

Classification

Level: S.3

Subject: Science

Topic: Knowledge Structure – **Classification**

Introduction

This set of ELA materials is designed to develop in students the ability to use English terms and sentences to express ideas related to ‘Classification’, which is an important pattern of knowledge * in science. Students are expected to learn how to use words or phrases, such as *type, a kind of, are categorized* etc. to construct sentences related to classification. Content knowledge required has been learned by students in previous science lessons through the Chinese medium. As students are already familiar with the subject matter, the learning of the English sentence patterns will be easier.

The ELA materials could be completed in an 80-minute lesson. In the first session, some English words, phrases and sentence patterns frequently used to illustrate classification are introduced to students, through fill-in-the-blanks and sentence writing activities. The second session is a reading task in which students are required to read a short paragraph about the classification of matter. Students are then required to complete a gap-filling exercise to assess the extent to which they have learned what has been introduced.

*Patterns of knowledge are those patterns through which knowledge is organized. They include Description, Sequence, Cause and Effect, Definition, Classification, Hypothesis, Exemplification and Evaluation. For more information, please refer to the attachments, which are taken from the sources below:

1. Zimmerman, F. (1989). *English for Science*. N.J. : Prentice Hall Regents.
2. *Teaching Ideas for Content Subject Teachers in English-medium Schools*, by EDB, <http://www.edb.gov.hk/index.aspx?nodeID=1918&langno=1>

Acknowledgement

This set of materials was produced jointly by the teachers of Christ College and the ELA research team.

ELA Lesson Plan – Classification

Description: The ELA materials aim to teach some commonly used English words, phrases and sentence patterns to express ideas related to classification. The subject content used is ‘food substance’s (Section 12.2 of the CDC Science syllabus) which students have already learned in Chinese. The materials start with a revision task which helps students to review the subject matter that they have learned. Then students are introduced to the vocabulary and sentence patterns concerned with classification. The last reading task requires students to work on a longer text about classification. It helps the teacher to know how much students understand what was learned in the previous tasks.

Content Objective: After completing the activity, students should be able to understand the concept of classification, and how food substances, matters and plants are classified

Language Objective: After completing the activity, students should be able to

- understand and use English terms related to classification (e.g., *type, kind, group, category, grouped, classified, categorized, a type of, a kind of, an example of, food substances, primary, protective, electrical conductivity, conductor, non-conductor, semiconductor, insulator, electronic devices*);
- understand and use the English expressions for discussing classifications of food substances, matters and plants, e.g.,
 - *Sugar is a type of carbohydrates.*
 - *Food substances can be divided into two groups. They are primary food substance and protective food substances.*
 - *Matters can be classified by its electrical conductivity into conductors, non-conductors, or semiconductors.*
 - *All metals, such as silver and copper, are good conductors.*
 - *Wood and glass are non-conductors or insulators.*
 - *Carbon and silicon are classified as semiconductors and are used in electronic devices.*
 - *There are two types of plants. They are flowering plants and non-flowering plants.*
 - *Plants can be divided into two groups. They are flowering plants and non-flowering plants.*

Material/Tools

- Worksheets – Task A, Task B, Task C
- Students must have their textbook in class

Steps:

Warm-up Exercise (Task A) – individual work with peer support (10-15 mins)

1. Organise students into groups of mixed ability groups. Encourage the students to help one

another.

2. Inform students that in this lesson they will learn how to use English to express ideas related to classification. Remind students that they have learned the subject matter in Chinese in previous lessons. They will learn how to use English to express what they have learned.
3. Distribute Task A.
4. Ask students to complete Items 1a and 2a in Chinese, and 1b and 2b in English. Items 1b and 2b require students to write down the answers using their own words. (See TN1)
5. Discuss the answers with the class. Use students' answers as examples to demonstrate proper use of English words/phrases. Students may be more engaged into the discussion when their contributions are recognized.

Classification–Vocabulary (Task B) – Individual work with peer support (25-30 mins)

6. Students stay in the same groups for Task B. (See TN2)
7. Go through the vocabulary in the 1st and 2nd columns (See TN3). Read aloud the vocabulary with students once or-/twice as necessary.
8. Ask students to complete Items 1 and 2 with the help of the tree diagram on food classification.
9. Go through the vocabulary in the 3rd column (see TN4). Read aloud the vocabulary with students once or-/twice as necessary.
10. Ask students to complete Item 3.
11. Check answers by asking students to read aloud their answers in complete sentences.
12. Refer to the tree diagram which shows the classification of food substances and explain how Items 2 or 3 can be expressed using a tree diagram.
13. Ask students to complete Items 4 and 5.
14. Check answers by asking students to read aloud their answers in complete sentences.
15. Explain the hierarchical relation shown in the tree diagram which illustrates the classification of plants.
16. Ask students to complete Items 6 and 7. Remind students that they may refer to the previous items as examples.
17. Check answers.

Classification–Reading (Task C) – Pair work (25-30 mins)

18. Ask students to read the paragraph silently, and underline any words/sentences that they do not understand.
19. Explain words that are unfamiliar to students.
20. Pick some students/pairs to read aloud the paragraph sentence by sentence, and highlights the important vocabulary (eg can be classified) on the board.
21. Ask students to work in pairs to complete Items a to i based on the paragraph.

22. Check answers.

Round up (5-10 mins)

23. Go back to Task A. Ask students to complete Items 1b and 2b (2nd trial).

24. Ask students to complete Item 3.

25. Check answers.

26. Summarize what has been learned. Highlight again the sentence patterns of the reading text.

Teacher's Notes

TN1: Walk around and give support to students whenever necessary. At the same time, note down some answers from students for explanation afterwards.

TN2: Remind students to refer to their textbook for relevant information if necessary.

TN3: Give examples of everyday English (eg. Apple is a kind of fruit).

TN4: Give examples of everyday English (eg. The students are arranged into 4 groups.).

0809 中三生物科英語增潤課程

Name: _____

Class: _____ ()

Task A: 熱身練習 (請參考生物書第 8 頁。)

1. a) 糖是一種 _____。

b) Please translate the above answer into English. (1st trial)

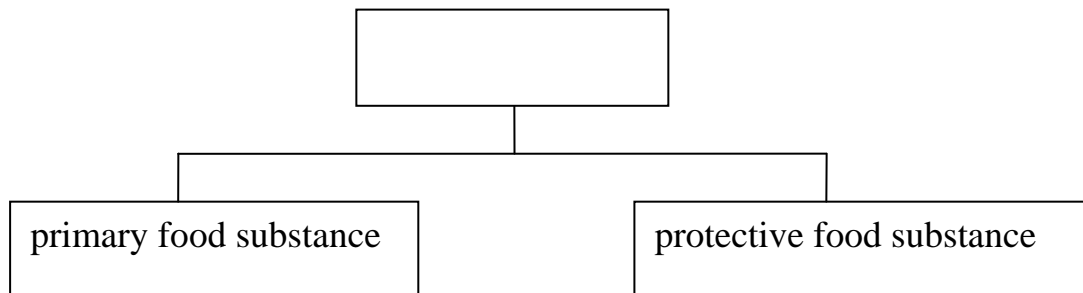
c) Please translate the answer to question 1 a) into English. (2nd trial)

2. a) 食物成份可分為兩大類，它們分別是 _____ 食物成份和 _____ 食物成份。

b) Please translate the above answer into English. (1st trial)

c) Please translate the answer to question 2 a) into English. (2nd trial)

3. 試把題 (2) 的資料填進以下圖中：



Form 3 Biology English Enhancement Exercise

Name: _____

Class: _____ ()

Task B: Classification – Vocabulary

Vocabulary

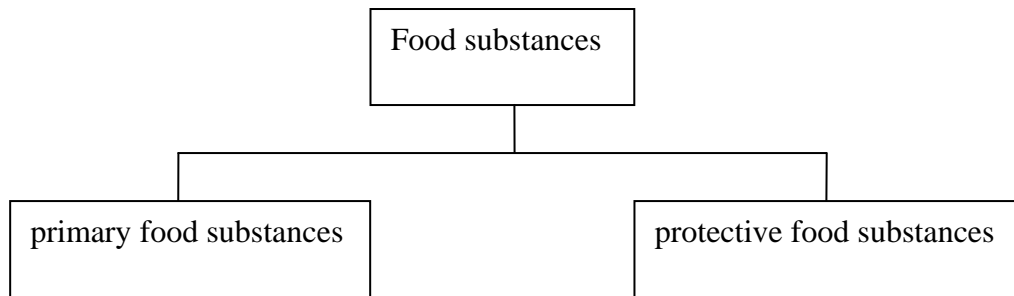
type(s)	a type of ...	is/are/can be grouped
kind(s)	a kind of ...	is/are/can be classified
group(s)	an example of ...	is/are/can be divided
category(ies)		is/are/can be categorized
		is/are/can be arranged

1. Sugar is { a _____ of } carbohydrate (碳水化合物).
 { a type of }
 { an example of }

2. There are two main { kinds } of food substances. They are primary food substances
and { } (成份) (基本)
(保護性) protective food substances.

3. Food substances { are } { grouped } into two main { types }
 { } { arranged }
 { } { categorized }

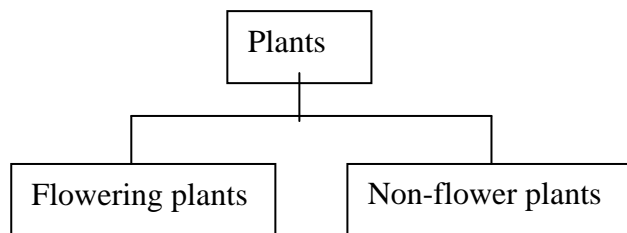
A tree diagram showing the classification of food substances



4. There are four { types } of primary food substances. They are _____ , _____ , _____ and _____ .

5. Primary food substances { are } { grouped } into four { _____ } { _____ } { _____ } { _____ } .

A tree diagram showing the classification of plants



6. How many types of plants are classified? What are the types?

There are _____

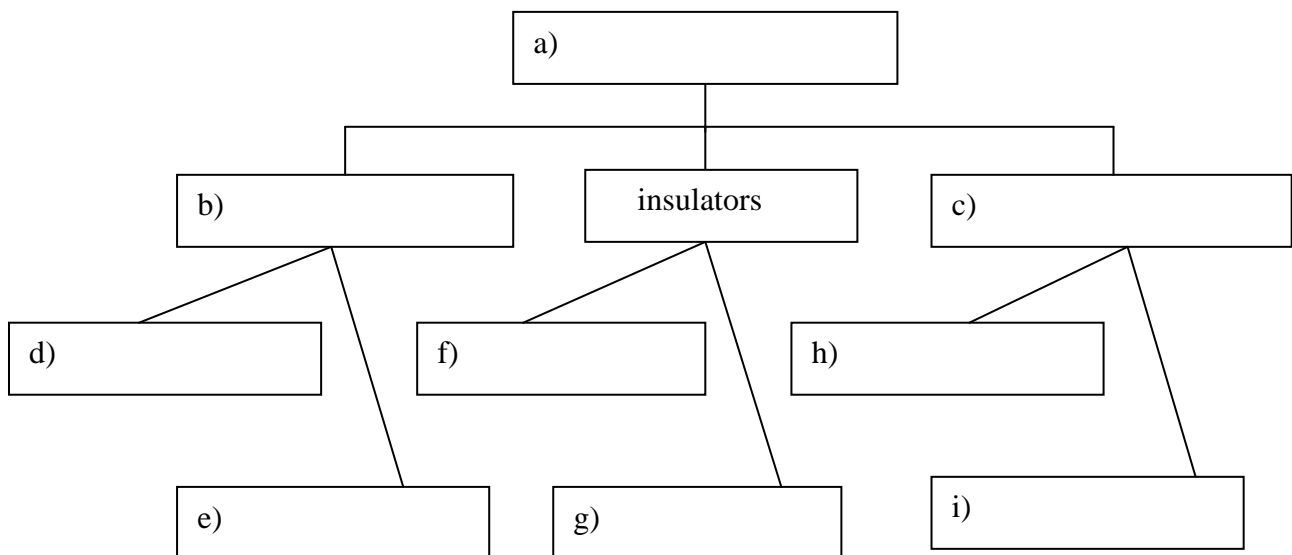
7. How many groups of plants can be divided? What are the groups?

Plants _____

Task C: Classification – Reading

Read the following paragraph. Use the information in the passage to complete the tree diagram.

Matters can be classified by its electrical conductivity (導電能力) into conductors, non-conductors, or semiconductors. All metals, such as silver and copper, are good conductors. Wood and glass are non-conductors, or insulators. A few substances, such as carbon and silicon, do not fall into either of the two groups. They are classified as semiconductors and are used in electronic devices.



Name: _____

Class: _____ ()

Task A Key: 熱身練習 (請參考生物書第 8 頁。)

1. a) 糖是一種 _____ (carbohydrate)。

b) Please translate the above answer into English. (1st trial)

c) Please translate the answer to question 1 a) into English. (2nd trial)

Sugar is a type of carbohydrates.

2. a) 食物成份可分為兩大類，它們分別是 _____ 食物成份 (primary food substance) 和 _____ 食物成份 (protective food substance)。

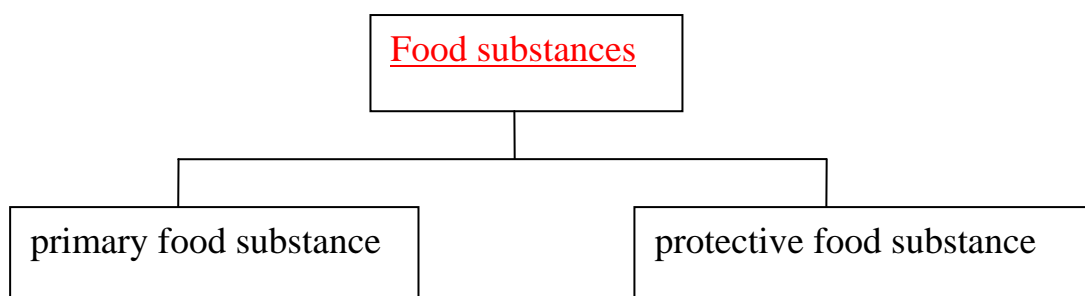
b) Please translate the above answer into English. (1st trial)

c) Please translate the answer to question 2 a) into English. (2nd trial)

Food substances can be divided into two groups. They are primary food

and protective food substance.

3. 試把題 (2) 的資料填進以下圖中：



Form 3 Biology
English Enhancement Exercise

Name: _____

Class: _____ ()

Task B Key: Classification – Vocabulary

Vocabulary

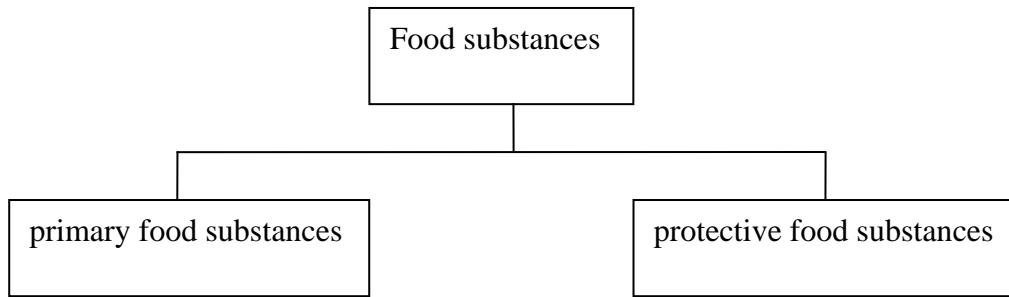
type(s)	a type of ...	is/are/can be grouped
kind(s)	a kind of ...	is/are/can be classified
group(s)	an example of ...	is/are/can be divided
category(ies)		is/are/can be categorized
		is/are/can be arranged

1. Sugar is { a kind of } carbohydrate (碳水化合物).
 { an example of }

2. There are two main { kinds } of food substances. They are primary food substances
 and { types } (成份) (基本) (保護性) protective food substances.

3. Food substances { are } into two main { types }
 { can be } { classified } { kinds }
 { divided } { groups }
 { categorized } { categories }

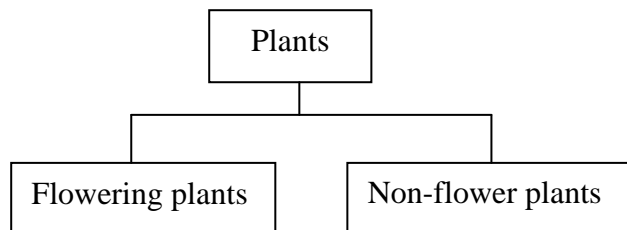
A tree diagram showing the classification of food substances



4. There are four { types } of primary food substances. They are carbohydrates,
proteins , fats and water .

5. Primary food substances { are } { can be } { grouped } { classified } { divided } into four { types } { kinds } { groups }

A tree diagram showing the classification of plants



6. How many types of plants are classified? What are the types?

There are two types of plants. They are flowering plants and non-flowering plants.

7. How many groups of plants are divided? What are the groups?

Plants can be divided into two groups. They are flowering plants and non-flowering plants.

Task C Key: Classification – Reading

Read the following paragraph. Use the information in the passage to complete the tree diagram.

Matters can be classified by its electrical conductivity (導電能力) into conductors, non-conductors, or semiconductors. All metals, such as silver and copper, are good conductors. Wood and glass are non-conductors, or insulators. A few substances, such as carbon and silicon, do not fall into either of the two groups. They are classified as semiconductors and are used in electronic devices.

