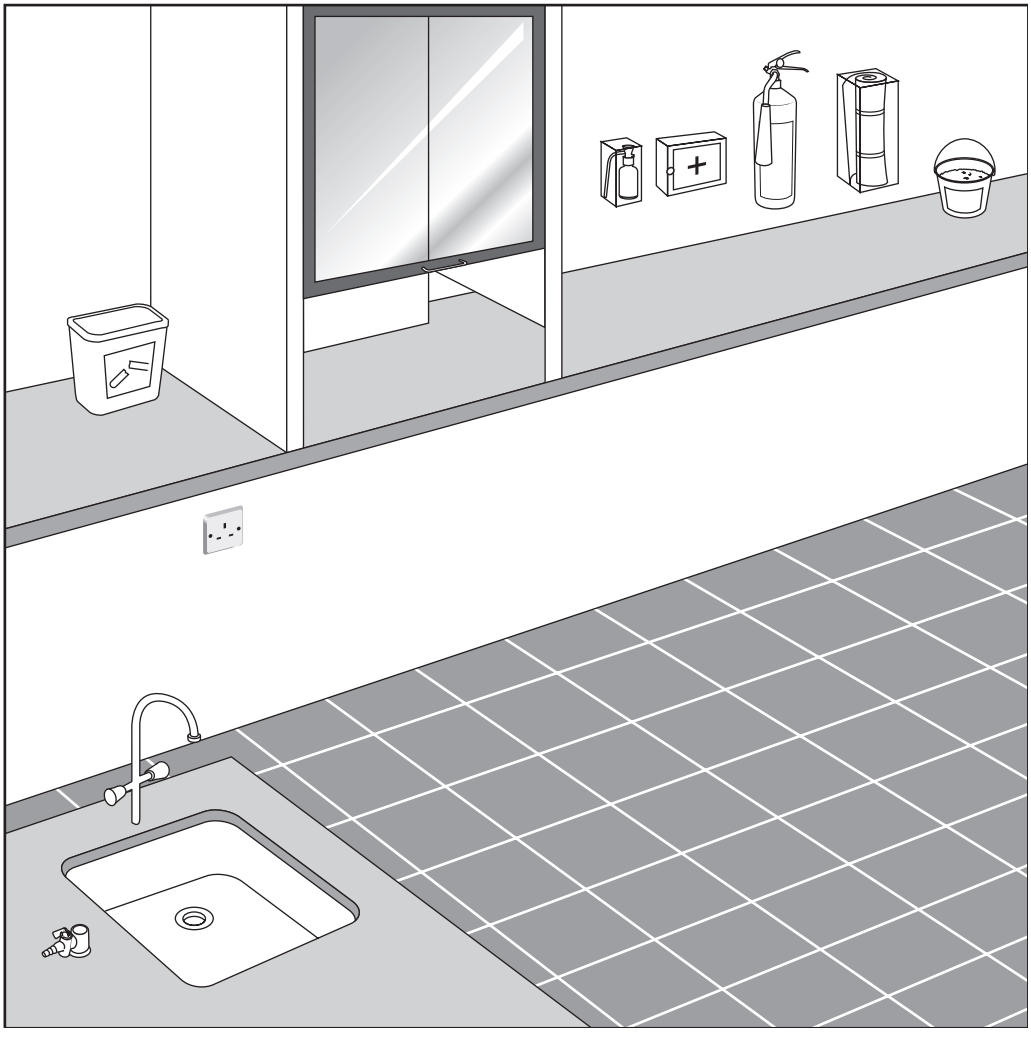
Section 3 Inside the laboratory

A. Basic equipment in the laboratory

Your teacher will introduce to you basic equipment in the laboratory.

After observing the equipment, label the following diagrams using the words given. You may find out their pronunciation on the Active Science website: *http://science.pearson.com.hk.*

bench broken glass bin electric socket
eye wash bottle fire blanket fire extinguisher first aid box
fume cupboard gas tap sand bucket sink water tap



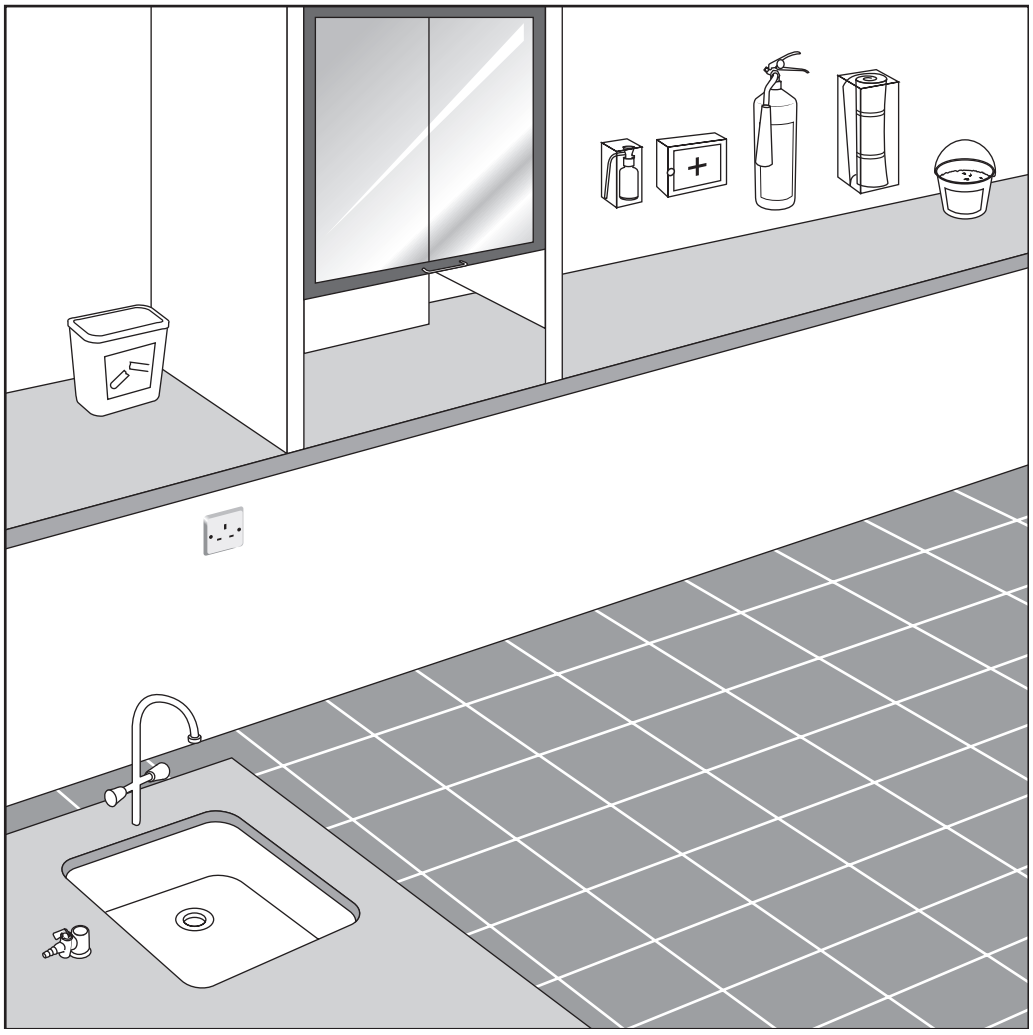
第三節　在實驗室內

A. 實驗室內的基本設備

老師會介紹實驗室內的基本設備。

觀察這些設備後，利用以下提供的詞彙在下圖加上標籤。你可在「活學科學」網站找到這些詞彙的英文讀音：*http://science.pearson.com.hk*。

實驗桌　玻璃碎片箱　供電插座　洗眼瓶　防火氈
滅火筒　急救箱　煙櫥　煤氣掣
滅火沙桶　洗滌槽　水龍頭



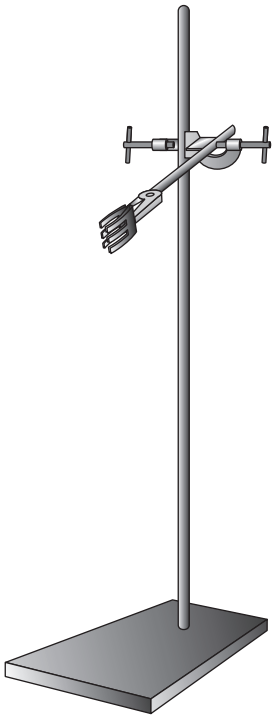
B. Commonly used apparatus in the laboratory

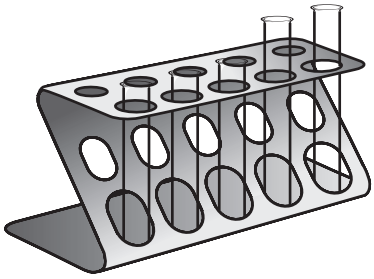
Your teacher will show you some commonly used apparatus in the laboratory.

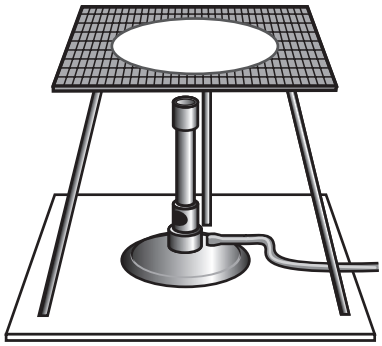
After observing the apparatus, label the following diagrams using the words given. You may find out their pronunciation on the Active Science website: *http://science.pearson.com.hk.*

1.

Bunsen burner	clamp and stand	test tube	heatproof mat
safety goggles	spatula	test tube holder	test tube rack
tongs	tripod	wire gauze	boiling tube







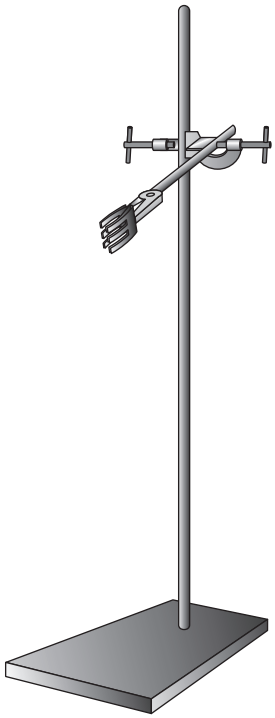
B. 實驗室內的常用儀器

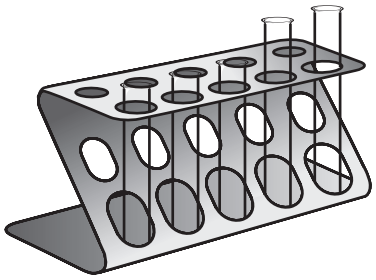
老師會介紹實驗室內的一些常用儀器。

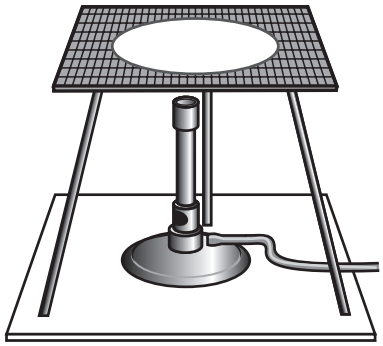
觀察儀器後，利用以下提供的詞彙在圖片上加上標籤。你可在「活學科學」網站找到這些詞彙的英文讀音：*http://science.pearson.com.hk*。

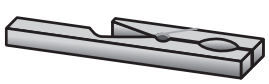
1.

本生燈	鐵架連夾	試管	防火墊
安全眼鏡	刮勺	試管夾	試管架
鉗	三腳架	鐵絲網	大試管

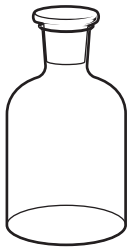
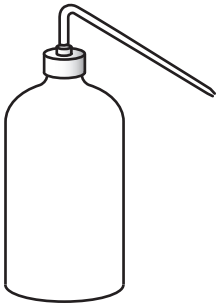


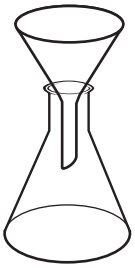


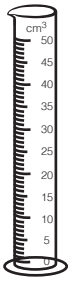


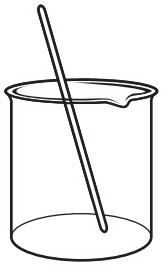


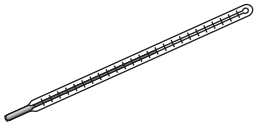
2. beaker
   dropping bottle
   glass rod
   wash bottle
   funnel
   reagent bottle
   conical flask
   gas jar
   thermometer
   dropper
   measuring cylinder
   watch glass

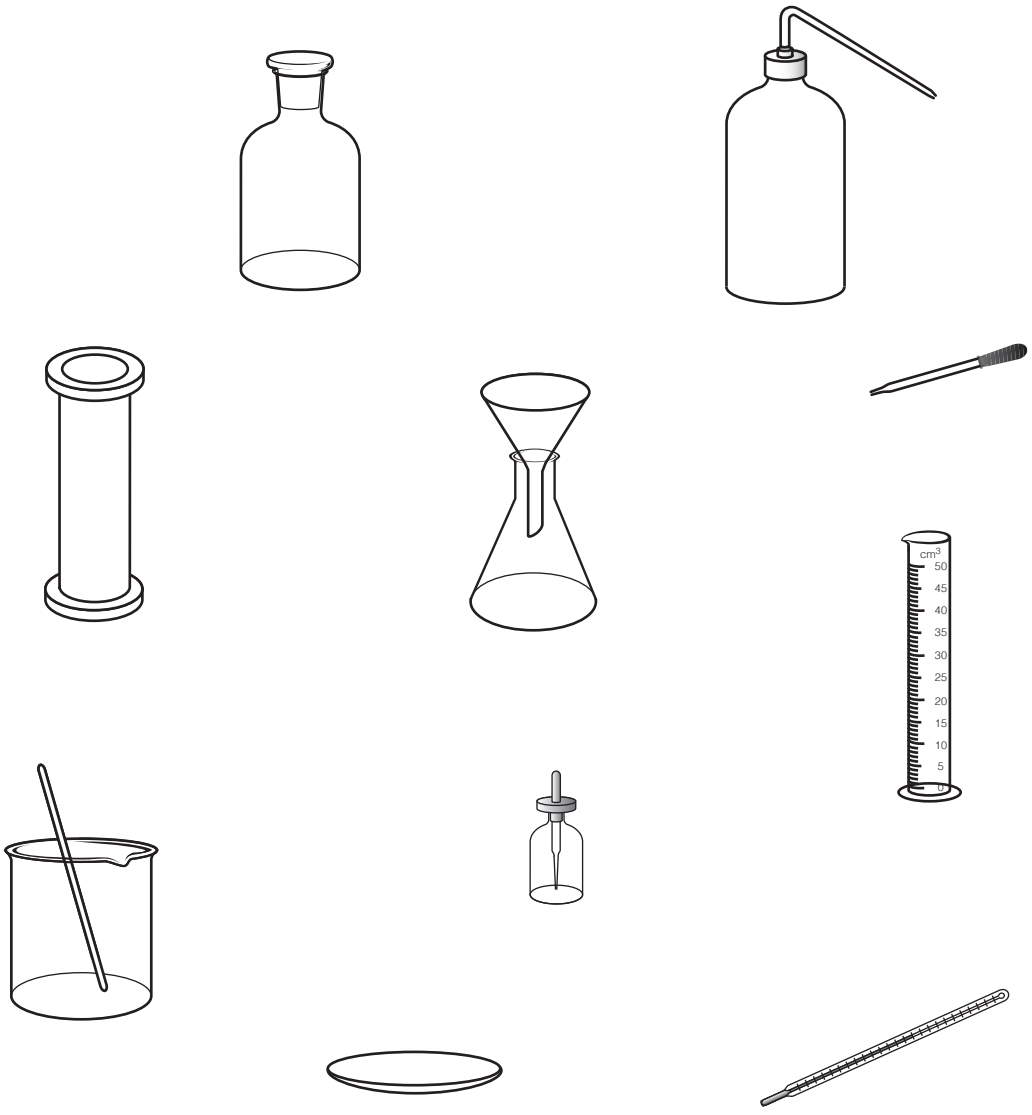






2. 燒杯　洗滌瓶　圓錐瓶　滴管
滴瓶　漏斗　集氣瓶　量筒
玻璃棒　試劑瓶　温度計　錶面玻璃



C. Laboratory safety rules

Your teacher will guide you through many interesting experiments. To enjoy doing them, you must know the safety rules in a laboratory, so that potential accidents can be avoided. Look at the laboratory safety rules listed below. Match them with the reasons for following the rules on the right. Write the answers in the space provided.

Laboratory safety rules	Reasons for following the rules
A. General rules	
1. Do not enter the laboratory without your teacher's permission.	a. Accidents may occur if you do not follow your teacher's instructions.
2. Do not do any experiments without your teacher's permission.	b. You should always be sure what you are going to do to avoid accidents.
3. Follow your teacher's instructions.	c. There may be potential dangers in a new experiment designed by you.
4. Ask your teacher if you have any questions.	d. You can follow your teacher's instructions and leave the laboratory quickly if there is a fire.
5. Make sure you are familiar with the fire escape route of the laboratory.	e. You do not know what is going on inside the laboratory, and it may be dangerous if you enter the laboratory on your own.
B. Inside a laboratory	
6. Do not eat and drink.	f. Harmful chemicals may get into your body through your mouth by accident.
7. Do not play and run.	g. They catch fire easily when they are hanging down.
8. Tie up long hairs and school ties.	h. You may knock down apparatus and chemicals, leading to an accident.
9. Keep the laboratory clean and tidy.	i. Your teacher knows how to handle the accidents in the most suitable ways.
10. Report all accidents to your teacher as soon as possible.	j. Some chemicals may cause serious injuries if they are not handled at once.
11. Handle certain accidents (such as chemicals getting on your skin or eyes) by yourself at once before reporting it to your teacher.	k. An accident can easily happen if you put apparatus, chemicals, books, etc. together untidily.

1. e 2. _____ 3. _____ 4. _____ 5. _____

6. _____ 7. _____ 8. _____ 9. _____ 10. _____

11. _____

In Chapter 1 (pages 36 to 64), you will learn more about laboratory safety, including: hazard warning labels, how to handle laboratory accidents, and how to use various apparatus.

C. 實驗室安全守則

老師將會引導你進行很多有趣的實驗。要體會做實驗的樂趣，你應先認識一些實驗室安全守則，以防發生意外。細閱下列守則，把它們與右欄的相關原因配對起來，並把答案填在橫線上。

實驗室的安全守則	遵從守則的原因
甲、一般守則	
1. 未經老師批准，不可進入實驗室。	a. 如不遵守老師的指示，便有可能發生意外。
2. 未經老師許可，不可擅自進行實驗。	b. 無論任何時間，你都應確切知道自己要做甚麼，以免發生意外。
3. 必須遵守老師的指示。	c. 你所設計的實驗可能有潛在的危險。
4. 如有問題，應向老師問個明白。	d. 如果發生火警，你便可按照老師的指示快速地離開實驗室。
5. 熟悉實驗室的走火通道。	e. 你不知道實驗室內正在進行甚麼實驗，自行進入會有危險。
乙、在實驗室內	
6. 不可在實驗室內飲食。	f. 有害的化學品可能會意外地經由口部進入體內。
7. 不可在實驗室內嬉戲或奔跑。	g. 它們垂下來的時候很容易觸及火焰。
8. 束起長髮和領帶。	h. 你可能會把一些儀器或化學品撞倒，引致意外。
9. 保持實驗室整齊和清潔。	i. 老師會用最適當的方法處理各種意外。
10. 發生任何意外，應盡快通知老師。	j. 有些化學品會造成嚴重的傷害，必須盡快處理。
11. 在一些緊急的情況下（如化學品濺及皮膚或眼睛），你須先行處理意外，然後才通知老師。	k. 如果你把各種儀器、化學品、書籍及其他物品亂放置，會較容易發生意外。

1. e　2. _____　3. _____　4. _____　5. _____

6. _____　7. _____　8. _____　9. _____　10. _____

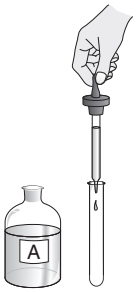
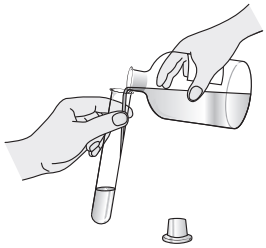
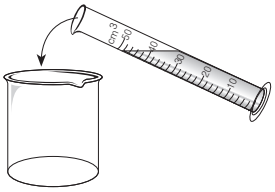
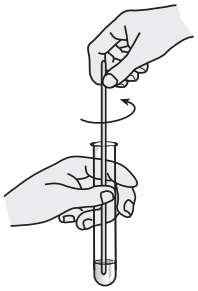
11. _____

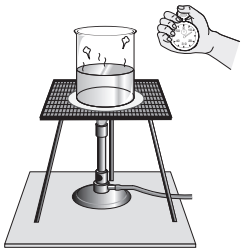
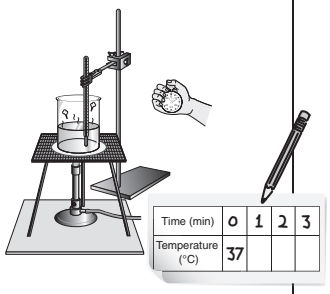
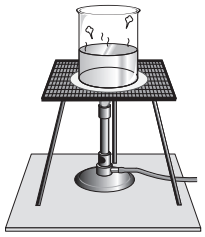
在第 1 章（第 36 至 64 頁），你將學習更多有關實驗室的知識，包括：化學品的危險警告標籤、實驗室意外的處理方法，及各種儀器的使用方法。

Section 4 Doing experiments

A. Common instructions in experiments

When doing experiments, it is important to read the instructions given by your teacher carefully so that you understand what to do. Some common instructions in experiments are given below.

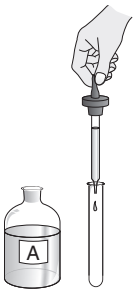
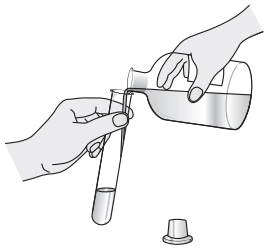
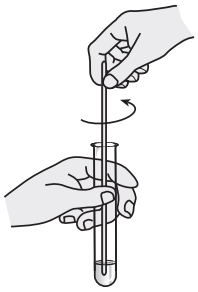
Instructions	Diagrams
1. **Add** 5 drops of solution *A* to a test tube.	
2. **Fill** a test tube with solution *B* until it is one-third full.	
3. **Pour** 40 cm^3 of tap water into a beaker.	
4. **Stir** the solution with a glass rod.	

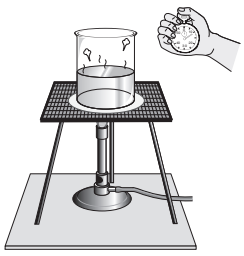
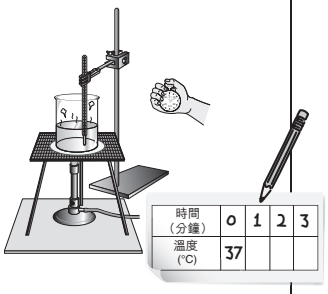
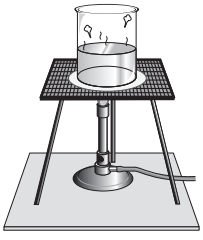
Instructions	Diagrams
5. Use a stopwatch to **measure** how long it takes for the water to boil.	
6. **Record** the temperature of water every minute in the table.	
7. **Heat** the beaker of water using a Bunsen burner.	

第四節　進行實驗

A. 常見的實驗指引

進行實驗時，你必須要小心閱讀老師所提供的指引，從而了解各步驟的做法。以下是一些常見的實驗指引。

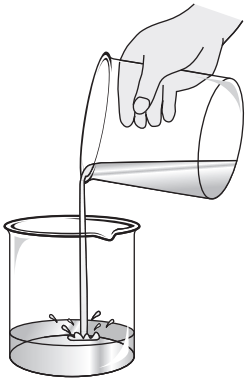
指引	圖示
1. 把 5 滴溶液 A **加進**試管中。	
2. 把溶液 B **注入**試管中，直至三分一滿。	
3. 把 40 cm^3 的自來水**倒進**燒杯中。	
4. 用玻璃棒**攪拌**溶液。	

指引	圖示
5. 用秒錶**量度**要水煮沸所需的時間。	
6. 每隔一分鐘，在表格中**記錄**水的溫度。	
7. 利用本生燈把燒杯中的水**加熱**。	

Look at the following diagrams carefully. Choose the most suitable sentence to describe each of the diagrams from the sentences given below. Write the numbers in the appropriate boxes.

1. Stir the solution in the beaker with a glass rod.
2. Pour 20 cm^3 of water to a beaker.
3. Pour the solution from one beaker to another beaker.
4. Fill a test tube with the solution until it is one-third full.
5. Pour 20 cm^3 of solution from the beaker to a test tube.
6. Add one spoonful of table salt to a beaker of water.
7. Heat the solution in the beaker with a Bunsen burner.

A.



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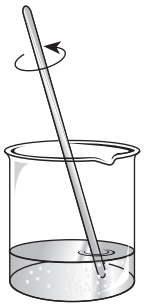
B.



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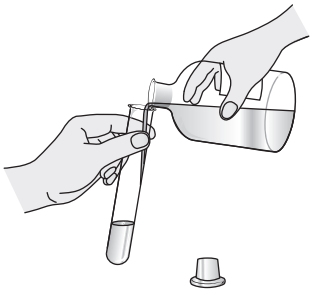
C.



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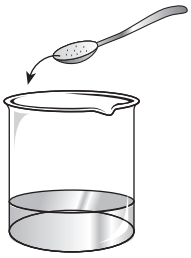
D.



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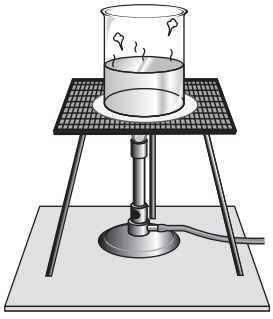
E.



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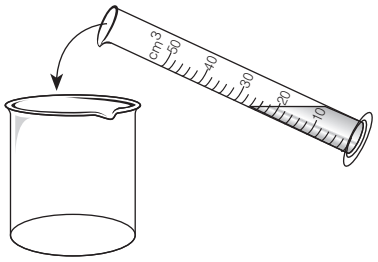
F.

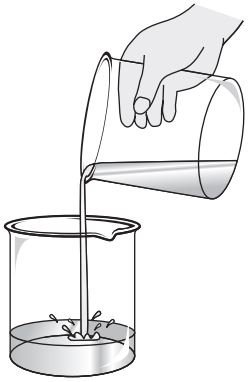


☐

看看以下繪圖。從所提供的句子中，選出最適合用來描述該繪圖的一個句子，並把代表句子的數字填在空格中。

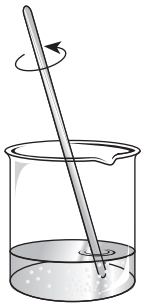
1. 用玻璃棒攪拌燒杯中的溶液。
2. 把 20 cm^3 的水倒進燒杯中。
3. 把溶液由一個燒杯倒進另一個燒杯中。
4. 把溶液注入試管中，直至三分一滿。
5. 把 5 cm^3 的溶液由燒杯倒進試管中。
6. 把一匙食鹽加進盛有水的燒杯中。
7. 用本生燈加熱燒杯中的溶液。

A.



□

B.



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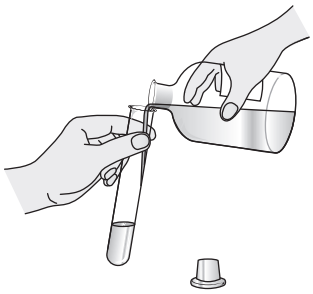
C.



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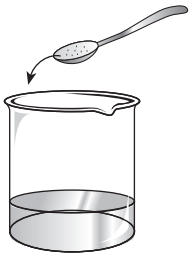
D.



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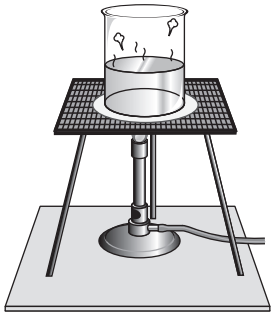
E.



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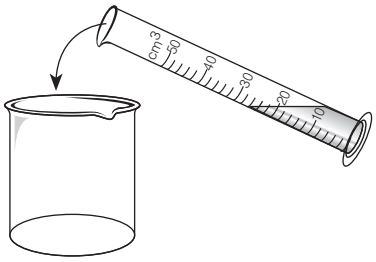
F.



□

B. Doing and recording an experiment

In an experiment, you have to do the following:

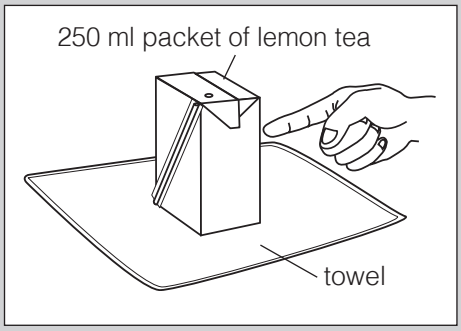
1. Read the procedure carefully so that you understand what to do.
2. Follow the procedure and do the experiment carefully.
3. Record your observations.
4. Analyse the results and draw your conclusion.

To have such experience, you may do the following experiment at home.

<u>To test where we can push and topple a packet of lemon tea</u>

Procedure

1. Measure and record the height of a 250 ml packet of lemon tea.
2. Put a towel on a table.
3. Put the packet of lemon tea on the towel.
4. As shown in the figure, use your index finger to push the packet lightly at a point 1 cm above the table. Does it topple over? Record the result in the table below.
5. Repeat step 4 at a point 2 cm above the table.
6. Repeat step 4 at points 3 cm, 4 cm, … above the table.



Results

Height of the packet = _____ cm

Height of the finger above the table	Does the packet topple over? (yes/no)	Height of the finger above the table	Does the packet topple over? (yes/no)
1 cm		6 cm	
2 cm		7 cm	
3 cm		8 cm	
4 cm		9 cm	
5 cm		10 cm	

Analysis

The height of the middle point of the packet is _____ cm.

The packet topples over when the finger is _____ .

Conclusion

The packet of lemon tea topples when we push it _____ (above / below) its middle point.

B. 進行實驗和記錄結果

進行實驗時，你應該：

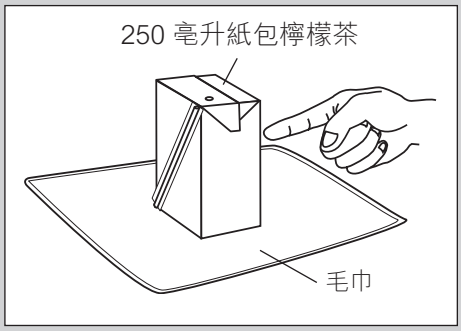
1. 小心閱讀步驟，從而了解整個實驗的做法。
2. 依照步驟，小心地進行實驗。
3. 觀察和記錄結果。
4. 分析結果和作出總結。

你可在家中進行以下實驗，從中吸取經驗。

<u>測試在哪個位置推動一盒紙包檸檬茶能使它倒下</u>

步 驟

1. 量度和記錄一盒 250 毫升紙包檸檬茶的高度。
2. 把一條毛巾鋪放在桌上。
3. 把檸檬茶放在毛巾上。
4. 依圖所示，利用食指輕輕推動紙包檸檬茶。手指離開桌面的高度是 1 cm。紙盒會否倒下？把結果記錄在下表。
5. 重複步驟 4，這次手指離開桌面的高度是 2 cm。
6. 重複步驟 4，手指離開桌面的高度是 3 cm、4 cm …。



結 果

紙包檸檬茶的高度 = _____ cm

手指離開桌面的高度	紙包檸檬茶會否倒下？(會/否)	手指離開桌面的高度	紙包檸檬茶會否倒下？(會/否)
1 cm		6 cm	
2 cm		7 cm	
3 cm		8 cm	
4 cm		9 cm	
5 cm		10 cm	

分 析

紙盒的中央點離開桌面的高度是 _____ cm。

當手指離開桌面的高度是 _____，紙盒便會倒下。

結 論

用手指在紙包檸檬茶中央點的 _____（上方／下方）推動，紙盒便會倒下。