

# 高中英語文領域高層次思考 教學提問與紙筆測驗設計示例

An Example of Enhancing Higher-order  
Thinking Abilities through Inquiry and  
Assessing through Written-tests  
in Senior High School English Class



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# Higher-order thinking in the General Curriculum Guidelines of 12-Year Basic Education



# Why? Higher-order thinking in the General Curriculum Guidelines of 12-Year Basic Education

「十二年國民基本教育課程綱要總綱」中的高層次思考

## 參、課程目標

### 一、啟發生命潛能

啟迪學習的動機，培養好奇心、**探索力**、**思考力**、**判斷力**與行動力，願意以積極的態度、持續的動力進行探索與學習；……

## 肆、核心素養

A 自主行動	A2 系統思考與解決問題	具備 <u>問題理解、思辨分析、推理批判的系統思考與後設思考素養</u> ，並能行動與反思，以有效處理及解決生活、生命問題。	E-A2 具備 <u>探索問題的思考能力</u> ，並透過體驗與實踐處理日常生活問題。	J-A2 具備理解情境全貌，並做 <u>獨立思考與分析</u> 的知能，運用適當的策略處理解決生活及生命議題。	U-A2 具備 <u>系統思考、分析與探索的素養</u> ，深化 <u>後設思考</u> ，並積極面對挑戰以解決人生的各種問題。
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<p><b>B2 科技 資訊 與 媒體 素養</b></p>	<p>具備善用科技、資訊與各類媒體之能力，培養相關倫理及媒體識讀的素養，俾能<u>分析、思辨、批判</u>人與科技、資訊及媒體之關係。</p>	<p>E-B2 具備科技與資訊應用的基本素養，並理解各類媒體內容的意義與影響。</p>	<p>J-B2 具備善用科技、資訊與媒體以增進學習的素養，並<u>察覺、思辨</u>人與科技、資訊、媒體的互動關係。</p>	<p>U-B2 具備適當運用科技、資訊與媒體之素養，進行各類媒體識讀與<u>批判</u>，並能<u>反思</u>科技、資訊與媒體倫理的議題。</p>
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## 柒、實施要點

### 二、教學實施

7. 為增進學生學習成效，具備自主學習和終身學習能力，教師應引導學生學習如何學習，包括動機策略、**一般性學習策略、領域/群科/學程/科目特定的學習策略、思考策略**，以及後設認知策略等。



Why?

# Higher-order thinking in the English Curriculum Guidelines

「十二年國民基本教育課程綱要總綱」英語文領綱中的高層次思考

## 壹、基本理念

語文教育旨在培養學生語言溝通與**理性思辨**的知能，奠定適性發展與終身學習的基礎，幫助學生了解並探究不同的文化與價值觀，促進族群互動與相互理解。……

## 貳、課程目標

五、培養以英語文進行邏輯思考、分析、整合與創新的能力。

## 肆、核心素養

<p>A2 系統思考 與 解決問題</p>	<p>具備問題理解、<u>思辨分析</u>、<u>推理批判</u>的系統思考與後設思考素養，並能行動與<u>反思</u>，以有效處理及解決生活、生命問題。</p>	<p>英-E-A2 具備理解簡易英語文訊息的能力，能運用<u>基本邏輯思考策略</u>提升學習效能。</p>	<p>英-J-A2 具備系統性理解與推演的能力，能<u>釐清文本訊息間的關係進行推論</u>，並能經由<u>訊息的比較</u>，對國內外文化的異同有初步的了解。</p>	<p>英S-U-A2 具備系統性思考與後設思考能力，善用各種策略，對<u>文本訊息</u>、<u>國內外文化</u>深入理解，<u>釐清訊息本質與真偽</u>，提升學習效率與品質，應用所學解決問題。</p>
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<p>B2 科技資訊 與 媒體素養</p>	<p>具備善用科技、資訊與各類媒體之能力，培養相關倫理及媒體識讀的素養，俾能<u>分析</u>、<u>思辨</u>、<u>批判</u>人與科技、資訊及媒體之關係。</p>	<p>英-E-B2 具備使用各種資訊科技媒材進行自我學習的能力，以增進英語文聽說讀寫綜合應用能力及文化習俗之理解。</p>	<p>英-J-B2 具備運用各類資訊檢索工具蒐集、<u>整理英語文資料</u>的能力，以擴展學習素材與範疇、提升學習效果，同時養成資訊倫理素養。</p>	<p>英 S-U-B2 具備將資訊科技與各類媒體所提供的英語文素材，進行<u>資訊整合</u>的能力，<u>激發省思及批判</u>媒體倫理與社會議題的能力。</p>
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Why?

# Higher-order thinking in the Competency-based Assessment

素養導向評量中的高層次思考

國教院(107)「素養導向「紙筆測驗」要素與範例試題」

素養導向紙筆測驗兩項要素之一：

(一) 佈題強調真實的情境與真實的問題：以往的紙筆測驗多著墨於知識和理解層次的評量，素養導向則較強調應用知識與技能解決真實情境脈絡中的問題。除了真實脈絡之外，素養導向試題應盡可能接近真實世界（包含日常生活情境或是學術探究情境）中會問的問題。





Competency-based  
instruction: Enhancing  
higher-order thinking  
abilities through inquiry



How?

# 素養導向教學的原則

十二年國民基本教育課程總綱宣講（教育部國教署）





How?

# 英語文領域素養導向教學的原則

整合知識、  
技能與態  
度

情境化、  
脈絡化的  
學習

學習歷程、  
方法與策  
略

實踐力  
行的表  
現

學習網  
領重點

真實語境  
&課程脈  
絡

高層次思  
考探究

符合情境  
的表現任  
務

Process of inquiry



# How?

## Competency-based English teaching should:

- Focus on the nature of language
- Guide students to explore with higher-order thinking
- Provide students with authentic contexts





Competency-based  
assessment: Assessing  
higher-order thinking  
abilities



How?

## 素養導向評量的要素

「素養導向『紙筆測驗』要素與範例試題」(國教院)

### 一、強調真實的情境 與真實的問題

1. 不同於以往紙筆測驗多著墨於知識和理解層次的評量
2. 更強調應用知識與技能實情境脈絡中的問題
3. 應盡可能接近真實世界(包含日常生活情境、學術探究情境以及學習脈絡情境)中會問的問題

高層次  
思考

### 二、強調總綱跨領域核心素養 或領綱學科本質與學習重點

1. 跨領域核心素養係指總綱中之符號運用、多元表徵、資訊媒體識讀與運用、系統思考等跨領域的共同核心能力，並非專指跨領域的題材。
2. 單一領域的素養導向評量強調結合學習表現與學習內容、並應用於理解或解決真實情境的問題。



# Higher-order thinking in the Learning Performance of English Curriculum Guidelines of 12-Year Basic Education



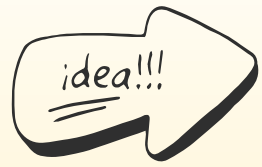
What?

# Higher-order thinking in the English Curriculum Guidelines

學習表現
1.聽 2.說 3.讀 4.寫 5.綜合
6.學習興趣與態度
7.學習方法與策略
8.文化理解
9.邏輯思考、判斷與創造力

學習內容
A1.語言知識-字母 A2.語言知識-語音 A3.語言知識-字詞 A4.語言知識-句構 A5.語言知識-篇章
B.溝通功能
C.文化與習俗
D.思考能力





What?

# Higher-order thinking in the Learning performance of English Curriculum Guidelines

英文領綱 學習表現 (以學習表現第三、四、五、八、九項為主)	Bloom's Taxonomy
<p>*4-V-8 能依提示寫出符合主題、語意連貫且組織完整的段落或說明。</p> <p>5-V-6 能看懂並填寫常用的表格。</p> <p>5-V-5 能以自己的話轉述一段談話或簡短故事。</p> <p>5-V-10 能讀懂故事及短文，並以簡短的句子述說或寫出主旨或大意。</p> <p>*5-V-12 能以適切的英語文說出或寫出談話或短文的摘要。</p> <p>9-V-5 能將習得的原則類推到新情境中，解決問題。</p>	Apply



What?

# Higher-order thinking in the Learning performance of English Curriculum Guidelines

英文領綱 學習表現 (以第三、四、五、八、九項為主)	Bloom's Taxonomy
<p>3-V-7 能了解短文、書信的內容及文本結構。</p> <p>3-V-12 能利用字詞結構、上下文意、句型結構及篇章組織推測字詞意義或句子內容。</p> <p>3-V-13 能熟悉各種閱讀技巧 (如擷取大意、推敲文意、預測後續文意)，進行快速閱讀並有效應用於廣泛閱讀中。</p> <p>3-V-14 能從圖畫、圖示或上下文，猜測字義或推論文意。</p> <p>3-V-15 能分析及判斷文章內容，了解敘述者的觀點、態度及寫作目的。</p> <p>8-V-2 能比較國內外文化的異同，並進一步了解其緣由。</p> <p>9-V-1 能把多項訊息加以比較、歸類、排序。</p> <p>9-V-2 能根據上下文語境釐清兩個訊息間的關係。</p> <p>9-V-3 能依上下文分辨客觀事實與主觀意見。</p> <p>9-V-4 能分析、歸納多項訊息的共通點或結論。</p> <p>9-V-6 能綜合現有訊息，預測可能的發展。</p>	Analyze



What?

# Higher-order thinking in the Learning performance of English Curriculum Guidelines

英文領綱 學習表現 (以學習表現第三、四、五、八、九項為主)	Bloom's Taxonomy
<p>4-V-6 能依提示寫出具有情節發展及細節描述的故事或個人經驗。</p> <p>5-V-11 能看懂日常書信、簡訊、電子郵件、留言和賀卡、邀請卡等，並能以口語或書面作回應。</p> <p>*5-V-13 能了解及欣賞不同體裁、不同主題之文章，並據以發表心得或感想。</p> <p>9-V-7 能評估不同資訊，提出合理的判斷或建議。</p> <p>9-V-8 能整合資訊，合理規劃並發揮創意完成任務。</p>	Evaluate  Create



An example of  
enhancing higher-order  
thinking abilities  
through inquiry in  
senior high school  
English class



## Inquiring questions to guide higher-order thinking

Teaching material: 三民(車)版 B4L2 “The truth about fake news”

### Learning objectives:

Students will be able to: ① have local and global comprehension of the text using important reading strategies (guessing, inferring, integrating, etc.), ② identify the text type and understand the text structure through analyzing the reading material, ③ tell the author's writing purpose and attitude toward the topic discussed, ④ distinguish facts from opinions, and ⑤ apply all these learned to a new context.

The learning objectives meet the following learning performance:

3-V-7 能了解短文、書信的內容及文本結構。

3-V-12 能利用字詞結構、上下文意、句型結構及篇章組織推測字詞意義或句子內容。

3-V-15 能分析及判斷文章內容，了解敘述者的觀點、態度及寫作目的。

9-V-3 能依上下文分辨客觀事實與主觀意見。

9-V-5 能將習得的原則類推到新情境中，解決問題。



## Inquiring questions to guide higher-order thinking

Teaching material: 三民(車)版 B4L2 “The truth about fake news”

1. The teacher mainly adopts an inquiry-based, learner-centered approach with a teacher-as-mentor model, which involves frequent group discussion, whole class discussion, and some lecture. In every period Ss work in groups of four with me walking around to help and check.
2. Text types and text structures are discussed in every lesson.

Teaching about  
text types & text  
structure:

✍ Text types

4 major text types: narrative, description/definition, discussion/exposition, argumentation

✍ This reading is a(n) \_\_\_\_\_.



# Inquiring questions to guide higher-order thinking

Teaching material: 三民(車)版 B4L2 “The truth about fake news”

Teaching about text types & text structure:


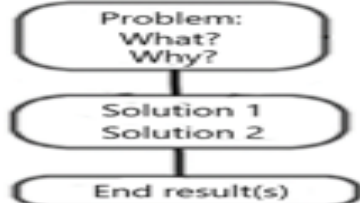

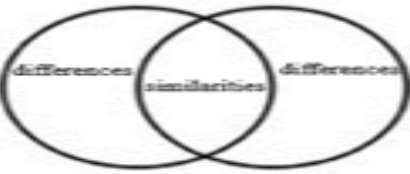
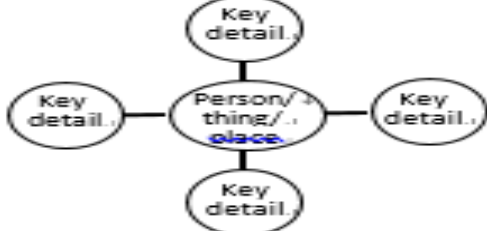
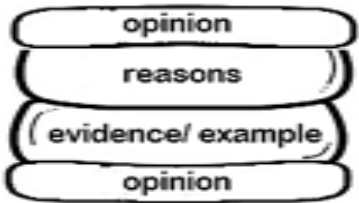
## Types of Exposition

Here are six common types of exposition. Please match them with pictures 1 to 6 and fill in the blanks.

- Problem and solution
- Compare and contrast

- Cause and effect
- Opinion writing

- Description/definition
- Sequence/order

1. 	2. 	3. 
4. 	5. 	6. 

This reading is a(n) \_\_\_\_\_.



## Inquiring questions to guide higher-order thinking

Teaching material: 三民(車)版 B4L2 “The truth about fake news”

Structure of this text: Please use a concept map (charts, a diagram, graphic organizer, etc.) to show the structure of this text.

definition of fake news  
& why it is spread so  
fast (para. )

Teaching about  
text types & text  
structure:

Types of supporting details

1. facts
2. statistics
3. expert opinions
4. research
5. explanation
6. reasons
7. personal experience/observation

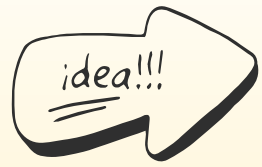
In this reading, what types of supporting details are used in each paragraph? Copy down the phrases/sentences that best support your answers from the reading and explain to your group members.

\_\_\_\_\_ in para. 4:

\_\_\_\_\_ in para. 5:

\_\_\_\_\_ in para. 6:






## Inquiring questions to guide higher-order thinking

Teaching material: 三民(車)版 B4L2 “The truth about fake news”

Teaching about  
Distinguishing facts  
from opinions:



Fact vs Opinion



**Fact**  
*A fact is a statement which can be \_\_\_\_\_.*

**Opinion**  
*An opinion is the way one person thinks. People may \_\_\_\_\_ with an opinion.*

★ It is \_\_\_\_\_ to put a fact and an opinion in one sentence. →  
\_\_\_\_\_

★ To persuade others, you have to support your opinion with \_\_\_\_\_,  
\_\_\_\_\_, or \_\_\_\_\_.



## Inquiring questions to guide higher-order thinking

Teaching material: 三民(車)版 B4L2 “The truth about fake news”

✎ Identify each statement as a fact (F), an opinion (O), or an opinion in disguise (F+O).

- \_\_\_\_\_ 8Mel Gibson’s movie Signs surprisingly made over \$14 million.
- \_\_\_\_\_ My friend Jacky bought an expensive supercar, Ferrari F40.
- \_\_\_\_\_ Michael Jordan has a career average of 30.4 points per game.
- \_\_\_\_\_ Chicken has more protein than carrots.
- \_\_\_\_\_ Gwen is the most beautiful and elegant teacher in WFSH.
- \_\_\_\_\_ The more money someone has, the more successful they are.
- \_\_\_\_\_ People should not be allowed to talk on cell phones in a movie theater.
- \_\_\_\_\_ Everybody knows that this restaurant serves the best bagels and pizza.
- \_\_\_\_\_ Michael Jordan is the greatest basketball player of all time.
- \_\_\_\_\_ Wolves eat cute little animals, like bunnies, sheep and pigs.
- \_\_\_\_\_ Because the alligator has been listed as an endangered species since 1976, killing alligators for their skins should be against the law.
- \_\_\_\_\_ The price of gas has grown to become too expensive.
- \_\_\_\_\_ McDonalds sells more hamburgers than any other restaurant chain in the world.
- \_\_\_\_\_ Lord of the Rings: Return of the King won eleven Oscars Academy Awards.

✎ Exercise

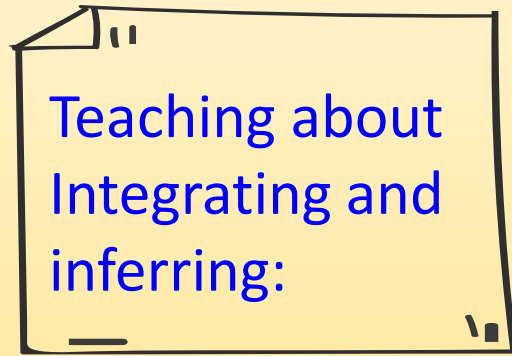
Read the given news editorial on Covid-19 vaccine policies, and find out sentences that state facts.

Teaching about  
Distinguishing facts  
from opinions:



## Inquiring questions to guide higher-order thinking

Teaching material: 三民(車)版 B4L3 “The woman that never dies”



### Paragraph 1~2

1. In these paragraphs, the author tells us some background information about the woman in the photo, including:

① her racial identity (she was a \_\_\_\_\_),

② \_\_\_\_\_ when the photo was taken in late 1940s

③ she was born approximately in \_\_\_\_\_, aged \_\_\_\_\_.

④ she died in \_\_\_\_\_, aged \_\_\_\_\_.

⑤ \_\_\_\_\_,

⑥ \_\_\_\_\_,

2. “HeLa” is a code name referring to \_\_\_\_\_.

3. How does the writer start the story? Why is the real name of the woman left until last?

4. How were Henrietta’s cells used?

Her cells were \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

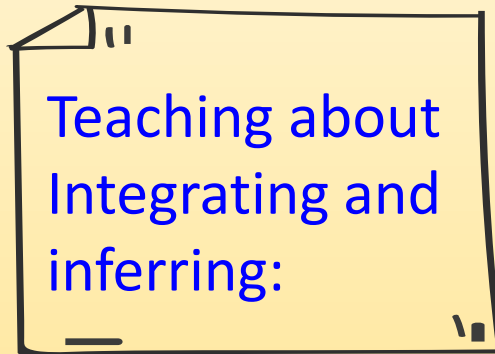
5. What contribution have her cells made? Answer with examples.

They have contributed to \_\_\_\_\_.



## Inquiring questions to guide higher-order thinking

Teaching material: 三民(車)版 B4L3 “The woman that never dies”



### Paragraph 3

6. Read the sentences and see what you find:

(line 32) “If we could pile all HeLa cells ever grown onto a scale, they’d weigh more than 50 billion kilograms.”

(line 35) “If we could lay all HeLa cells every grown end-to-end, they’d wrap around the earth at least three times...”

Are the two things likely to happen?

7. What is the writer’s purpose of using these numbers?

### Paragraph 4

8. Why did Henrietta’s cells become the first immortal human cells ever grown in a lab?

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## Inquiring questions to guide higher-order thinking

Teaching material: 三民(車)版 B4L3 “The woman that never dies”

### Paragraph 5

9. The writer quoted from two magazines, \_\_\_\_\_ and \_\_\_\_\_. According to these, how did the husband and family feel about the fact that Henrietta’s cells were used without telling them?
10. Why does the writer quote from the two magazines?

### Paragraph 6

11. What is the author’s attitude toward Henrietta and her family? Find out the sentences that support your opinion.
- 

Teaching about  
Integrating and  
inferring:



An example of  
assessing higher-order  
thinking abilities  
through written tests  
in senior high school  
English class



## Written test questions to assess higher-order thinking abilities

The objectives of the following written test questions:

These questions aim to assess students' abilities in a new given context to: ① have local and global comprehension of the text using important reading strategies (guessing, inferring, integrating, etc.), ② identify the text type and understand the text structure through analyzing the reading material, ③ tell the author's writing purpose and attitude toward the topic discussed, ④ distinguish facts from opinions, and ⑤ apply all these learned to a new context.



## Written test questions to assess higher-order thinking abilities

The following test questions were included in an exam taken by all 11<sup>th</sup> graders at the case study school.

### V. Reading Comprehension (14%)

A type of Internet video that has become popular in recent years is mukbang. Originating in South Korea, mukbang involves a host, or mukbanger, eating a meal in front of a camera. The word mukbang is a mix of the Korean words “meokneun,” which means “eating,” and bangsong, which means “broadcast.” Often, the amount of food is way beyond what a person would normally eat in a single meal. What exactly is the appeal of watching people eat? One answer could be the social nature of eating in South Korea. Meals are traditionally eaten with others. However, it is becoming more common for South Koreans to live and eat alone. For these people, watching mukbang can help them deal with their loneliness. Viewers can interact with the mukbanger. They can also communicate with other viewers via live chat. By watching mukbang while eating dinner, a person can feel less isolated. Mukbang also lets people gain vicarious pleasure from watching mukbangers eat. Viewers on a diet can feel satisfied by watching mukbangers feast on their meal.





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Mukbang-watching can have negative results. People who watch mukbang frequently can develop poor eating habits. The massive amounts of food that mukbangers gorge on in a single meal could eventually seem normal to people, who may start eating bigger portions of food. Since mukbangers in Korea are typically thin, it's easy for viewers to develop an unrealistic perception of eating and weight gain, which could lead to obesity. Eating large amounts of food that is typically high in calories and saturated fat isn't good for the mukbangers either. In fact, there has been some speculation that some mukbangers binge and purge. Finally, it is not uncommon to see mukbangers talk with their mouths full of food or make exaggerated sounds while they chew. By watching this behavior too often, viewers may develop the same bad habits. In brief, it is the viewer's choice that makes mukbang beneficial or detrimental.

39. What is the text structure of this passage?

- (A) Problem and solution.
- (B) Compare and contrast.
- (C) Cause and effect.
- (D) Pros and cons.



## Written test questions to assess higher-order thinking abilities

Coral reefs support more than a quarter of all marine species, despite making up less than one percent of the ocean floor. Most commonly found in shallow tropical waters, they can cover large areas. The most extensive coral reef ecosystem in the world is the Great Barrier Reef in Australia. It stretches for over 2,300 kilometers, supporting an astonishing diversity of species—including 30 species of whales and dolphins, 1,500 types of fish, and 14 species of sea snakes—many of which are rare or endangered.

Global warming is having an extremely negative impact on coral species. In fact, the situation is so serious that most species are at risk of collapsing by the end of the century. Corals have a kind of partnership with tiny algae. These algae give the corals their distinctive colors and act as corals' primary food source, providing them with most of their energy. However, when corals become stressed by, for example, an increase in ocean temperature or pollution, corals spit out these algae, turning white in a process called coral bleaching. Without their algae, corals are left bleached and vulnerable. They also lose their major food source. This leads to the corals' eventual death. Unfortunately, rates of coral bleaching have increased dramatically in recent years. Scientists have been trying many



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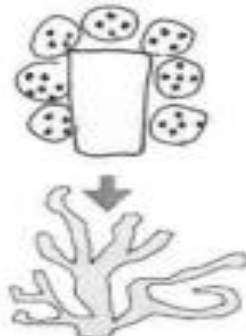
methods to help save the reefs. One of these methods is to breed heat resistant coral species, which could be used to repair damaged reefs. But the solution just **buys reefs some time**, as there is a limit to how much heat even these corals can take. Only an end to global warming—brought by reducing carbon emissions—can truly save the world's corals. The future of the world's coral reefs rests on the decisions we make to tackle climate change today.

40. According to the description of coral bleaching, which picture illustrates stressed coral?  
(The dots are algae.)

(A)



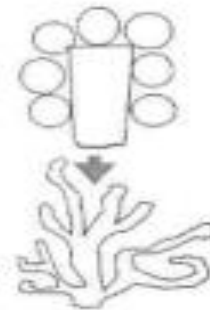
(B)



(C)



(D)





## Written test questions to assess higher-order thinking abilities

41. Why does the author use numbers and figures in the description of the Great Barrier Reef?
- (A) To show the author's knowledge about it.
  - (B) To give more detail about how "extensive" and "astonishing diversity" of it.
  - (C) To make later calculation and comparison easier.
  - (D) To prove that it makes up "one percent of the ocean floor."
42. What does "the solution just buys reefs some time" refer to?
- (A) The solution speeds the process of coral bleaching.
  - (B) The solution slows down the rates of coral bleaching.
  - (C) There is no enough time to breed heat resistant coral species.
  - (D) It takes more time to prove how the solution works.
43. What is the author's purpose of writing this passage?
- (A) To introduce the causes of coral bleaching.
  - (B) To demonstrate how important coral reefs are.
  - (C) To raise money for scientists to save coral reefs.
  - (D) To call for public attention to coral reefs under threat.



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### VI.混合題(12%)

One of the significant ways humans affect the environment is by causing or accelerating the extinction of other species. Human civilization and industry have created a destructive force. Species are estimated to go extinct at a pace 1,000 times faster than the natural rate. ① Between 1970 and 2012 alone, terrestrial species declined 36%, 81% of freshwater species disappeared, and marine species vanished by 36%. Extinction of key species can cause ecologic imbalances, especially if done rapidly. ② De-extinction is regarded as a powerful conservation tool, rescuing ecosystems from collapse and preserving delicate balances. ③ Efforts to resurrect the woolly mammoth, for example, have been making headlines for years. It is indeed a cool, exciting concept to bring back extinct creatures. ④ The technology is intriguing and could pave the way for interesting applications or even new scientific fields. However, I see no economic, ecological, conservational, or any other benefit in reviving a vanished species.



## Written test questions to assess higher-order thinking abilities

⑤ It would be a huge financial undertaking to reintroduce and maintain a "de-extinct" species. A new study in *Nature Ecology & Evolution* suggests that it would cost millions a year, a cost that could divert money and attention from crucial programs of protecting endangered species. "If you use those same resources on living species," Joseph Bennett, the lead author of the study, said, "you could save many more species from extinction."

⑥ Instead of de-extinction, we should focus on saving the creatures we have today. What's more, the natural habitat, the ecosystem, the social structures, and the population diversity of the past do not exist anymore, making the new animal have a hard time fitting into the new reality—either current species would be put at risk, or the reintroduced species would be threatened. ⑦ We might bring the woolly mammoth back, yes, but have we considered their effects on the current ecosystem?

⑧ Finally, focusing on de-extinction could reduce the moral weight of extinction and support for endangered species. ⑨ When the great warning "EXTINCTION IS FOREVER!" loses its sting, people will argue "It's okay if the whatevers go extinct; you can bring them back later." ⑩ So, with over 16,000 endangered species on Earth, shouldn't humans focus on saving them from extinction rather than "playing God?" De-extinction is not Plan B.



## Written test questions to assess higher-order thinking abilities

44. Which kind of information is not used as supporting detail in the passage? (2%)

(A) Example. (B) Statistics. (C) Research. (D) Definition.

45. Classify sentences marked ① ~ ⑥ into groups of “Fact” or “Opinion”. Please put “F” for “Fact” and “O” for “Opinion.” (3%)

Sentence	①	②	③	④	⑤	⑥
F/O						

46. The author decided to add the following sentence to the article:

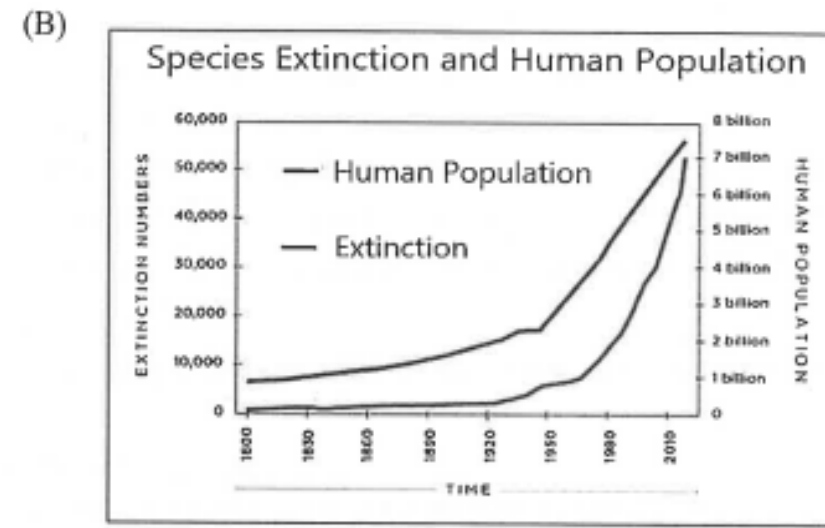
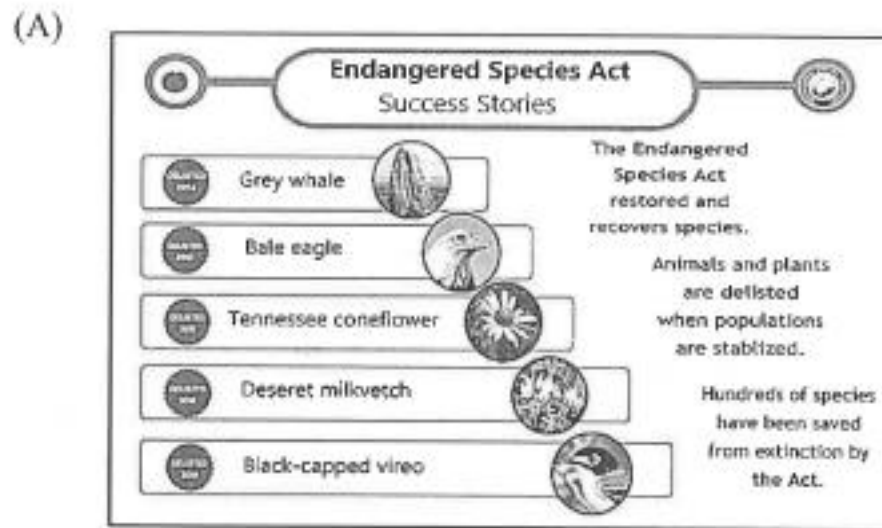
“De-extinction also opens the door for those who benefit economically from the destruction of habitat.” (2%)

Which sentence marked ⑤ ~ ⑩ should this extra sentence follow? \_\_\_\_\_



## Written test questions to assess higher-order thinking abilities

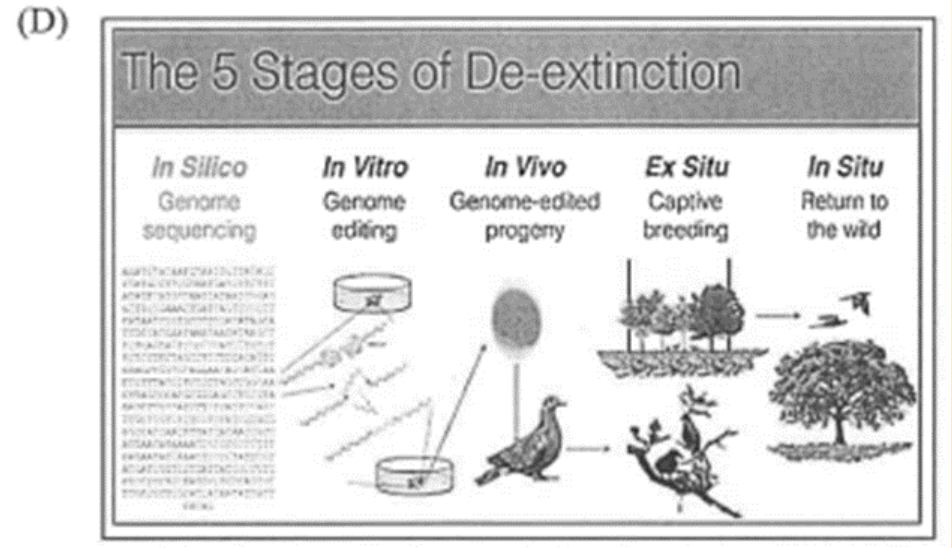
47. Please choose graphs or pictures from the following whose messages or point of view matches what is given in the passage. *(Note: There could be more than one answer.)*  
(3%)







# Written test questions to assess higher-order thinking abilities



(E)

## Gone But Not Forgotten: Technology's Power To Revive Extinct Species

### So Many Species, So Little Time

Half of all Earth's species could be gone by 2100.

Once a species is extinct, it's gone forever. **Or is it?**

For the first time, emerging technologies promise to help humans achieve a previously unimaginable feat: "**de-extinction**".



## Comparison of the test outcomes

Reading comprehension:

Question No.	Pass rate in the teacher's class (%)	Pass rate in other 9 classes (%)
39	38.89	15~38.24
40	50	26.32~37.14, 54.55
41	61.11	38.24~54.29, 61.29, 64.71
42	44.44	26.32~38.89
43	66.66	30.56~62.64

Of the 5 test questions assessing higher-order thinking abilities, the teacher's class got 3 for the highest pass rate, 1 for the second highest, and 1 for the third highest.



## Comparison of the test outcomes

混合題：

Question No.	Pass rate (%) or average scores in my class	Pass rate (%) or average scores in other 9 classes
44	Pass rate 36.11	5.88~30.56
45 (3 points)	Average scores 2.47	1.53~1.82
46	Pass rate 33.33	10~30.76, 35.15
47	Pass rate 30.55	0~20.86

Of the 4 test questions assessing higher-order thinking abilities, the teacher's class got 3 for the highest pass rate or average scores, and 1 for the second highest.

The other 9 classes, whose English teachers tend to teach in a relatively conventional, one-way teaching model, mostly don't perform well in such written test questions assessing higher-order thinking abilities.

So, it can be inferred that...



Teaching through inquiry does enhance student's higher-order thinking abilities and help them perform better in a competency-based written test.