

Tin Ka Ping Secondary School

F.1 Integrated Science

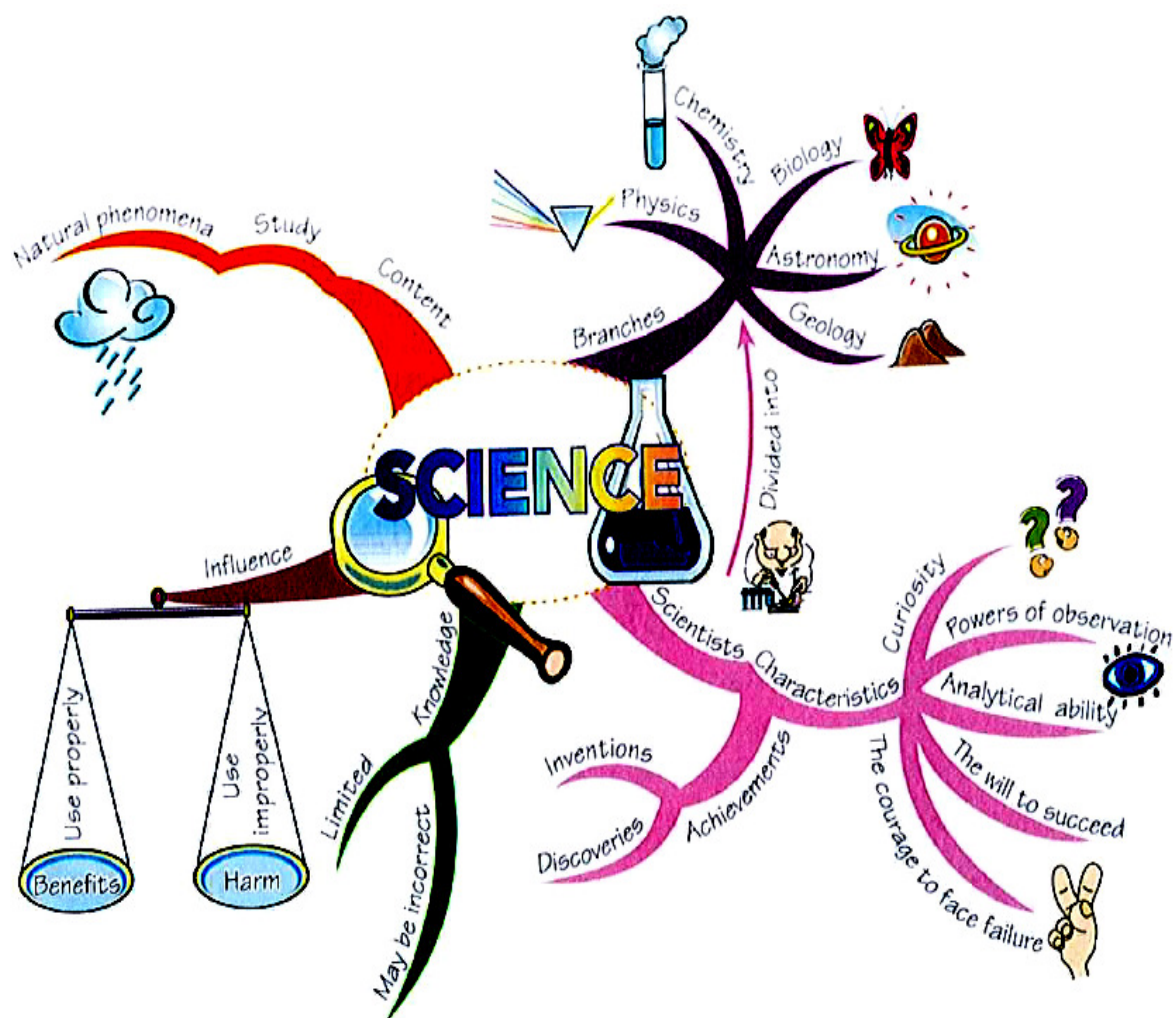
Unit 1 – Introducing Science

1. **Read Textbook Book 1A and fill in the blanks.**
2. **Look up the dictionary and put the Chinese meanings of the vocabulary items in brackets ().**

Name : _____ ()

Class : _____

Date : _____



1. What is science ? (P.4)

Science is the study of _____.

(things and what happens around us using scientific methods)

2. The branches of Science (P.5)

Branches () of science	Examples	What does it study?
	Biology (生物學)	The study of living things.
	Chemistry ()	The study of the properties, composition, sturture and reaction of matter
	Physics ()	The study of matter, energy and force.
	Astronomy ()	The study of the Sun, the moon and stars.
	Medicine ()	The study of the human body and diseases.
	Geology ()	The study of the structure of the Earth.

3. Application and impact of science (P.6 – 17)**1. Scientific discoveries and inventions**

Fill in the blanks:

Word can use: **explanations, questions, scientific world, scientific, expert**

- People who are _____ in one or more branches of science are called scientists.

They always ask _____ and find out _____ to them by using _____

method. In this way, they can build up the _____.

expert, questions, explanations, scientific, scientific world

- Scientists have different scientific *discoveries* and *inventions*. Below are some famous scientists. **Search their information on-line. (P.7)**

	Year	Name of scientists	Branch of science they study	Achievement / Work they have done
e.g.	1687	Isaac Newton	<u>Physics</u>	<u>Discovery</u> / invention / Others : <u>Universal gravitational force</u>
1		Marie Curie	_____	Discovery / invention / Others(please circle) : _____
2		Stephen Hawking	_____	Discovery / invention / Others(please circle) : _____
3		Charles Kao (A Chinese scientist)	_____	Discovery / invention / Others(please circle) : _____
4		Charles Darwin	_____	Discovery / invention / Others(please circle) : _____
5		Albert Einstein	_____	Discovery / invention / Others(please circle) : _____
6		Youyou Tu	_____	Discovery / invention / Others(please circle) : _____
7		Lap-Chee Tsui	_____	Discovery / invention / Others(please circle) : _____
8		_____ (A Chinese scientist)	_____	Discovery / invention / Others(please circle) : _____

(b) **Discovery () and inventions ()**

- Scientists _____ and _____ brings us many benefits

(discoveries,inventions)

Example of discoveries (P.6)

1. A French scientist, discovered that _____ can cause wine to sour.
2. _____

Example of inventions:

1. _____ 2. _____

(telephones, lamp, computers, television, air conditioner)

- The inventions have greatly improved the _____.

(living standard)

Is science always good for us? (P.8)

Benefit		Harm
	Nuclear technology	
	Plastics	

2. Natural resource () management P.9

They can be classified into different groups:

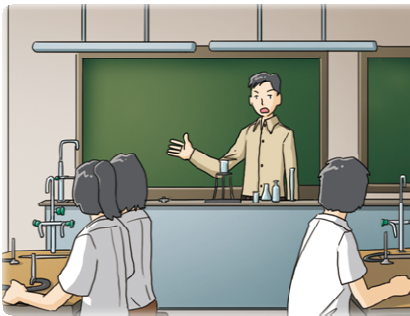
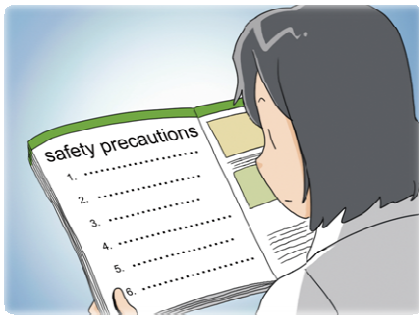


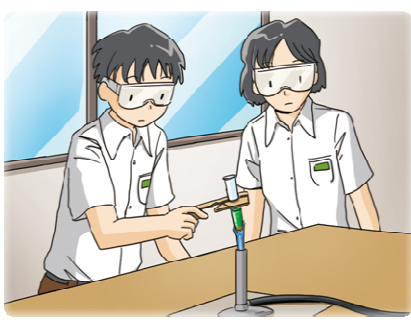
<u>Renewable resources</u> () : They can be replenished () continuously in Nature.	<u>Non-renewable</u> () <u>resources</u> : They cannot be replenished in a _____ _____ once they are used up.
1.	1.
2.	2.
3.	3.

4.	
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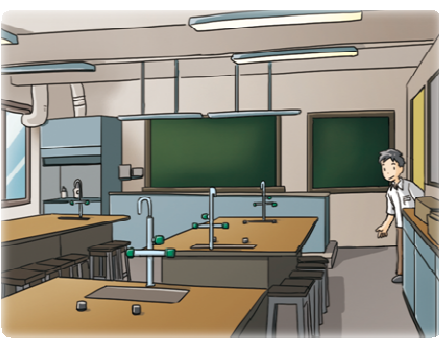
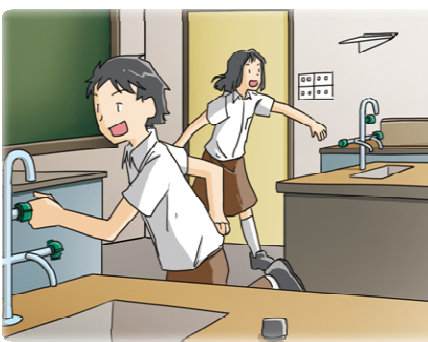
4(nuclear, kill and injure many people)



. Safety in the science laboratory (P 29)


(a) To 'DO' list

		
1. Always follow instructions given by your teacher	2. Read safety precautions before carrying out an experiment	3. Report all accidents to your teacher at once
		
4. Tie up long hair, school ties and loose clothing	5. Wear safety goggles when heating	





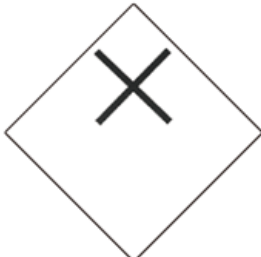
(b) To 'DON'T' list

		
1. Do not touch hot apparatus.	2. Do not enter the laboratory without your teacher's permission	3. Do not run or play in the laboratory.

		
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4. Do not block the walking space with stools or bags.	5. Do not eat or drink in the laboratory	6. Do not throw solid waste into the sink
	7. Do not smell or taste any substances unless your teacher asks you to do so	



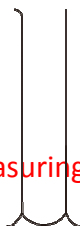

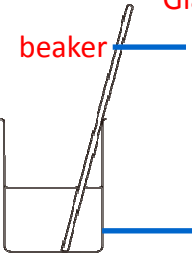
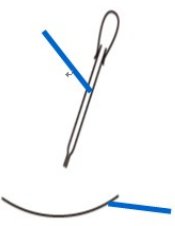
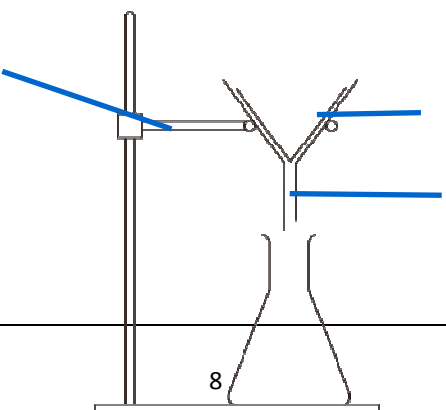
5. Hazard warning symbols () (P.30)

		
Flammable	Explosive	Corrosive
	Draw:	
Toxic		Irritant

Harmful

Harmful

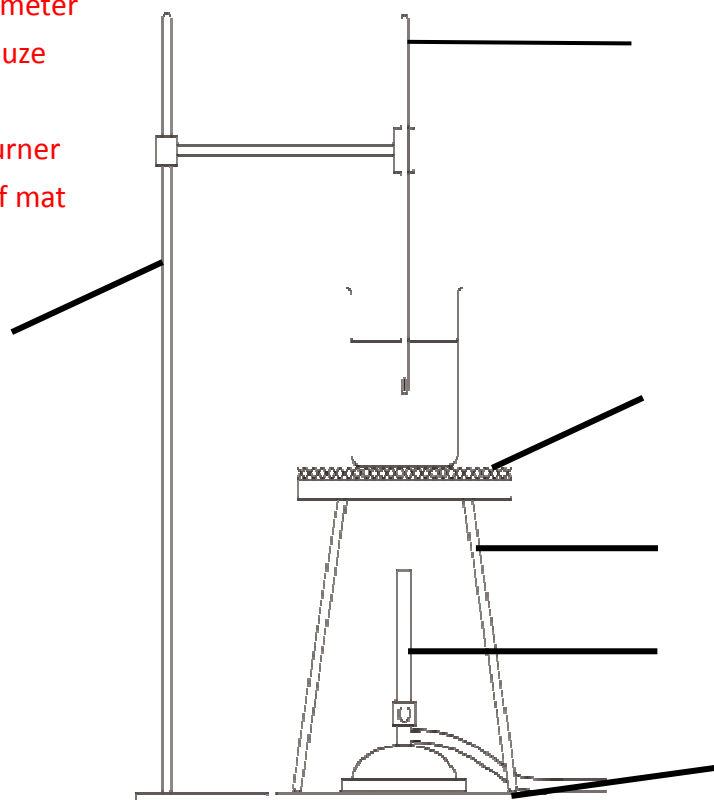
6. Laboratory apparatus and equipment (p.37-41)

1.  Test tube	2.  Stopper , Boiling tube	3.  Measuring Cylinder
4.  Evaporating dish	5.  beaker Glass rod,	dropper , watch glass 
 8		

Funnel holder filter paper
Stand filter funnel
Conical flask

8.

Clamp thermometer
Wire gauze
Tripod
Bunsen burner
Heat proof mat



7.

A. Key terms 詞彙**✎ Exercise 1**

Match the English terms below with their Chinese terms by writing the corresponding letters *a* to *n* in the blanks below.

把以下英文詞彙及中文詞彙配對，在橫線上填上 *a* 至 *n*。

- | | | |
|--------------------|-------|---------|
| 1. science | _____ | a. 滴管 |
| 2. scientist | _____ | b. 本生燈 |
| 3. discovery | _____ | c. 儀器 |
| 4. invention | _____ | d. 發光焰 |
| 5. experiment | _____ | e. 實驗 |
| 6. hypothesis | _____ | f. 實驗室 |
| 7. conclusion | _____ | g. 科學 |
| 8. fair test | _____ | h. 科學家 |
| 9. variable | _____ | i. 結論 |
| 10. laboratory | _____ | j. 假說 |
| 11. apparatus | _____ | k. 公平測試 |
| 12. Bunsen burner | _____ | l. 變數 |
| 13. dropper | _____ | m. 發明 |
| 14. luminous flame | _____ | n. 發現 |

1	G		8	K
2	H		9	L
3	N		10	F
4	M		11	C
5	E		12	B
6	J		13	A
7	i		14	D

Verb and preposition 動詞及介詞	Example 例子
... use ... to使用...來...	We use a Bunsen burner to heat a beaker of water. 我們使用本生燈來加熱一燒杯水。
... use ... for (verb + ing)使用...來...	We use a Bunsen burner for heating a beaker of water. 我們使用本生燈來加熱一燒杯水。
... is used for (verb + ing)可用來...	A Bunsen burner is used for heating a beaker of water. 本生燈可用來加熱一燒杯水。
... mix ... with和...混合...	We mix solution A with solution B. 我們把溶液 A 和溶液 B 混合。
... transfer ... from ... to從...移取至...	We transfer 10 drops of oil from the beaker to the test tube. 我們把 10 滴油從燒杯移取至試管中。
... pour ... into倒入...	We pour some water into a test tube. 我們把一些水倒入試管中。
... fill ... with ... until注入...至...	Fill a beaker with tap water until it is about half full. 把自來水注入燒杯中至半滿。
... measure ... with用...量度...	We measure the mass of the stone with a balance. 我們用天平來量度石頭的重量。
... is measured in的量度單位是...	Weight is measured in kilograms. 重量的量度單位是公斤。

8.

Fill in the blanks with suitable words.

在橫線上填上適當的詞語。

to in for of with from into

1. We use a Bunsen burner _____ heating.
2. We measure length _____ a metre rule.
3. Time is measured _____ seconds, minutes and hours.
4. We use a dropper (a)_____ transfer a small amount (b)_____ liquid.
5. Transfer five drops of solution A (a)_____ a beaker (b)_____ a test tube.
6. Mix 10 cm³ of solution A (a)_____ 10 cm³ (b)_____ solution B.
7. Pour some coloured solution _____ a test tube until it is about one-third full.

1. For 2. With 3.in 4.to, of
5. from, to 6.with, of 7.into

Further exercises (finish in the textbook 1A)

1. Activity 1.1 (P.7)

2. Activity 1.9 (P.29)

3. Checkpoint 1.4 (P.41)

**4. Watch the videos from the following QR code
and write down the date of watch.**



Watch 'Unit 1' video

Write down the date of watching

Video	Date of watch
01. Name of apparatus 1	
02. Name of apparatus 2	
03. Bunsen burner (Structure)	
04. Use of Bunsen Burner	
05. Use of dropper	
06. Mixing solution	
07. Heating large amount of liquid	
08. Heating small amount of liquid	
09. Filtration (part 1)	
10. Filtration (part 2)	