## Teaching Strategies for promoting National Geography in lessons

17 June 2024

Mr Leung Shong Tung Kowloon True Light School



### Programme

- Directions of implementing national geography teaching in lessons
- Possible resources and topics for infusing national geography elements in lessons
  - Aerial China Documentary Series
  - Institutes for Planet
  - The China Current
- Exemplars of teaching strategies of national geography and national security education
  - Enquiry lessons
  - Small-scale enquiry
  - Reading Across Curriculum

# Interface of teaching & learning of National Geography elements

Secondary school level:

- Understanding the characteristics of the different provinces, autonomous regions and municipalities
- Analysis of the spatial concepts of these places with reference to themes and issues

Primary school level:

- Knowing the fundamental knowledge of China, e.g. general location of China
- Recognizing and knowing the names of important provinces, autonomous regions and municipalities

### **Directions of implementing national geography teaching in lessons**

 Suggested themes/ topics that can be infused into the modules in junior secondary

Relevant modules	Examples of themes/ topics
Using urban space wisely	Sustainable development in Tianjin
Living with Natural Hazards - Are we better equipped than the others?	Earthquakes in Wenchuan, Sichuan in 2008
Scramble for Energy	Alternative energy resources in China
Oceans in Trouble	Issue of overfishing in the Nai Hai
Changing climate, changing environments	Actions done by the Chinese government to reduce greenhouse gases emission

## School-based curriculum planning

Level	Module	Case study	Relevant NSE domains
S1	Using urban space wisely Map reading skills (I)	Eco-city in Tianjin	Ecological security
(1 lesson per week)	Ocean in trouble*	Overfishing in the Nai Hai	Homeland security Resource security Ecological security
S2	Food problem Desertification (I)*	Major farming regions in China (Xinjiang, Yunnan, Shandong)	Food security Ecological security
(2 lessons per week)	The trouble with water Desertification (II)* Map reading skills (II)	Large-scale water transfer project	Resource security Ecological security
S3	Living with natural hazards Map reading skills (III)	Impact and response of natural hazards on China	Public security
(2 lessons per week)	Changing Climate, Changing Environments Scramble for Energy*	Impact of climate change on China Alternative energy resources in China	Polar security Nuclear security Resource security

- Aerial China
  - Spatial concept
  - Physical and human topics
  - Aerial videos with brief descriptions
  - Need further elaboration by teachers

### Use of CCTV programme 《航拍中国》

- Institute for Planets (星球研究所)
  - Scientific and in-depth explanations of geographical concepts
  - More related to physical geography topics, e.g. water resource, deserts
  - Need trimming/ suitable selection of resources

- The China Current
  - Physical and human settings of China
  - More related to the manland relationship/ human responses to geographical issues

	Aerial China	Institute for Planets	The China Current
Source	YouTube/ CCTV	YouTube	https://chinacurrent.com/hk/
Merits	<ul> <li>Able to show geographical location</li> <li>Aerial videos are good teaching resources for physical geography topics</li> </ul>	<ul> <li>Detailed analysis of geographical issues</li> </ul>	<ul> <li>Short video time</li> <li>Large quantity</li> <li>Able to show some infrastructural projects/ achievement in China</li> </ul>
Demerits	<ul> <li>Video search from provincial level</li> <li>Limited description on the geographical issues</li> <li>Restricted resources,</li> <li>Less able to show some geographical problems, e.g. sandstorm</li> </ul>	<ul> <li>Too long for a geography lesson (about 10-15 min)</li> <li>Some of the concepts may be difficult for junior secondary students</li> </ul>	
Suggestions	<ul> <li>Use Wikipedia to search relevant theme</li> <li>Add other resources in teaching/ use the video resource as the supplement of teaching</li> </ul>	<ul> <li>Appropriate trimming/ selection of the relevant video clips</li> </ul>	

# Teaching exemplars (1): S3 Scramble for Energy

By the end of the lesson, students should be able to:
<ol> <li>To describe and explain the locational advantages of developing solar energy and wind power in North China</li> <li>To explain how the development of these renewable energy recovered below</li> </ol>
<ol><li>To explain how the development of these renewable energy resources help reduce energy shortage and environmental problems</li></ol>
<ol> <li>By interpreting photographs (as shown in video) to identify the locational factors</li> <li>To interpret climatic data</li> <li>To logically discuss the pros and cons of adopting renewable energy resources in China</li> </ol>
<ol> <li>To appreciate our country's effort in safeguarding resource (energy) security in China</li> <li>To develop the humanistic value of national unity in solving problems of our homeland</li> </ol>
Strand 7: Understand the importance of homeland security, resource security
and nuclear security to the social-economic development of the country
through learning the geographical characteristics of our country

### **Pre-lesson tasks**

#### **Pre-lesson task**

Before discussing the renewable energy resources in China, let's understand some basic geographical information of the provinces/ autonomous regions in China.



#### Figure 1 Map of China

- 1. On Figure 1, label Nei Mongol Autonomous Region and Ningxia Hui Autonomous Region.
- 2. Prepare a photo of a characteristic item (much better if you could bring the real object) from the either one autonomous region. Prepare a 'show and tell' presentation about the object and the autonomous region.

### **Pre-lesson tasks**

Today I'd like to share with you some fascinating information about yaks and the important role they play in the Inner Mongolia Autonomous Region of China. Yaks are a large, shaggy-haired bovine species that are perfectly adapted to the harsh, mountainous environments of Central Asia. In Inner Mongolia, yaks are deeply woven into the cultural and economic fabric of the region. One of the most valuable yak products is their dense, warm wool. Yak wool is exceptionally soft, durable, and insulating - making it perfect for creating high-quality textiles like sweaters, shawls, and blankets. In fact, many traditional Mongolian garments are woven from yak wool. But the uses of the yak don't stop there. Their meat is also a dietary staple, prized for its rich, almost sweet flavor. Yak meat is a major source of protein for Mongolian herders and is also becoming increasingly popular in high-end restaurants around the world. Yaks even provide transportation for Mongolian nomads, able to traverse the rugged mountain terrain while carrying heavy loads. Their dung is also an important fuel source in this remote region. So as you can see, the yak is truly a remarkable animal that is central to the lives and livelihoods of people in Inner Mongolia. From food and fiber to fuel and labor, the humble yak is an indispensable part of this unique regional culture and economy."

#### Removed due to copyright issues

#### Linkage with their researched work to the geographical settings in China

Goji berry, a orange reddish coloured food also known as the Ningxia wolfberry is the characteristic item in found from the Ningxia Hui Autonomous Region of China.

Why is it the characteristic item? Ningxia fulfills the requirement of providing high quality soil conditions and climate for the goji berries to grow better. Therefore, Ningxia is the largest producer of the goji berries in China.

Also, these berries are used in the traditional Chinese medicines for a long period of time. It has the significance of it. It reflects the culture in Ningxia.

#### **Removed due to copyright issues**

## **1. Problem identification**

#### A. What is the current status of energy consumption in China?

 Figure 2a shows the production and consumption of energy resources in China from 1970 to 2019. Table 2b shows some data about the socio-economic development of China from 2000 to 2019.

#### Removed due to copyright issues

- (a) Quote evidence to describe and explain the trend of daily energy consumption of China between 1970 and 2019.
- (b) What energy problem has China been facing in recent years? How may the energy problem affect the national security in China?
- (c) What may the Chinese government do to ensure the energy supply in China?

#### Removed due to copyright issues

#### B. What types of renewable energy resources are available in China?

#### (i) Wind power

2. Figure 3 shows the aerial photo of the Huiteng Xile (輝騰錫勒) Grassland, Nei Mongol Autonomous Region, where a large scale wind farm can be found.



What are the locational advantages of Huiteng Xile Grassland to be developed as a wind farm?



**Use Google Earth** 

Video input from Aerial China Removed due to copyright issues

**Geographical settings** 

Data analysis

### Solar energy in Zhongwai shi, Ningxia Autonomous Region



With reference to Figure 4a and Table 4b, describe the physical environment of Zhongwai shi.

- Climate
- Landscape/ relief

Satellite image analysis

With reference to the advantages of solar energy and wind power, the Chinese government should replace other types of energy resources with solar energy and wind power. With reference to Figures 5a, 5b and 5c. Discuss whether the above suggestion is appropriate.

Decision-making Data analysis Concept of resource security

	The population density is higher in , meaning that the energy demand is
noved due to copyright issues	Removed due to copyright issues

Removed due to copyright issues **Removed due to copyright issues** 

With reference to the advantages of solar energy and wind power, the Chinese government should replace other types of energy resources with solar energy and wind power.

With reference to Figures 5a, 5b and 5c. Discuss whether the above suggestion is appropriate.



#### Anonymous 19d

### Grp 2 (table in front of teacher table )Stance :agree

According the figures, the eastern part of China has high the population density . While in the western part of china most solar energy is generated .therefore to transfer energy to the eastern part , many power lines have to be constructed and large capital are required, which is not cost efficient.

#### Anonymous 19d

#### Still Group 4

Most people live in the eastern / southern part of China, whereas the energy machines is mainly distributed around the western / northern places, and it would be hard to transfer energy over a large distance without any energy loss.

 $\heartsuit 3$ 

 $\Omega 4$ 

Add comment

Specific geographical settings for the development of solar and wind energy Spatial distribution of regions with abundant solar energy/ wind power and high energy consumption regions

#### Anonymous 19d

#### Group 4 (I think)

We personally think that the Chinese government should not replace other types of energy resources with solar energy and wind power.

First of all, the usage of solar energy and wind power cannot meet the demand of the people in China. Wind power, has its disadvantages by only able to absorb it near the Northwestern China. The energy absorbed by these places definitely cannot meet the demand for electricity,

especially inland. Solar energy is more focused on the western side of China. Even though it could help the western regions of China, this and the wind energy combined still wouldn't be able to meet the needs of the whole China.

 $\heartsuit 3$ 

no

QO

a Add comment

#### ♡3

- Anonymous 19d Wow your answer is rlly nice !
- Anonymous 19d I like it!
- Anonymous 19d I am loving it
- Anonymous 19d Excellent wor bro

### 4. Extended discussion

#### West-East Electricity Transmission Project

5. Figure 6 shows the overview of the West-East Electricity Transmission Project.

#### Removed due to copyright issues

#### **Development of nuclear energy**

Removed due to copyright issues

Each of the corridors is expected to exceed 40 gigawatts in capacity by 2020 – a combined capacity equivalent to 60 Hoover Dams. The seven recipient provinces – Beijing, Tianjin, Hebei, Shanghai, Zhejiang, Jiangsu, and Guangdong – together consume nearly 40 percent of China's total electricity.

Yunnan's Nuozhadu Dam on the Mekong River was constructed as a part of this project, and has been touted as part of the backbone of the southern corridor, sending two-thirds of its output to Guangdong – the leading province in export manufacturing.

Also along the central corridor, the longest, single ultra-high voltage direct current line in the world connects the Xiangjiaba dam on the Yangtze River (between Yunnan and Sichuan provinces) to Shanghai. It is 2 070 km long and has a capacity of 6.4 gigawatts.

Source: https://www.wilsoncenter.org/publication/interactive-chinas-west-east-electricitytransfer-project Figure 6

## **Exit card**

#### ANNABLILL LIN 3D(15)

#### Exit card

Explain one favourable factor that the Nei Mongol/ Ningxia is suitable for developing alternative energy resources.

sentle reliet land and burnens div nems with sparce population.

In what aspect the major fields of National Security Education are included in this lesson? Circle the relevant field(s) and explain your answer in one sentence.

- no newables cres resources CEN Solve everst shorth

Persource Security PRA KRA KAPWAY Polar Security

this load mineserity

**Cultural Renality** 

Military See

Public Service

Outer Space Seco Nuclear Security Overselas Intéresté Security

Science and

Technology Security

Distancipity



Artificia: Intelligence

Cyber Sinurity

蒂

Fried Securit

Rola Spearsh

Exit card

Explain one favourable factor that the Nei Mongol/ Ningxia is suitable for developing alternative energy resources.

Dry and arid climate

Political Reportity

**Cultural Security** 

Coological Security:

Deep Sep Security

Military Securit

Public Security

Resource Security

Polar Security

nined for

Science and

Technology Security

Nuclear Security

Elesscurity

In what aspect the major fields of National Security Education are included in this lesson? Circle the relevant field(s) and explain your answer in one sentence.

Energy is a kind of surce and we talked about gy shortage and how to live it with re-newable Energy.

3006 Evanna Cheun





Food Security Cyber Security



Overseas Interests Outer space security

Security

Antificial Intelligence



## **Teaching exemplars (2): S2 Food**

### problems

Reading Across Curriculum Worksheet: Hybrid Rice

- Collaboration with English Department
- LAC



## **Teaching exemplars (2): S2 Food**

## problems

Pre-lesson task:



### **Teaching exemplars (2): S2 Food** problems

#### Source 2

20

The father of hybrid rice



[1] Yuan Long-ping, the renowned Chinese scientist who helped feed China and the world with his pioneering research on hybrid rice, passed away at age 91 on May 22, 2021 in Changsha, Hunan Province, Born in Beijing in 1930, Yuan witnessed starvation growing up and was deeply saddened by this. He graduated from Southwest Agricultural College in 1953 and dedicated his career to agricultural research and education. In 1964, Yuan began his groundbreaking research on developing high-yield hybrid rice strains. After nine years of intensive research and testing, his team successfully cultivated the world's first hybrid rice variety which raised yields by about 20% compared to conventional strains. Since then, hybrid rice has been widely grown across China, enabling farmers to reap incredible yields. This helps China feed its massive population with limited arable land.

(2) Yuan's hybrid rice is now planted on over 16 million hectares in China (57 per cent of the total planting area of rice). meeting the needs of 80 million more people annually. In 2021, his team's third-generation hybrid rice achieved 10 extraordinary yields of 22.96 tonnes per hectare. Yuan believed raising productivity was key to ensuring food security in populous countries like China. His life mission was developing hybrid strains with higher yields. Yuan also trained over 14,000 technicians from 80 developing countries since the 1980s on cultivation methods, providing enough food sources where famine risk is high. Globally over 8 million hectares are planted with his hybrid varieties, increasing yields by about 15 two tonnes per hectare over local varieties.

[3] Yuan received many top national honours, including China's highest state honour Medal of the Republic in 2019 for his eminent contributions. Diligent even in his 80s, he continued handson field research until falling ill in early 2021. Yuan Long-ping's lifelong hybrid rice research improved countless lives, and he is unquestionably a leading scientist who helped secure global food supply through innovation.



4,	Look	at the underland words in paragraphs 1. 3 and match them with	the definitions below. (d marks)	
	1)	efficiency in producing goods or services	Productivity	
	II)	planted	Agricultural wouthwated	
Subject-	111)	relating to farming	rultivated a approximational	
specific diction	iv)	withdue for farming and growing crops	_Arable	
	v)	the total automa of crops produced	Tields /	
	ei.	wolegoood looger and malmutrition	-famine V	

## **Teaching exemplars (2): S2 Food**

### problems



Below is an extract from an online forum where some farmers are discussing a new type of hybrid rice.

Happyfarmer	[1] HI fellow famers! Do you know that Chinese scientists are working on a new type of hybrid
2.17 p.m. 11 Oct	rice? They found that by combining the Japonica and Indica rice varieties, they made the rice super strong and resistant to pests, diseases and drought. This hybrid rice could also yield more than 15% higher than what we have now. I truly hope it'll be available soon.
Funfarming 3.49 p.m. 11 Oct	[2] That could surely save us some serious cash. With bigger yields and fewer pesticides needed, we can save money and increase our profits. That's a game-changer, especially for small-scale farmers who often struggle with high costs.
Happyfarmer 5.09 p.m. 11 Oct	[3] You are right, Funfarming. With the higher yield, we can feed more people using less land. And the best part is that hybrid rice needs less pesticide compared to the traditional types. It's not only great for the environment but also for our health. I can't wait to see how this new variety from China will contribute to sustainable agriculture!
FarmKU 2.03 a.m. 12 Oct	[4] China has been leading the way in hybrid rice breeding, and their research has inspired other countries to give it a try. It's incredible that Chinese scientists have identified and named 27 sterility-related genes, accounting for more than half of all the research in this field. Now that we know more about the genes in rice, we can mix and match the genes to see how we

7. According to paragraph 1, what are TWO reasons Happyfarmer hopes the new hybrid rice will be available soon

- ") The rice become super strong and resistant to pests, diseases and drought?" ") The hybird rice could also yield more than 15% higher than what they have now
- Which of the following is NOT mentioned as a benefit of the new hybrid rice in paragraphs 2 and 3? Blacken the correct circle. (1 mark)
  - O .A using fewer posticidos

increasing yields

- O C saving money
- D lowering the price of rice

(1 mark)

(1 mark)

9. How many people posted in the forum?

3 people

0

10. In paragraph 5, Funtarming states that innovative solutions such as hybrid rice that benefit buth

the environment and people's health

ts and farmers working together to come up with innovative benefit both the environment and people's health. I hope there irch and adoption.

#### Merits of hybrid rice

### **Teaching exemplars (3): S2** Desertification

Source 2



[1] Hi everyone! My name is Buyintegedele and I'm a herder living in the Gobi Desert in Inner Mongolia, China. I'd like to tell you a bit about my life and experiences growing up in this harsh but beautiful landscape.

[2] The Gobi is the largest desert in Asia, covering parts of northern China and southern Mongolia. It has an extreme continental climate, with very cold winters and hot summers. The annual rainfall here is less than 100 mm, so it is an

5 extremely arid environment. However, the Gobi is home to a variety of wildlife including wild Bactrian camels and snow leopards. As herders, my family and I move across the desert with our sheep, goats, camels and horses to search for patches of grass and water for them.

[3] Life in the desert can be very difficult. Fierce sandstorms known as 'yellow dust storms' often blast across the landscape, destroying crops and hurting livestock. As the climate changes, these sandstorms have become more and more common

10 and intense. Sometimes they can occur ten times in a single month! The storms blow sand everywhere, even inside our homes. It's hard to keep the animals safe and find enough food and water for them during these harsh weather events.

> Read Source 2 and answer questions 3–7. (13 marks)

Subject-specific diction

[4] Desertification, which is the change of land into des increasing in recent decades. This expansion of desert la growing crops. More people had no choice but to leave

best to remain here on the land my family has lived on 15

[5] In April, I plant corn which I hope to harvest in O storms often destroy them before they can be harvested animals.

[6] While this landscape can be unforgiving, it's also i camels walking along the horizon or galloping across t 20 I've been. This fascinating, if challenging, desert is the the herding traditions of my ancestors.

- 3. Look at the underlined words in paragraphs 1–6 and match them with the definitions below. (6 marks) a person who takes care of a group of animals in the countryside i) ii) using too much vegetation for feeding animals iii) plants grown for food or other uses the animals kept on a farm iv)  $\mathbf{v}$ to cut and gather grown plants for food or other uses vi) very dry Find ONE piece of evidence in paragraph 2 which suggests that Gobi Desert is 'an extremely arid environment' 4. (lines 4–5). (1 mark)
- In paragraph 3, what are the reasons Buyintegedele gives for his very difficult life in the Gobi Desert? Write a word 5. or phrase taken from the paragraph in each blank below. (4 marks)
  - Sandstorms there destroy (i) \_\_\_\_\_ and hurt (ii) \_\_\_\_\_

There may not be enough (iii) for the animals.

### **Teaching exemplars (3): S2 Desertification**

### Measures tackling desertification/ sandstorms

Rea	d Sou	arce 3 and answer question 8. (5 marks)				
8.		ording to Source 3, decide whether the following statements are True (T) correct circles.	), False (F) or Not C	liven	(NG). (5 mc	
		Statements		Т	F	NG
	i)	The Three-North Shelterbelt Forest Program is mainly about stopping of	lesertification.	0	0	0
	ii)	The program covers the entire country of China.		0	0	0
	iii)	The program will continue restoring and protecting grasslands.		0	0	0
	iv)	The program has reduced the silt entering the Yellow River.		0	0	0
	v)	The Three-North Shelterbelt Forest Program has successfully complete	d its goals.	0	0	0

### **Teaching exemplars (4): S2 Desertification**

#### Language writing exercises

	China? ion in China. Write Vocabulary physical factors, dry climate, sandy soil, sparse vegetation,	of desertification in China A-
Figure 2 A severely eroded slope in North China Removed due to copyright issues	climate change Paragraph 1: dry climate, w annual, hinfall/little hinfall, land, receive ss moisture aragraph 2: rong winds, ose and sand bil, osely held	First, the climate in North China is dry Since the annual rainfall in Inland China is low, less moisture is received. Only little drought- tolerant shrubs can survive in this harsh climate. Desertification is resulted. North China is located in the inland areas, it can receive less moisture from the onshore winds in summer. So, the annual rainfall is low. It sanst supert high density of plast. Second, the winds in North China are strong. Then, strong winds can carry away the loosely held topsoil the soil loose and sand soil is resulted. Soil erosion occurs the land becomes
27 NOV 2623		unproductive and even barren. The process is called desertification. the strong winds will blow away the topsoil in North China. It makes the soil loose and sandy with vegetation cover, the soil is seriously evoded Soil erotion occurs when the soil is percential

1

# **Teaching exemplars (5): S2 Water problems**



**Questions related to NSE** 

# **Teaching exemplars (5): S2 Water problems**

stud - avid (c) How may the physical environment pose challenges to the local people in Ningxia?

() Dronght / water deareliths = Lock of water for irrigation and domestic usage . () Affected by desertification : Infortile and this further lowering the productivity .

#### Measures to manage water resource and desertification in Ningxia

(d) What have been done by the local people to overcome the physical challenges in Ningxia?

## Water shortage - growing of drought - resistant crops (e.g. potntoes to allow water for usage in dry season. - build dams and alloring tanks to reduce water consumption - build dams and alloring tanks to reduce water consumption - weige plastic films to reduce evaporation. Straw checker bound to fix the sand dumes. This hold losen sands.

#### **Questions related to NSE**

(e) What is the importance of these measures in securing the national security in China?

The use of straw checkerboard could reduce description there will be less use of glant cover, the food environments, safequarding ecological security.

# **Teaching exemplars (5): S2 Water problems**

(c) Figure 7b shows the measure to alleviate the problem of drought in Beijing.

#### Removed due to copyright issues

Figure 7b

(i) What is reclaimed water?

Reclaimed water is water that purified and treated sewage for reuse.

 Calculate the share of reclaimed water in total water supply in Beijing in 2020.

1.2/ 4.06 ×100% = 29.6%

(iii) What are the current uses of reclaimed water in Beijing?

- Replevishing water in vivers and lakes & - toilet flushing - con washing -

(iv) What are the advantages of recycling sewage?

Alleviate the water shortage and water pollation problems

New measures to manage water resource in China

# **Teaching exemplars (6): S2 Water problems**



**Concept of water scarcity** 

# **Teaching exemplars (6): S2 Water problems**

Study Figure 1, Table 2 and Figure 3 to answer the following questions about a water problem in North China.



Figure 1 Provinces and autonomous regions that the Huang He flows through

100 000 000

	(100 million m <sup>3</sup> )	Population (10 000)	Per capita water resources (m <sup>3</sup> / person)
Shandong	168.4	9 847	Х
Henan	287.2	9 480	303
Hebei	135.1	7 425	182
Shanxi	94.0	3 664	257
Shaanxi	333.4	3 793	878
Inner Mongolia	537.0	2 511	2 139
Ningxia	9.2	668	138
Gansu	164.8	2 600	634
Qinghai	589.3	588	Y

Table 2 Information about the provinces and autonomous regions that the Huang He flows through
### **Teaching exemplars (6): S2 Water** problems



Figure 3 Distribution of annual rainfall in China

### **Teaching exemplars (6): S2 Water** problems

### **Concept of water scarcity**

- What is the water problem faced by the provinces and autonomous regions you have shaded? з. Questions How does this water problem affect the national security in North China? because there is not enough water for irrigation They face water scarcity. related to NSE Water scarcity causes many inconveniences, like crop falince. Water scarcity also affects the daily liver of people, like having little drinking water will also be difficult for citizens to get next as a lot of water is needed to raise cattle.) The nater supply will not be able to satisfy its demand. Conclude -> This negatively affects the national security in North China. Refer to Figure 1 and Table 2. Why do these provinces and autonomous regions have the 4. water problem in Q3? It is because these regions have little to no rainfall. In table 2, we can see that the Northern and Western China have less than 400 mm of rainfall annually. In table 2 we can see that these provinces also have little neter resource per capita, all below 400 m3 / person.
  - 5. Refer to Figure 1, Table 2 and Figure 3. With evidence, explain whether physical factors or human factors are more important to cause the water problem in Q3? Physical factors are more important to mater scarcitin
    - In figure 3, areas with low rainfall are the Northern and Western areas. In figure 1 Northern areas of China. In table 2. the The areas with water scarcity are tound in the
    - little nater resources are the main cause for water scarcity in most areas.
  - 1. Physical Pactors are important, e.g. rainfall and volume of flows in the rivers. Places with little rainfall and lower volume of flow may result in less meter supply. This increases the risk of atter scarcity. For example, Ningxia has lover annual rainfall and little volume of flow, leading to low water worky Annuan factors are important. As large population increases the demand for freshneter, places with dense economic activities and population will have yearlier into Page 2 of 2 stress. For example, Shauding has a large population and its per capita mater resource is therefore law.

## **Teaching exemplars (7): S2 Water problems**

B. The Three Gorge Dam Project: Decision-making

22. Figure 22 shows the details of the Three Gorge Dam Project.

#### **Removed due to copyright issues**

### Discussion on the effectiveness of dam construction

(iv) The construction of the Sanxia Dam is completed in 2003. Table 22c shows the comparison of flooding in Chang Jiang Basin in 1998 and 2020.

Year	Precipitation (mm) 1 June – 20 July in Huangshan station	Affected population (million people)	Number of fatalities	Direct economic loss (US\$ billion)
1998	722	240	1 526	39.45
2020	1 625	54.81	158	22.34

Table 22c

Do you think structure P is effective? Quote evidence to explain your answers.

1 think structure P is eff	ective. From table 22c, alt	haugh the valual	172
2020 TS higher, the affected			
economie toss decreased			

## **Teaching exemplars (8): S3 Climate** change



Page 1 of 2

Page 2 of 2

### Conventional the topic

# **Teaching exemplars (8): S3 Climate change**

Study Figure 4a and Figure 4b.

### Removed due to copyright issues

Year	Global forest area (thousand ha)	Global fossil fuel consumption (million tonnes oil equivalent)	Mean atmospheric carbon dioxide concentration (ppm)	Global temperature anomalies* (°C)
1990	4 128 269	7 906	• 354	+ 0.4
2000	4 055 602	8 152	369	+ 0.4
2010	4 015 673	10 601	389	+ 0.7
2015	3 999 134	11 306	399	+ 0.9

\* Based on the mean temperatures from 1950 to 1980

Table 4b Data related to global temperature anomalies from 1990 to 2015

Describe and explain the trend of the change in the amount of atmospheric carbon dioxide 1. from, 1995 to 2015(3) It's keep increasing from 1995 to 2015, From 1990 354 ppm Carbon ppm carbon dexide in 145. As we may see Tsure the global forest avec has been decreasing from 4128269 throwand ha in 1980 to 3999134 thousand ha in 246. However, the toxil fuel commption has been increasing from 7906 million times to 11306 million tray in 2015. Burning at Fossil F releases a bit of carbon disside, when in 1980 for excless theater to should be an of the carbon disside of the intervence of the strength of the carbon disside of the carbon disside of the intervence of the strength of the carbon disside of the intervence of the strength of the carbon disside of the carbon diss 2. ice extent?(4) Chybon Maxile areenhouse and, Will Cherry being absorbed , canying global whiching. Whomer Temp. VI KI sile a decrease on sen the extent and

#### **Conventional questions on the topic**

Figure 4a Information of the Arctic region and the surrounding areas

# Teaching exemplars (8): S3 Climate change

How might the areal change of sea ice extent you found out in Q1 bring about both positive 3. and negative impact to the Arctic region? the sen the extent decreges, The wear covered by the flate in of Artic Ocean decreases. The paitile impact the rituation is The natural ferning is ewier, of seen in tigme the Also, the areas incovered by the sea are provided a new mite tor people to Truel from Alalia to Inventional, printing Prates and buit clunum. Therew, the registive impart brought is that the construction of polar bindiversity, bringing the relation of polar bears, charly then hand to find food deficienties to survive and the extinct. To How may human activities pose a threat to polar security and ecological security? also brought 4. in the polar region an over- extraction of oil Men there's extrated & dertran Kinner legim 4V Thes whing t mole toull Lent In his May harm The hatural Dolar ruter Polar security: https://www.youtube.com/watch?v=cV3ePADNSpE

Questions related to NSE

### Teaching exemplars (9): S3 Climate change Essay writing

Name : Yannis Tang Farmingstyphiac九龍真光中學 Class : 3D (21 Kowloon True Light School Greas estay rave good have bad bad > good Explain why climate change pring more have than gout I the people of China Climate change brings more have than gout to the people. of China on water resource, faming and public health Firstly, in the aspect of water resource. Climate change brings a large amount of rainfull by higher endporation and and endorsation rite. Hummer, it also decrease the days with rain. This reduces the ville of flucting in Northern creas, preventing lebted law. However, with the increasing amount of vain, there are also more days with intensive vaintall, the higher vate of strum surges, wastal and Sathemy crass will easily relieve fluxings. Related fire and properties canyed ocur. Jeunly in farming asspects. As there's an increase in righter due to dimate change, vice, wheat and maize can be grown further north in north- eastern and north- nertern regions, find publicing in three areas can be rehad. However, with heavy stinday and viring seg level flord the fields, about the tourland become two rates to form. Also because the vising temperature in temperate regions, mue tripical different and perty are being sprend in purthern region and affect the productivity of forms.

lightly in the esspect it public besth. There the characte change Viel the temperture in terrority lies also days over and tever deaths and nee current by Externe cold weather. Human, line the terroritre viers in 1 geog. Torrente region, tropical discover like dayse four will exam notwords. Form Also, nore trequent best wave, effectually in the hathern and such extern and region, which is the topical segions. They led to more cores of heat strate, example couring man cleates by Externe but acother

ALL NO.	To sum up, climate changes caused passe have them good by eitinging the foundaries, flowling up the land, candry lasses and having people's health. 10/10.
	/ ·
	2 8 MAY 2024
1	prelipitetion -> seduce water second
-	the product of the capacity of the product of the p
	when the new it als showed her was at faint dealler where
_	the rely of Andrea Rether an experimentation for
	and the second
	and had and man the to the here the
_	the main and the
	Bout a finan with the first series to make
	the word down the texts all and state of the
	the second part of the second se
	and first the take a sour the tentand becare the con to
	from Ale line the they begins a strend extension
	there the me putting that is fullion from all affect the
-	
	and made all and that step to have all it and
	what is been added to all days the and to it when
	man to the star three and to take in the
	there is a provide the paper from the second and a product of the second and the second secon
	and the second s
-	

# **Teaching exemplars (8+9): S3 Climate change**

Geography (S1 - S3)		Curriculum Framework of National Security Education in Hong Kong	
Chapter / Topic	Learning Elements	Strand	Learning Elements
Elective Module: Changing Climate, Changing Environments • What are the effects of climate change on different parts of the world? • What have been done to deal with climate	<ul> <li>Understand the impact of climate change on China (including Hong Kong), and learn about the measures adopted by China and other countries in combating climate change</li> <li>Through satellite images, understand the impact of climate change on polar ice and the ecological environment. Students should understand how human activities pose a threat to polar security (new security domain) and ecological security.</li> <li>Through the discussion of various measures to deal with climate change, students should understand the different ways to attain and the importance of safeguarding polar security and ecological security.</li> </ul>	1	<ul> <li>Understand the definition of national security and the 13 domains of national security (e.g. new security domains, ecological security)</li> <li>Explore topics related to ecological security and new security domains (e.g. biodiversity, conservation, and exploration and protection of deep sea and polar regions), understand the impact of human activities on the ecology and environment, and the necessity of safeguarding ecological security and new security and new security domains.</li> </ul>

# Teaching exemplars (10): S3 Scramble for Energy

(c) Study Figure 7c which shows the nuclear safety measures adopted by the Daya Bay Nuclear Power Station.

The Daya Bay Nuclear Power Station has been providing a stable power supply while maintaining good safety standards.

- 1. Ideal location
- > The plant is built on geological stable land. The risk of earthquake is extremely low.
- > Important facilities, such as flight paths and factories, are located far away from the plant.
- 2. Design and operation in line with international safety standards
- > The main buildings and power generation equipment are earthquake-proof.
- Each reactor is built with three safety barriers made of reinforced steel and concrete to prevent radiation leakages.
- > Radioactive waste is kept in closed containers and disposed of properly.
- 3. Careful monitoring
- Radiation levels are closely monitored. Abnormal conditions are reported immediately.
- The Daya Bay Contingency Plan has been set up to coordinate government efforts. Drills are also carried out regularly to raise public awareness and prepare for emergency situations.

Figure 7c

#### **Nuclear security**

### Removed due to copyright issues

(b) What is the major problem caused by the use of nuclear power? Complete Table 7b.



actions due)

Nucleur Security ecological Jecurity Changing Climate, Changing Environments

What aspect of the national security is being fulfilled by referring to the measures adopted by the Daya Bay Nuclear Power Station? Explain briefly.

(environment)

Jolisty's safety. The plant is built in a geological stable land, import toulister located for away from the plant, clareful decipier and mainturing. These can all prevent the society being enormously affected, canving huge proporties and thus log, coming the country instable.

Ecological security = as the nuclear plant is breated for away from the pubbin areas and socied along the coartline, plants (familing, forests) wint be attached by

II. Are renewable energy resources good alternatives? the radiction and they

Figure 8a shows the distribution of renewable energy resources in China. Table 8b shows the China.
 Figure 8a shows the distribution of renewable energy resources in China.

### Removed due to copyright issues

Water also won't he policied so there won't be water pulliting, hearing the living thing: in the Duca.

## **Teaching exemplars (10): S3 Scramble** for Energy

Nucleur Security

actions dure)

Nuclear security

What aspect of the national security is being fulfilled by referring to the measures adopted by the Daya Bay Nuclear Power Station? Explain briefly.

Changing Climate, Changing Environments

ecological security

environment,

winty's safety. The plant is built in a geological stable land, import facilities "catal for away from the plant, careful design and monitority. These can all prevent the roverty being enormously affected, causing hope properties and The lor, coming the country instable Eculogical security = as the nuclear plant is located for away from the puban apear and I scated along the coartline, plants (farmlands, forerts ) won't be attached by the varietion and they

(b) What is the major problem caused by the use of nuclear power? Complete Table 7b.

mut die, natural environment 1a. Table 8b shows the Conche of @sapphire.ktls Nuclear security =. By locating at si Ecological security = By adopting these can Saf appropriate location eg. far away from Water clis won't he important faultities and settlement, the headines, under every Usate to use and hic Vadiation from the plant will have limited and it's clean and retable every Impact in case of mulleon repurses Wide application will would be water pullation, fullure. Therefore, afterno of muleur energy would having the living things reduce the emission of cost is minimend. and Greenhove gaves and cir pollutate allevicting clima change and air pollation. In Cost Table

precinel,

polluted so there

in the occan.

## **Teaching exemplars (11): S1 City**

### 8.2 Are there any good examples of sustainable cities in the world? Tianjin: Developing the 'Eco-city'

1 Refer to Figure 1 which shows the map of China.



Complete the following description about the location of Tianjin.

- Tianjin is very close to <u>Beijing</u> and Bohai.
- It is a major port city.
- Tianjin belongs to a/ an province/ autonomous region/ municipalities/ Special Administrative Regions.

Locations; Types of administrative regions

#### Figure 1

#### **NSE-related**

## **Teaching exemplars (11): S1 City**

2 Refer to Textbook p. 83 for the map of the layout plan of Tianjin 'Eco-city'. How has the development of 'Eco-city' achieve sustainable development?

Feature	Explanation
Removed due to copyright issues	Meeting economic growth         • Develop <u>industrial</u> parks for green and non- <u>polluting</u> businesses, e.g. the <u>information technology</u> (IT) industry

### **NSE-related**

3 How can the building of the 'Eco-city' in Tianjin achieve national security?



By building the 'Eco-city' in Tianjin, the environmental quality can be maintained.

## Conclusion

- Video resources
  - Aerial China
  - Institute for Planet
  - The China Current
- Teaching strategies
  - Themed lesson/ enquiry tasks
  - Reading Across Curriculum
  - Language writing exercise
  - Assignment planning
  - Small-scale enquiry
  - Appropriate selection of case study to enrich the understanding on national geography