Food Substances and Balanced Diet

Level: S3

Topic: Food substances and balanced diet (Sections 12.2 – 12.3 of Unit 12)

Introduction:

These three ELAs are designed to help students consolidate their understanding of and ability to use common technical terms in the topic 'Food substances and balanced diet' (i.e. Sections 12.2 – 12.3 of Unit 12). Chinese has been used as the medium of instruction for this topic, and the teacher has introduced the English terms alongside the Chinese terms. Each ELA lasts for about 20 minutes and can be used together for one double lesson or spread out in three single lessons together with other relevant class activities.

The foci of the three ELAs are: spelling quizzes for ELAs 1 and 2 and matching activity for ELA3.

ELA1 Lesson Plan—Food Substances – Spelling Quiz (1)

Description:	This ELA covers Section 12.2 in the CDC science syllabus. In the ELA, the teacher revises the English terms with the class, providing time for them to master the spelling of the terms. A spelling quiz is then organized.
Content Objectives:	After completing the activity, students should be able to identify the main types of food substances in their daily food
Language Objectives:	After completing the activity, students should be able to: • understand and use the English terms related to this topic (e..g, *food substances, carbohydrates, contain, starch, glucose, sugar, fats, proteins, vitamins, minerals, calcium, iodine, dietary fibre*); • understand and use the correct English expressions for discussing key ideas about food substances, e.g., - *Carbohydrates contain starch and sugar.* - *Bread, rice and potatoes are rich in starch.* - *Starch can be broken down into glucose in our body.* - *Glucose can be readily used by our body to produce energy.* - *Cooking oils, butter and peanuts are rich in fats.* - *Meat, eggs and cheese are rich in proteins.* - *Our body only needs small amounts of vitamins.* - *Calcium, iron and iodine are examples of minerals.* - *Milk, cheese and green vegetables are rich in calcium.* - *Seafood and seaweed are rich in iodine.* - *Our body only needs small amounts of minerals.* - *Fruits, vegetables and grain products are rich in dietary fibre.*
Activities:	1. Revision of terms – whole class activity (8 min) 2. Spelling quiz – individual work (12 min)
Materials:	PowerPoint slides for revising the terms *(Food substances.ppt),* Worksheet for Spelling Quiz 1

Steps:

Revision of terms – whole class activity (8 min)

1. With the aid of PowerPoint slides, the teacher should revise with the class the concepts as well as the key terms related to Food Substances.

2. In the revision, the teacher should read out each English term and remind students to note the spelling. The teacher should also provide opportunities for students to pronounce the key terms in the vocabulary list.

Spelling quiz – individual work (12 min)

3. With the vocabulary list still displayed on the screen, students should be given five minutes to revise the spelling. Students are encouraged to work with their neighbours and help each other to memorize the spelling. (Depending on the situation, the time for this part of the activity could be extended.)

4. The teacher should ask students to complete, on their own, the worksheet for Spelling Quiz 1. Note that the first and last letter, and the number of letters in each word are given in the worksheet as hints for students.

5. The teacher should then check the answers by inviting some students to write their answers on the board. Students should then be asked to mark their own quiz papers with a red-ball pen.

6. The teacher can reward those students who have all the terms spelt correctly and ask students to revise the spellings at home.

Food substances 食物成份 – Spelling Quiz (1)

Fill in the blanks below with English terms using the hints provided in the pictures.

1. P__ __ __ __ __ __ s

6

2. F__ __ s

3. G__ __ __ __ __e

4

__ __ __ __ __ __ s

8

5. S__ __ __ __h

3

6. I__ __ __ __ e

10

7. V __ __ __ __ __ __ s

8. D__ __ __ __ __y f__ __ __e

11

9. C__ __ __ __ __ __ __ __ __ __ __s

2

10. C__ __ __ __ __m

Slides for revising the English terms

Food substances
食物成份

ELA Research Team, OUHK
February 2010

1

Carbohydrates

- ***Carbohydrates*** include starch and sugar.

2

Starch

- Bread, rice and potatoes are rich in ***starch***.
- This is broken down into glucose in our body.

3

Glucose

- ***Glucose*** is readily used by our body to produce energy.

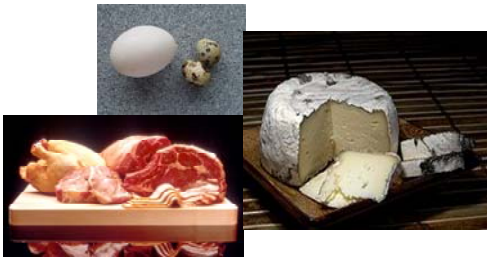
4

Fats

- Cooking oils, butter, and peanuts are rich in ***fats***.

5

Proteins



- Meat, eggs and cheese are rich in ***proteins***.

6

Vitamins

- Our body only needs small amounts of ***vitamins***.
- Milk, fish liver oil and fresh fruits are rich in ***vitamins***.

7

Minerals

- Our body only needs small amounts of ***minerals***.
- Calcium, iron and iodine are examples of ***minerals***.

8

Calcium

- Milk, cheese and green vegetables are rich in ***calcium***.

9

Iodine

- Seafood and seaweed are rich in ***iodine***.

10

Dietary fibre

- Fruits, vegetables and grain products (穀類製品) are rich in ***dietary fibre***.

11

Vocabulary

Carbohydrates 碳水化合物
• Starch 澱粉
• Glucose 葡萄糖
Fats 脂肪
Proteins 蛋白質
Vitamins 維生素
Minerals 礦物質
• Calcium 鈣
• Iodine 碘
Dietary fibre 食物纖維

12

LA2 Lesson Plan—Balanced Diet – Spelling Quiz (2)

Description: This ELA covers Section 12.3 in the CDC science syllabus. In this ELA, the teacher revises the English terms with the class, providing time for them to master the spelling of the terms. A spelling quiz is then organized.

Content Objectives: After completing the activity, students should be able to:

- explain that a food pyramid tells us the proportion of food types that we should take each day;
- find the energy value of a food from its food label;
- state the effects of under-eating and over-eating on our weight and health;
- explain the causes of obesity and anorexia.

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

- understand and use the English terms related to a balanced diet (e.g., *balanced diet, food pyramid, dairy products, grain products, proportion, energy value, calorie, obese, illness, obesity, anorexia*);
- understand and use the correct English expressions for discussing the key ideas, e.g.,
  - *A food pyramid shows us the right proportions of different kinds of food we should take.*
  - *Dairy products include milk, cheese and yoghurt. They are rich in protein, calcium and Vitamin D.*
  - *Grain products include bread, pasta and oatmeal. They are rich in carbohydrates.*
  - *The amount of energy stored in food is its energy value.*
  - *The unit for energy value is calorie.*
  - *When people weigh 30% more than the normal weight, they are said to be obese.*
  - *Obesity is caused by eating too much food that has high energy content.*
  - *Anorexia is an illness resulting in very low body weight.*
  - *People with anorexia fear becoming fat and do not eat or eat too little.*

Activities:

1. Revision of terms – whole class activity (8 min)
2. Spelling quiz – individual work (12 min)

Materials: PowerPoint slides for revising the terms *(Balanced diet.ppt)*, Worksheet for Spelling Quiz 2

Steps:

1. With the aid of PowerPoint slides, the teacher should revise with the class the concepts as well as the key English terms related to the topic Balanced Diet.

2. In the revision, the teacher should read out each English term and remind students to note the spelling. The teacher should also provide opportunities for students to pronounce the key terms in the vocabulary list.

Spelling quiz – individual work (12 min)

3. With the vocabulary list still displayed on the screen, students should be given five minutes to revise the spelling. Students should be encouraged to work with their neighbours and help each other to memorize the spelling. (Depending on the situation, the time for this part of the activity could be extended.)

4. The teacher should ask students to complete the worksheet for Spelling Quiz 2 on their own. Note that one or more letters, and the number of letters in each word are given in the worksheet as hints for students.

5. The teacher should then check the answers by inviting some students to write their answers on the board. Students should then be asked to mark their own quiz papers with a red-ball pen.

6. The teacher can reward those students who have all the terms spelt correctly and ask students to revise the spellings at home.

Balanced diet 均衡膳食 – Spelling Quiz (2)

Fill in the blanks below with English terms using the hints provided in the pictures.

1. D__ __ __ __ p__ __ __ __ __ __s

2. F__ __ __ p__ __ __ __ __ __

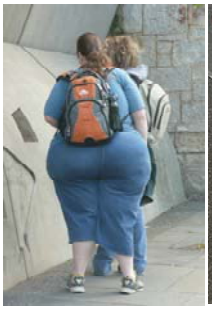
Sample label for Macaroni & Cheese

3. E __ __ __ __ __ v __ __ __ __

The unit is c __ __ __ __ __ __

4. G__ __ __ __ p__ __ __ __ __ __ s

5. O__ __ __ __ __ __



6. A __ __ __ __ __ __ __

Slides for revising the English terms

Balanced diet
均衡膳食

ELA Research Team, OUHK

February 2010

1

Food pyramid

- A ***food pyramid*** shows us the right proportions (比例) of different kinds of food we should take.

2

Dairy products

- ***Dairy products*** include milk, cheese and yoghurt.
- They are rich in proteins, calcium and vitamin D.

3

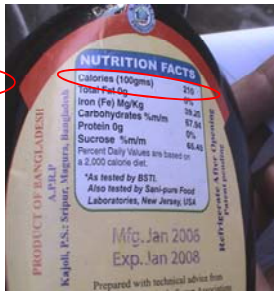
Grain products

- ***Grain products*** include bread, pasta (義大利通心粉, 細麵條等) and oatmeal.
- They are rich in carbohydrates.

4

Energy value (in calorie)

Sample label for Macaroni & Cheese



- The amount of energy stored in food is its ***energy value***.
- The unit for energy value is ***calorie***.

5

Obesity

- When people weigh 30% more than the normal weight, they are said to be ***obese***.
- ***Obesity*** is caused by eating too much food that has a high energy content.

6

Anorexia

- ***Anorexia*** is an illness resulting in very low body weight.
- ***People with anorexia*** fear becoming fat and do not eat or eat too little.

7

Vocabulary

- Food pyramid 食物金字塔
  - Dairy products 奶類製品
  - Grain products 穀類製品
- Energy value 能量值
  - Calorie 卡路里
- Obesity 癡肥
- Anorexia 厭食症

8

ELA3 Lesson Plan—Food Substances and Balanced Diet – Matching Quiz

Description:	In the previous two ELAs, worksheets with pictures and spelling hints were used for the spelling quizzes. Pictures played a more central role in providing guidance to students. In this ELA, the focus shifts to verbal explanations. The teacher uses the same set of slides for the revision. After that, students are asked to complete a quiz by matching the English terms with verbal explanations.
Content objectives:	After completing the activity, students should be able to: ● identify the main types of food substances in their daily food; ● explain that a food pyramid tells us the proportion of food types that we should take each day; ● find the energy value of a food from its food label; ● state the effects of under-eating and over-eating on our weight and health; ● explain the causes of obesity and anorexia.
Language objectives:	After completing the activity, students should be able to: ● understand and use the English terms related to food substances and balanced diets (e.g., *carbohydrates, starch, glucose, fats, proteins, vitamins, minerals, calcium, iodine, dietary fibre, food pyramid, dairy products, grain products, energy value, calorie, obesity,* and *anorexia)*; ● understand and use the correct English expressions for discussing the key ideas, e.g., - *Carbohydrates contain starch and sugar.* - *Bread, rice and potatoes are rich in starch.* - *Starch can be broken down into glucose in our body.* - *Glucose can be readily used by our body to produce energy.* - *Cooking oils, butter and peanuts are rich in fats.* - *Meat, eggs and cheese are rich in proteins.* - *Our body only needs small amounts of vitamins.* - *Calcium, iron and iodine are examples of minerals.* - *Milk, cheese and green vegetables are rich in calcium.* - *Seafood and seaweed are rich in iodine.* - *Our body only needs small amounts of minerals.* - *Fruits, vegetables and grain products are rich in dietary fibre.* - *A food pyramid shows us the right proportions of different kinds of food we should take.* - *Dairy products include milk, cheese and yoghurt. They are rich in protein, calcium and Vitamin D.* - *Grain products include bread, pasta and oatmeal. They are rich in carbohydrates.* - *The amount of energy stored in food is its energy value.*

- *The unit for energy value is calorie.*
- *When people weigh 30% more than the normal weight, they are said to be obese.*
- *Obesity is caused by eating too much food that has high energy content.*
- *Anorexia is an illness resulting in very low body weight.*
- *People with anorexia fear becoming fat and do not eat or eat too little.*

Activities:	1. Revision of terms – whole class activity (10 min) 2. Matching Quiz – individual work (10 min)
Materials:	PowerPoint slides for revising the terms *(Food substances.ppt & Balanced diet.ppt)*, Worksheet for the Matching Quiz

Steps:

Revision of terms – whole class activity (8 min)

1. With the aid of PowerPoint slides, the teacher should revise with the class the concepts as well as the key terms related to the topics Food Substances and Balanced Diet. The teacher should draw students' attention to the verbal explanations given in the slides and explain any words which students are unfamiliar with.

Matching quiz – individual work (10 min)

2. The teacher should ask students to complete the Matching Quiz worksheet, on their own.

3. The teacher should then check the answers and explain any items that students have difficulty with. Students should then be asked to mark their own work with a red-ball pen.

4. The teacher can reward those students who have completed all the items correctly and ask students to revise the worksheet at home.

Food Substances and Balanced Diet—Matching Quiz

Match the terms in Column A with the explanations in Column B by writing the letters a to q in the brackets next to the items in Column A.

	Column A			*Column B*
1.	anorexia	( )	a.	Cooking oils, butter, and peanuts are rich in this substance.
2.	calcium	( )	b.	Seafood and seaweed are rich in this substance.
3.	calorie	( )	c.	Bread, rice and potatoes are rich in this substance. It is broken down into glucose in our body.
4.	carbohydrates	( )	d.	The unit for energy value
5.	dairy products	( )	e.	An illness resulting in very low body weight
6.	dietary fibre	( )	f.	Include starch and sugar
7.	energy value	( )	g.	Include bread, pasta and oatmeal, which are rich in carbohydrates
8.	fats	( )	h.	Readily used by our body to produce energy
9.	food pyramid	( )	i.	The amount of energy stored in food
10.	glucose	( )	j.	Fruits, vegetables and grain products are rich in this substance.
11.	grain products	( )	k.	Caused by eating too much food that has a high energy content
12.	iodine	( )	l.	Include milk, cheese and yoghurt, which are rich in proteins, calcium and vitamin D
13.	minerals	( )	m	Meat, eggs and cheese are rich in this substance.
14.	obesity	( )	n.	Our body only needs this substance in small amounts. Milk, fish liver oil and fresh fruits are rich in this substance.
15.	proteins	( )	o.	Shows us the right proportions of different kinds of food we should take
16.	starch	( )	p.	Milk, cheese and green vegetables are rich in this substance.
17.	vitamins	( )	q.	Include calcium, iron and iodine

Answers

Food Substances and Balanced Diet—Matching Quiz

Match the terms in Column A with the explanations in Column B by writing the letters a to q in the brackets next to the items in Column A.

	Column A			*Column B*
1.	anorexia	(*e*)	a.	Cooking oils, butter, and peanuts are rich in this substance.
2.	calcium	(*p*)	b.	Seafood and seaweed are rich in this substance.
3.	calorie	(*d*)	c.	Bread, rice and potatoes are rich in this substance. It is broken down into glucose in our body.
4.	carbohydrates	(*f*)	d.	The unit for energy value
5.	dairy products	(*l*)	e.	An illness resulting in very low body weight
6.	dietary fibre	(*j*)	f.	Include starch and sugar
7.	energy value	(*i*)	g.	Include bread, pasta and oatmeal, which are rich in carbohydrates
8.	fats	(*a*)	h.	Readily used by our body to produce energy
9.	food pyramid	(*o*)	i.	The amount of energy stored in food
10.	glucose	(*h*)	j.	Fruits, vegetables and grain products are rich in this substance.
11.	grain products	(*g*)	k.	Caused by eating too much food that has a high energy content
12.	iodine	(*b*)	l.	Include milk, cheese and yoghurt, which are rich in proteins, calcium and vitamin D
13.	minerals	(*q*)	m	Meat, eggs and cheese are rich in this substance.
14.	obesity	(*k*)	n.	Our body only needs the substance in small amounts. Milk, fish liver oil and fresh fruits are rich in the substance.
15.	proteins	(*m*)	o.	Shows us the right proportions of different kinds of food we should take
16.	starch	(*c*)	p.	Milk, cheese and green vegetables are rich in this substance.
17.	vitamins	(*n*)	q.	Include calcium, iron and iodine

PowerPoint Slides: Food Substances

Food substances
食物成份

ELA Research Team, OUHK
February 2010

1

Carbohydrates

- ***Carbohydrates*** include starch and sugar.

2

Starch

- Bread, rice and potatoes are rich in ***starch***.
- It is broken down into glucose in our body.

3

Glucose

- ***Glucose*** is readily used by our body to produce energy.

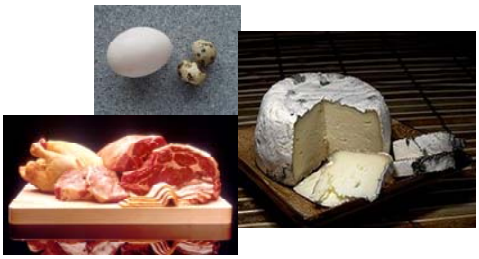
4

Fats

- Cooking oils, butter, and peanuts are rich in ***fats***.

5

Proteins



- Meat, eggs and cheese are rich in ***proteins***.

6

Vitamins

- Our body only needs small amounts of ***vitamins***.
- Milk, fish liver oil and fresh fruits are rich in ***vitamins***.

7

Minerals

- Our body only needs small amounts of ***minerals***.
- Calcium, iron and iodine are examples of ***minerals***.

8

Calcium

- Milk, cheese and green vegetables are rich in ***calcium***.

9

Iodine

- Seafood and seaweed are rich in ***iodine***.

10

Dietary fibre

- Fruits, vegetables and grain products (穀類製品) are rich in ***dietary fibre***.

11

Vocabulary

Carbohydrates 碳水化合物
• Starch 澱粉
• Glucose 葡萄糖
Fats 脂肪
Proteins 蛋白質
Vitamins 維生素
Minerals 礦物質
• Calcium 鈣
• Iodine 碘
Dietary fibre 食物纖維

12

PowerPoint Slides: Balanced Diet

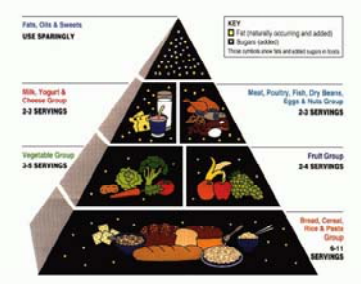
Balanced diet
均衡膳食

ELA Research Team, OUHK

February 2010

1

Food pyramid



- A ***food pyramid*** shows us the right proportions (比例) of different kinds of food we should take.

2

Dairy products

- ***Dairy products*** include milk, cheese and yoghurt.
- They are rich in proteins, calcium and vitamin D.

3

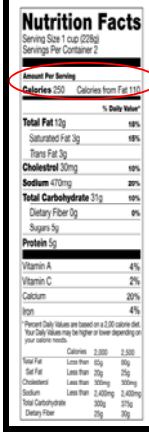
Grain products

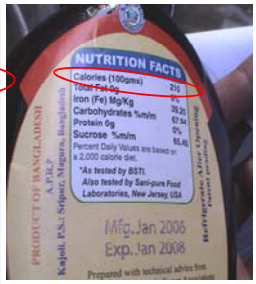
- ***Grain products*** include bread, pasta (義大利通心粉, 細麵條等) and oatmeal.
- They are rich in carbohydrates.

4

Energy value (in calorie)

Sample label for Macaroni & Cheese





- The amount of energy stored in food is its ***energy value***.
- The unit for energy value is ***calorie***.

5

Obesity

- When people weigh 30% more than the normal weight, they are said to be ***obese***.
- ***Obesity*** is caused by eating too much food that has a high energy content.

6

Anorexia

- ***Anorexia*** is an illness resulting in very low body weight.
- ***People with anorexia*** fear becoming fat and do not eat or eat too little.

7

Vocabulary

- Food pyramid 食物金字塔
  - Dairy products 奶類製品
  - Grain products 穀類製品
- Energy value 能量值
  - Calorie 卡路里
- Obesity 癡肥
- Anorexia 厭食症

8