

## S1 Topic 1

### **Dos and Don'ts: Laboratory Safety Rules**

Level: S1

Topic: Safety in the laboratory (Section 1.2 of Unit 1)

Introduction:

This ELA can be completed within one lesson. At the beginning of the lesson, students are asked to watch part of an ETV programme for junior secondary science. It is a programme in Cantonese on good practices in preventing laboratory accidents. After the ETV programme is shown, the lesson is conducted in English. Students are asked to complete a worksheet on laboratory safety rules and identify any unsafe practices in a picture found in their textbook, which shows some students carrying out laboratory activities.

As this ELA is most likely the first ELA implemented in S1, teachers can make use of the activity to make a general assessment of their students' language ability.

## Lesson Plan – Dos and don'ts: laboratory safety rules

Content objectives:	After completing the activity, students should be able to: <ul style="list-style-type: none"><li>• follow safety rules in carrying out experiments</li></ul>
Language objectives:	After completing the activity, students should be able to: <ul style="list-style-type: none"><li>• understand and use the English terms related to the laboratory safety rules (e.g., accidents, clean and tidy, instructions, safety goggles, fire escape route, Dos, don'ts); and</li><li>• use imperative sentences for writing the laboratory safety rules, e.g.,<ul style="list-style-type: none"><li>- <i>Always follow the instructions of your teacher.</i></li><li>- <i>Wear safety goggles while heating</i></li><li>- <i>Report all accidents to your teacher at once.</i></li><li>- <i>Tie up long hair and school ties.</i></li><li>- <i>Make sure that you know the fire escape route of the laboratory.</i></li><li>- <i>Keep the laboratory clean and tidy.</i></li><li>- <i>Wash your hands after doing an experiment and before leaving the laboratory.</i></li><li>- <i>Do not enter the laboratory when your teacher is not there.</i></li><li>- <i>Do not eat or drink in the laboratory.</i></li><li>- <i>Do not point the mouth of a test tube towards anyone while heating.</i></li><li>- <i>Do not do any experiments without your teacher's permission</i></li></ul></li></ul>
Activities:	<ol style="list-style-type: none"><li>1. 觀看教育電視節目(部分片段)及討論 — 全班 (8 分鐘)</li><li>2. Completing laboratory safety rules – pair work (17 minutes)</li><li>3. Finding the unsafe practices in a laboratory – pair work (15 minutes)</li></ol>
Materials:	教育電視【初中科學科】節目「實驗室安全」(可在「香港教育城」的教育資源庫網頁下載 <a href="http://resources.hkedcity.net/resource_detail.php?rid=782789192">http://resources.hkedcity.net/resource_detail.php?rid=782789192</a> ), Worksheet, Textbook

### Steps:

#### 觀看教育電視節目(部分片段)及討論 — 全班 (8 分鐘)

1. 教師指出學生必須養成良好的實驗操作習慣，才可以避免意外發生。
2. 教師播放「實驗室安全」16:15-19:34 部分。該部分介紹一些可以預防實驗意外的好習慣，並告誡學生不可擅自進入實驗室。
3. 教師向學生提問片段中所提及的實驗操作好習慣，及與學生討論若不遵行這些好習慣的後果。

#### **Completing laboratory safety rules – pair work (17 minutes)**

4. The teacher tells students that they are going to complete a worksheet on laboratory safety rules. This worksheet consists of two parts—what they should do and what they

should not do.

5. The teacher distributes the worksheet to the class and asks them to use the hints provided by the pictures to complete Part A.
6. The teacher should encourage students to discuss the answers with their neighbours.
7. The teacher checks the answers and explains any difficult words.
8. The teacher asks students to work in pairs using the hints provided by the pictures to complete Part B of the worksheet.
9. The teacher calls on some students to read out their answers and checks if they are correct. Alternative answers are accepted as long as the answers are correct in terms of content and grammar.

### **Finding unsafe practices in a laboratory – pair work (15 minutes)**

10. The teacher asks students to refer to the picture in their textbook, which is about potential dangers in a laboratory (i.e., 雅集—「綜合科學」第 18 至 19 頁；朗文—「互動科學」第 16 頁；牛津—「生活與科學」第 12 頁).
11. The teacher identifies one to two examples of unsafe practices shown in the picture and writes what these students should/ should not do based on the rules provided in the worksheet. For example:
  - A girl has her long hair flying over a Bunsen flame.  
The teacher can write on the blackboard: *She should tie up her long hair.*
  - Two boys are running in the laboratory.  
The teacher can write on the blackboard: *They should not run or play in the laboratory.*(Note: Students have learned the usage of *should* in their primary education.)
12. Students are then asked to work in pairs to identify the remaining unsafe practices in the picture and write down what they should/ should not do.
13. The teacher calls on some students to read out their answers and checks if they are correct. Some scenarios may have more than one correct answer.
14. If time allows, the teacher may display more pictures which show potential dangers in a laboratory using a visualizer, and ask some students to come out and circle the unsafe practice(s) in the picture and state what the student(s) in the picture should/ should not do.

(Pictures can be downloaded from the EDB website:

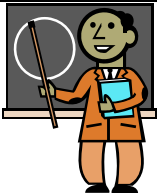






<http://cd1.edb.hkedcity.net/cd/science/laboratory/safety/Picquiz.pdf> )

## Laboratory Safety Rules 實驗室安全守則

### A. What should we do in a laboratory?

Complete the "Dos" part of the rules with the following words:







accidents 意外	clean and tidy	fire escape route 火警逃生路線	hands
instructions 指示	long hair	safety goggles 安全眼鏡	

	Dos
	1. Always follow the _____ of your teacher.
	2. Wear _____ while heating
	3. Report all _____ to your teacher at once.
	4. Tie up _____ and school ties.
	5. Make sure that you know the _____ of the laboratory.
	6. Keep the laboratory _____ .
	7. Wash your _____ after doing an experiment and before leaving the laboratory.

**B. What should we not do in a laboratory?**

Discuss with your partner and complete the “Don’ts” part of the rules.

You may put down more than one word in each blank.







	<b>Don’ts</b>
	1. Do not enter the laboratory when your teacher _____ _____.
	2. Do not _____ in the laboratory.
	3. Do not _____ in the laboratory.
	4. Do not throw _____ into the sink.
	5. Do not point the mouth of _____ towards anyone while heating.
	6. Do not do any _____ without your teacher’s permission (准許).

## Laboratory Safety Rules 實驗室安全守則

### A. What should we do in a laboratory?

Complete the “Dos” part of the rules with the following words:

accidents 意外	clean and tidy	fire escape route 火警逃生路線	hands
instructions 指示	long hair	safety goggles 安全眼鏡	







	Dos
	1. Always follow the <u>instructions</u> of your teacher.
	2. Wear <u>safety goggles</u> while heating
	3. Report all <u>accidents</u> to your teacher at once.
	4. Tie up <u>long hair</u> and school ties.
	5. Make sure that you know the <u>fire escape route</u> of the laboratory.
	6. Keep the laboratory <u>clean and tidy</u> .
	7. Wash your <u>hands</u> after doing an experiment and before leaving the laboratory.

Note: Any reasonable answers are accepted.

B. What should we not do in a laboratory?

Discuss with your partner and complete the “Don’ts” part of the rules.

You may put down more than one word in each blank.

	Don'ts
	1. Do not enter the laboratory when your teacher <u>is not there</u> .
	2. Do not <u>eat or drink</u> in the laboratory.
	3. Do not <u>play or fight</u> in the laboratory.
	4. Do not throw <u>solids/rubbish</u> into the sink.
	5. Do not point the mouth of <u>a test tube</u> towards anyone while heating.
	6. Do not do any <u>experiments</u> without your teacher's permission (准許).