



Science Notes

Bilingual Science
4th grade
2nd semester



Name: _____
Class: _____
Number: _____
Teacher: _____

Preface 前言

政府推動 2030 雙語政策，期基於臺灣已掌握華語使用的優勢，在專業知識之上，進一步強化我國人，尤其年輕世代的英語溝通能力，增強全球競爭力。（國家發展委員會 2020）；而如何提升國民英語溝通能力以增加國際競爭力，是學校教育中努力的目標。

有感於雙語教育及近年來我國積極培養學童STEAM (Science, Technology, Engineering, Arts, and Mathematics)結合科學、技術、工程、藝術，以及數學跨學科素養的教育趨勢，本校自108學年度開始試辦自然課程雙語教學，以英語營造生活情境中的科學，透過趣味科學實驗增進學童以英語來進行科學探究的興趣與能力。

這本科學筆記本是本校自然課程雙語教學團隊-陳美卿、林雨慶、劉容昇、范瑋庭以及2022年7月剛到任的外師Leonawen等教師所共同設計的；國立臺北教育大學雙語教學研究中心協助自然科學英語內容校對、編排及印製；教學過程中階段性的提高雙語的使用，以英語指導科學實驗步驟，透過動手做實驗來激發學童的科學探究潛能，期望學童可以紮紮實實的學習自然科學知識，提升學生英語聽說能力，以及把所學的英語運用在課堂上，啟發學童善用英語進行科學領域學習的能力，厚植學童的科學力及英語力，進而培養我國國際型人才與視野。

國北教大實小校長

祝勤捷

2023.02





Unit 1

Day and Night Sky

白天和夜晚的天空

Unit 1
Day and Night Sky
第一課
白天和夜晚的天空

Differences
between day and
night
日夜景象的不同

Daytime view
白天的景象

We can see the Sun during the day.
The Sun shines, so the day is brighter
and the temperature is higher.
白天能看到太陽,因為陽光照射,白天較明亮,氣溫也較高

Night view
夜晚的景象

We can see the Moon and stars at night.
Some stars are bright and some are dark.
夜晚能看見月亮和星星.星星有些亮,有些暗

Sun
太陽

Sun and shadow
太陽和影子

The shadow of an object is in the
opposite direction from the Sun.
物體形成的影子和太陽方位相反

Changes in Sun
position during the
day
一天中太陽位置的變化

At noon, the shadow is the shortest. In
the morning and afternoon, the shadow
is longer.
中午時,影子最短;上午和下午時,影子較長

Rise in the east and set in the west
從東方升起,由西方落下

Moon
月亮

The Moon I know
我知道的月亮

Half the surface of the Moon is
dark, and the other half is bright.
月亮表面有亮,有暗

We can see the Moon day and night.
白天和夜晚都能看見月亮

Changes in Moon
position
月亮的位置變化

Rise in the east and set in the west
從東方升起,由西方落下

Moon phase
月相

The Moon waxes and wanes. It takes the
Moon 29 to 30 days to go through its
different phases.
月相變化由圓到缺,由缺到圓,通常需29~30天

The lunar calendar is
based on the Moon phases.
農曆是根據月相變化而來



UNIT 1

Day and Night Sky

日期： /

應聽懂及認讀的生字

- | | | | |
|---------------------------------|-----------|--|--------------------|
| <input type="checkbox"/> 1. 日 | day | <input type="checkbox"/> 15. 月亮 | moon |
| <input type="checkbox"/> 2. 夜晚 | night | <input type="checkbox"/> 16. 表面 | surface |
| <input type="checkbox"/> 3. 白天 | daytime | <input type="checkbox"/> 17. 明亮的 | bright |
| <input type="checkbox"/> 4. 夜間 | nighttime | <input type="checkbox"/> 18. 亮度 | brightness |
| <input type="checkbox"/> 5. 天空 | sky | <input type="checkbox"/> 19. 黑暗的 | dark |
| <input type="checkbox"/> 6. 星星 | star | | |
| <input type="checkbox"/> 7. 太陽 | sun | <input type="checkbox"/> 20. 月相 | moon phase |
| <input type="checkbox"/> 8. 陽光 | sunlight | <input type="checkbox"/> 21. (月亮)漸圓(滿) | waxing |
| <input type="checkbox"/> 9. 位置 | position | <input type="checkbox"/> 22. (月亮)虧缺 | waning |
| <input type="checkbox"/> 10. 東方 | east | <input type="checkbox"/> 23. 蛾眉月 | crescent |
| <input type="checkbox"/> 11. 西方 | west | <input type="checkbox"/> 24. 滿月 | full moon |
| <input type="checkbox"/> 12. 陰影 | shadow | <input type="checkbox"/> 25. 新月 | new moon |
| <input type="checkbox"/> 13. 上升 | rise | <input type="checkbox"/> 26. 上弦月 | first quarter moon |
| <input type="checkbox"/> 14. 放 | set | <input type="checkbox"/> 27. 下弦月 | last quarter moon |
| | | | |
| | | <input type="checkbox"/> 28. 望遠鏡 | telescope |
| | | <input type="checkbox"/> 29. 陰曆 | lunar calendar |
| | | <input type="checkbox"/> 30. 羅盤 | compass |



1. We can see the Sun during the day. We can see the Moon at night.
2. The Sun rises in the east and sets in the west.
3. The Moon rises in the east and sets in the west.
4. The Moon waxes and wanes. It takes the Moon 29 to 30 days to go through its different phases.



Science Videos Unit 1

Solar Energy- the Sun's apparent daily movement



The Moon for Kids || Moon Phases for Kids || Astronomy for Kids



Day and Night Explanation, Causes Science for Kids



How the Sun affects the Earth | Science videos for kids | Kids Academy



Day and Night || video for kids



sun and shadow



The Apparent Path of the Sun



What causes day and night



Why Does the Moon Change?



Why Can I See the Moon During the Day?





NOTES



NOTES



NOTES



NOTES



Activity 1

Daytime and nighttime

What can you see?



Daytime

What can you see in the daytime?

I see _____

and _____.



Nighttime

What can you see at night?

I see _____

and _____.

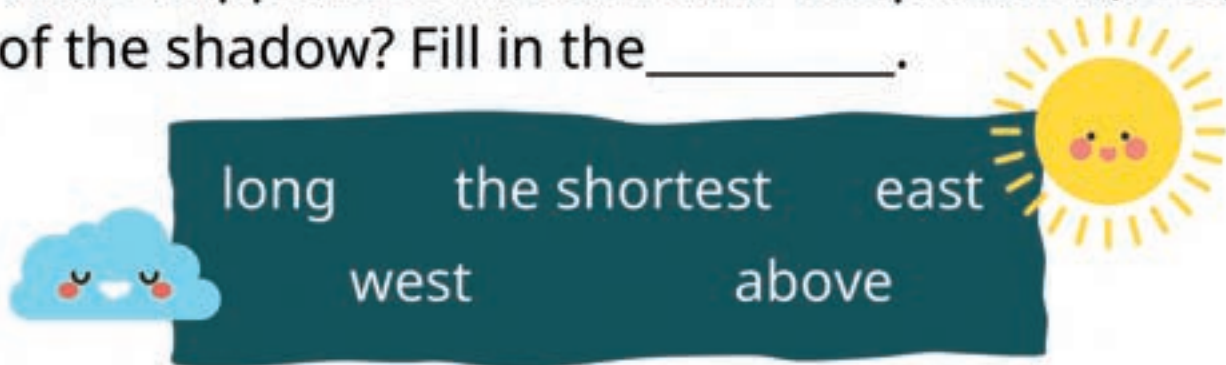
True or False

- () 1. We can also easily see stars when there is light pollution(光害).
- () 2. It is bright(明亮)during the day.

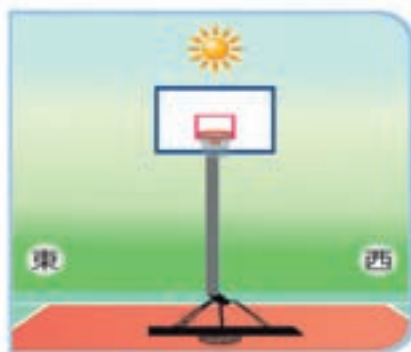
Activity 2

Sun and shadow

What happens to the size and the position(位置) of the shadow? Fill in the _____.



The Sun rises(升起) in the _____.
The shadow is _____ in the morning.



The Sun is _____ the basketball stand(籃球架).
The shadow is _____ at noon.



The Sun sets(落下) in the _____.
The shadow is _____ in the evening.

Activity 3 Moon phases

The changes we see in the shape of the Moon are known as Moon phases(月相).

Choose your answer from the work bank below.

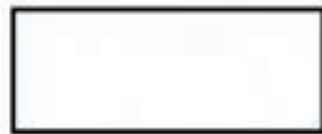
new moon

crescent moon

half moon

full moon

gibbous moon



3.上弦月



4.盈凸月



2.蛾眉月



5.滿月



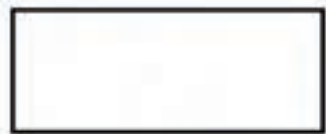
1.新月



6.虧凸月



8.殘月



7.下弦月



Let's Review



1. Every day, the Sun rises in the east and sets in the west. We can tell the time by looking at the Sun's position in the sky. Please check the correct time of day for each picture below.



sunrise morning noon



sunrise sunset afternoon



morning sunset afternoon

2. Complete(完成) the order(順序) of the Moon phase.





Unit 2

Water Movement

水的移動

Unit 2 Water Movement 第二課 水的移動

Properties of capillary action 毛細現象的特性



In nature
大自然中

Water flows from high to low.
水由高處往低處流動

Water movement
in slits
水在細縫中的移動

Materials that absorb water
have slits.
會吸水的物質都具有細縫

The size of slits affects how
water moves.
細縫大小會影響水的移動情形

Capillary action
in life
生活中的毛細現象

Many household items are
the application of capillary
action.
許多生活用品是應用毛細現象

Properties of
siphon
phenomenon
虹吸現象的特性

Conditions of
siphon
phenomenon
虹吸現象的條件

The water pipe needs to be
filled with water.
水管內需裝滿水

The water outlet must be
lower than the water surface.
出水口需低於水面

Properties of
U-tubes
聯通管原理的特性

Horizontal
phenomenon
水平的現象

When water is still, its
surface remains horizontal.
水靜止時,水面會維持水平

Fantastic U-tubes
奇妙的聯通管

When water is in containers with a
connected bottom, its surface will remain
at the same height.
水在底部相通的容器內,水面會保持相同高度

Applications of
U-tubes
聯通管的生活應用

To measure if an object is level
測量物品是否水平

For example, a thermos bottle with water
level device, a U-shaped pipe under the
sink, etc.
例如熱水瓶水位裝置,水槽下方U型管等



UNIT 2

Water Movement

日期： /

應聽懂及認讀的生字

- | | | | |
|---------------------------------------|-----------------------|-----------------------------------|-----------------|
| <input type="checkbox"/> 1. 水 | water | <input type="checkbox"/> 17. 管道 | pipe |
| <input type="checkbox"/> 2. 水的移動 | water movement | <input type="checkbox"/> 18. 管道原理 | pipe principle |
| <input type="checkbox"/> 3. 毛細現象 | capillary action | <input type="checkbox"/> 19. 水管 | water pipe |
| <input type="checkbox"/> 4. 水流 | water flow | <input type="checkbox"/> 20. 連接管 | connecting pipe |
| <input type="checkbox"/> 5. 裂縫 | slit | <input type="checkbox"/> 21. 洩漏 | leak |
| <input type="checkbox"/> 6. 高處 | high place | <input type="checkbox"/> 22. 洩漏 | leakage |
| <input type="checkbox"/> 7. 低處 | low place | <input type="checkbox"/> 23. 水泵 | water pump |
| | | | |
| <input type="checkbox"/> 8. 虹吸管 | siphon | <input type="checkbox"/> 24. 水力馬達 | water motor |
| <input type="checkbox"/> 9. 虹吸現象 | siphon phenomenon | <input type="checkbox"/> 25. 水位 | water level |
| <input type="checkbox"/> 10. 橫向現象 | horizontal phenomenon | <input type="checkbox"/> 26. 出水口 | water outlet |
| <input type="checkbox"/> 11. 吸收 | absorb | <input type="checkbox"/> 27. 淨水器 | water filter |
| <input type="checkbox"/> 12. 能吸收(液體)的 | absorbent | <input type="checkbox"/> 28. 水容器 | water container |
| <input type="checkbox"/> 13. 傾斜的 | tilted | <input type="checkbox"/> 29. 自來水 | tap water |
| <input type="checkbox"/> 14. 水平的 | horizontal | | |
| <input type="checkbox"/> 15. 容器 | tank | | |
| <input type="checkbox"/> 16. 水族館 | aquarium | | |



1. Capillary action is the ability of water to move up in narrow spaces without the help of an outside force.
2. In the siphon phenomenon, the water pipe needs to be filled with water and the water outlet must be lower than the water surface.
3. Water flows in water pipes or containers connected at the bottom.

Science Videos Unit 2

How Does Water Get to Your House?



Curious George 🌐 George's Simple Siphon



The Color-Changing Celery Experiment!



Capillary Water



Capillary Action Experiment | Water and Our World | The Good and the Beautiful



Kid Experiments: Syphon - Darwin and Newtons



The Water. Looking after our Planet | Educational Video for Kids.



How Your Home Plumbing Works (From Start to Finish) | GOT2LEARN



NOTES



NOTES



NOTES



NOTES



Activity 1

Capillary action



Use the words below to fill in the _____.

faster

slower

up

down

capillary action

What is **capillary action**?

When water moves _____
through narrow spaces, we call
it _____.



1) The thinner paper absorbs water _____

2) The thicker paper absorbs water _____



What are examples of capillary action? Circle them.



The root of the
plant absorbs water.
植物的根吸收水分



The sponge
absorbs water.
海綿吸水



Water flows from
high to low.
水從高處往低處流

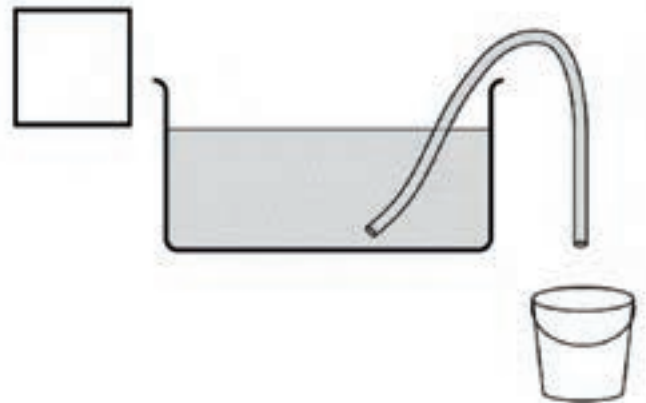
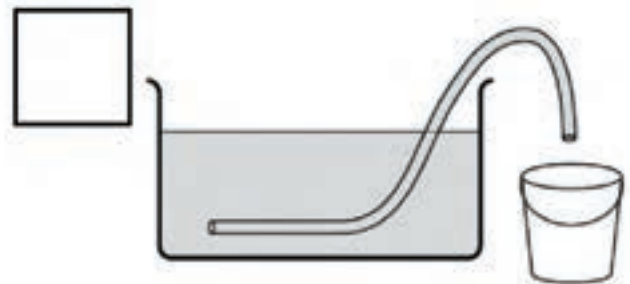
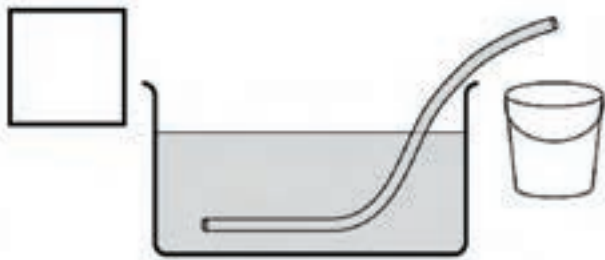


We write with a
Chinese brush.
用毛筆沾墨汁寫字

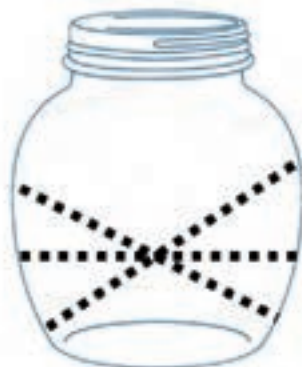
Activity 2

Siphon

1. Will the water flow out of the pipe? Please check , if it will flow out of the pipe.



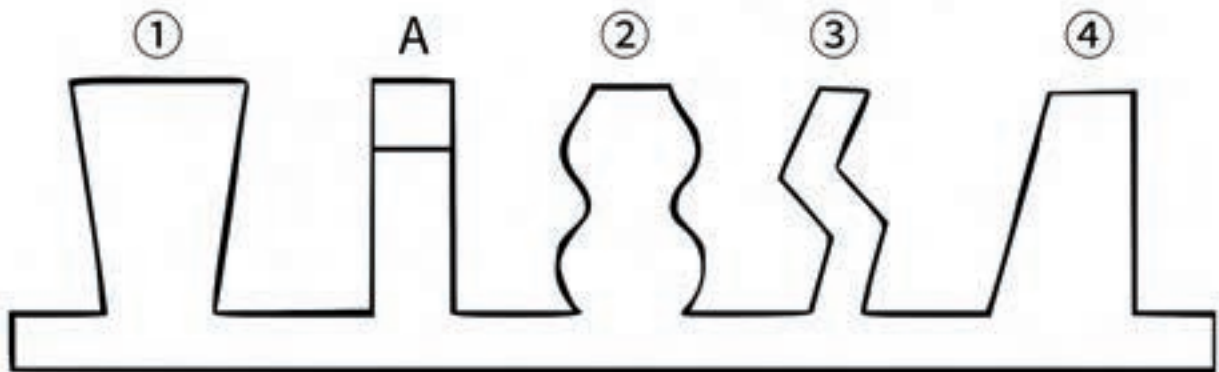
2. Please draw the horizontal plane.



Activity 3

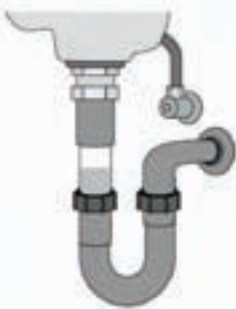
Connecting pipes

1. Please draw the water height in picture ① ② ③ ④ .



2. What are examples of connecting pipes?

Please check .



The U-shaped pipe under the sink
洗手台下的U型管



The thermos bottle with water level device
有水位裝置的保溫瓶



Writing with a Chinese brush
用毛筆沾墨汁寫字



The melting of ice
冰塊的溶化



Let's Review

What will these flowers look like? Color them and fill in the _____.



absorb up capillary action

A plant uses _____ to _____ water.
Its stem is like a straw. The water goes
_____ through the stem and moves to
different parts of the plant.

Unit 3

Demystifying Insects

昆蟲大解密



Where are insects?
昆蟲在哪裡

How to find insects
如何找昆蟲的位置

Find the reference point
找出參照點

Determine the direction and distance
確定方位與距離

How do insects change and grow?
昆蟲如何成長變化

Characteristics
特徵

Head
頭部

Eyes, antennae
眼睛, 觸角

Thorax
胸部

Six legs, wings
六隻腳, 翅膀

Abdomen
腹部

Unit 3
Demystifying Insects
第三課
昆蟲大解密

Complete metamorphosis
完全變態

Egg, larva, pupa, adult
卵, 幼蟲, 蛹, 成蟲

Incomplete metamorphosis
不完全變態

Egg, nymph, adult
卵, 若蟲, 成蟲

Are insects important?
昆蟲重要嗎

Nature
大自然

Animals, plants
動物, 植物

Human
人類

Life/lives
生活

UNIT 3

Demystifying Insects

日期： / /

應聽懂及認讀的生字

- | | | | |
|----------------------------------|------------------|-----------------------------------|---------------|
| <input type="checkbox"/> 1. 昆蟲 | insect | <input type="checkbox"/> 21. 生命週期 | life cycle |
| <input type="checkbox"/> 2. 蝴蝶 | butterfly | <input type="checkbox"/> 22. 變態 | metamorphosis |
| <input type="checkbox"/> 3. 蜜蜂 | bee | <input type="checkbox"/> 23. 孵化 | hatch |
| <input type="checkbox"/> 4. 蚊子 | mosquito | <input type="checkbox"/> 24. 蛋 | egg |
| <input type="checkbox"/> 5. 蟑螂 | cockroach | <input type="checkbox"/> 25. 幼蟲 | larva/larvae |
| <input type="checkbox"/> 6. 螞蟻 | ant | <input type="checkbox"/> 26. 蛹 | pupa/pupae |
| <input type="checkbox"/> 7. 蜻蜓 | dragonfly | <input type="checkbox"/> 27. 成人 | adult |
| <input type="checkbox"/> 8. 蛾 | moth | <input type="checkbox"/> 28. 若蟲 | nymph |
| <input type="checkbox"/> 9. 甲蟲 | beetle | | |
| <input type="checkbox"/> 10. 蟋蟀 | cricket | <input type="checkbox"/> 29. 蜜糖 | honey |
| <input type="checkbox"/> 11. 竹節蟲 | stick bug | <input type="checkbox"/> 30. 登革熱 | dengue |
| <input type="checkbox"/> 12. 棲息地 | habitat | <input type="checkbox"/> 31. 衣服 | clothing |
| | | <input type="checkbox"/> 32. 棉布 | cotton |
| <input type="checkbox"/> 13. 頭 | head | <input type="checkbox"/> 33. 害蟲 | pest |
| <input type="checkbox"/> 14. 胸部 | thorax | | |
| <input type="checkbox"/> 15. 腹部 | abdomen | | |
| <input type="checkbox"/> 16. 觸角 | antenna/antennae | | |
| <input type="checkbox"/> 17. 眼睛 | eye | | |
| <input type="checkbox"/> 18. 腿 | leg | | |
| <input type="checkbox"/> 19. 六條腿 | six legs | | |
| <input type="checkbox"/> 20. 翅膀 | wing | | |



1. An insect's body is divided into head, thorax, abdomen, eyes, antennae, legs, and wings.
2. Insects go through a process called metamorphosis. Complete metamorphosis has four stages: egg, larva, pupa, and adult.
3. Some insects are helpful to our lives. They bring honey. Others are harmful pests. They spread dengue.

Science Videos Unit 3



Life Cycle of a Butterfly *ANIMATION

Life Cycle of a Butterfly



Life cycle of a butterfly 4k HD || From eggs to full grown butterflies *REAL LIFE



Life Cycle of European Rhinoceros Beetle (Oryctes nasicornis)



10 Interesting Insects || Insects for Kids || Bugs for Kids



Inspect An Insect



All About Insects for Children: Bees, Butterflies, Ladybugs, Ants and Flies for Kids



Insects | Educational Videos for Kids (Body parts)



Why are insects important?



NOTES



NOTES



NOTES





NOTES



Activity 1

Where are insects?



Match the pictures.



Ant 螞蟻



Rhinoceros beetle 獨角仙



Dragonfly 蜻蜓



Butterfly 蝴蝶



Over the water
在水面上



In the trees
在樹上



Among the flowers
在花叢中



Activity 2

How do insects grow and change?

Fill in the _____ to complete the insect life stages.

adult	nymph	egg
pupa	larva	

1.



_____ (卵)



_____ (蛹)



_____ (幼蟲)



_____ (成蟲)

2.



_____ (卵)



_____ (若蟲)



_____ (成蟲)

Activity 3

Are insects important?

What can insects do? Circles the picture(s).



Dung beetles can break down wastes of animals.
糞金龜能分解動物排泄物



Some insects help flowers reproduce.
有些昆蟲幫助花朵傳播花粉繁殖



Insects can clean the air.
昆蟲可以淨化空氣

What are the influences insects bring to people?

If good, put V into the . If bad, put X into the .



Making honey
製造蜂蜜



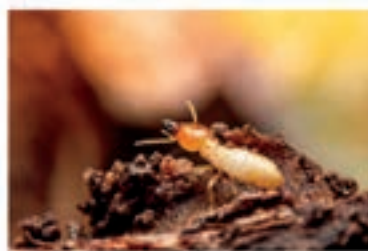
Eating the crops
吃掉作物



Making silk used for clothing
吐出製作衣物用的絲線



Spreading dengue fever
傳播登革熱



Being Pests
是有有害的害蟲

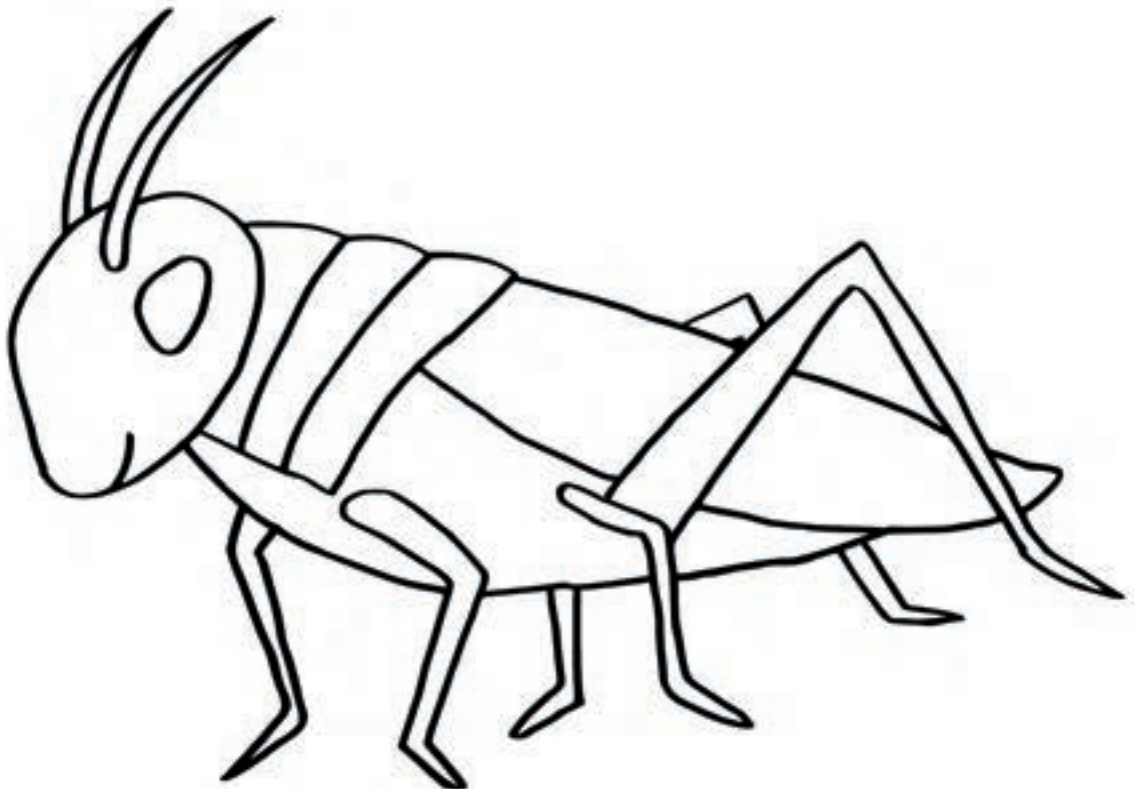


Let's Review

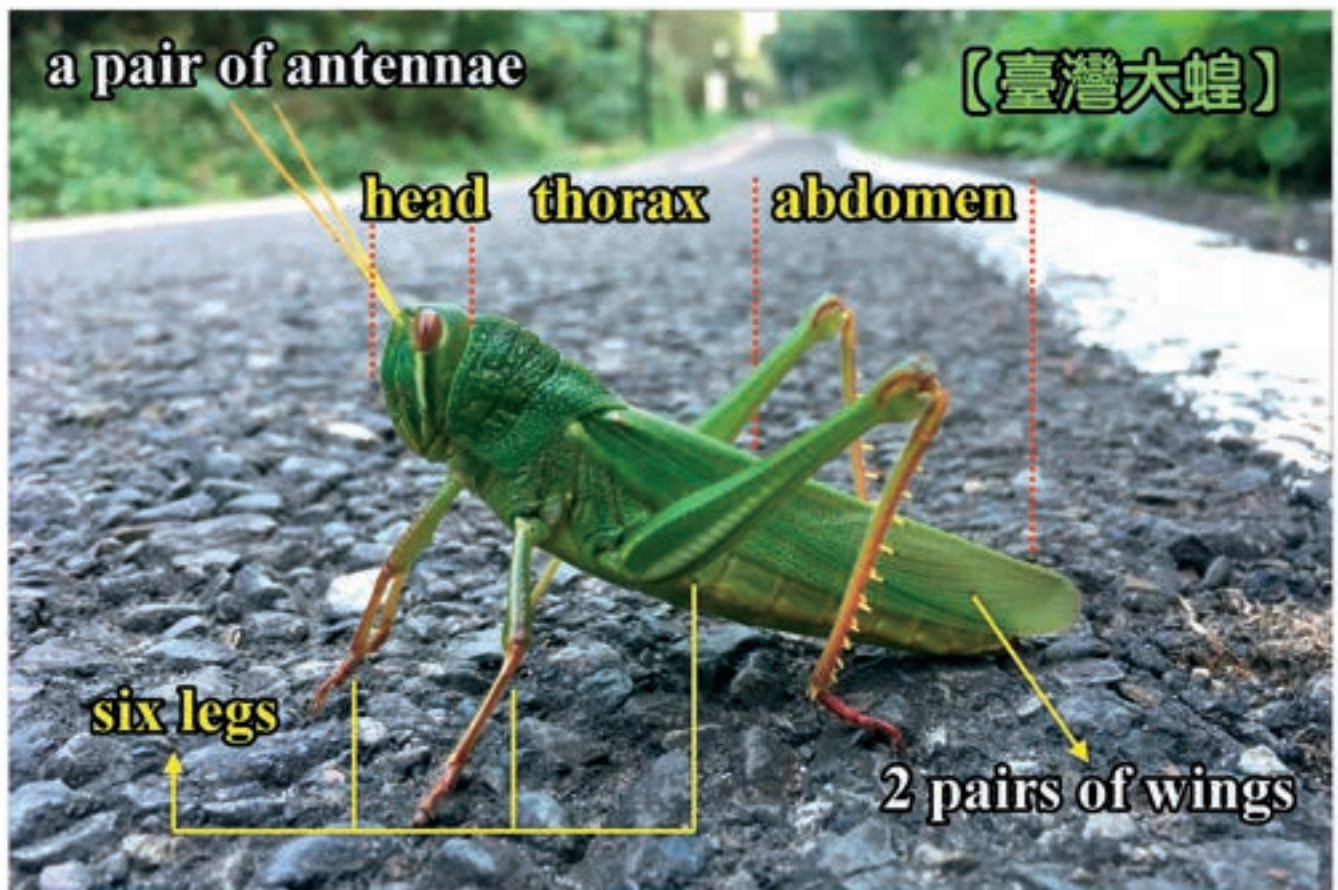


This is a grasshopper. It has three body parts:
head, thorax, and abdomen.

Color the **head** red. Color the **thorax** orange.
Color the **abdomen** yellow. Color the **eye** green.
Color the **antennae** blue. Color the six **legs** purple.
Color the **wings** pink.



Let's Review



Unit 4

Utilization of Natural Resources

自然資源與利用



Unit 4 Utilization of Natural Resources 第四課 自然資源與利用

Is energy important?
能量重要嗎

We need energy.
我們需要能量

The Earth gets warmth and light from the Sun.
地球的溫暖與光亮源自於太陽

Plants and animals on Earth depend on sunlight to grow.
地球的植物與動物依賴陽光成長

Energy is the ability to do work. We need energy to make an object move or change.
能量是具有做功的能力。我們需要獲取能量讓物體運動或改變

Different forms of energy
不同形式的能量

There are different forms of energy, such as light, heat, and electricity.
能量有光能,熱能,電能等不同的形式

What provides energy, we called it a source of energy. 能量的來源稱為能源

Energy in life
生活中的能源

The Sun, water, electricity, wind, and different types of fuel are common sources of energy. Some of them are also used to generate electricity.
太陽,水,電,風和各種燃料都是常見的能源。有些還可用來發電。

We also depend on sunlight to generate fossil fuels. 化石燃料也是依賴陽光生成。

Food, clothing, housing, and transportation 食衣住行
Daily necessities 生活用品



How to use natural resources
如何運用自然資源

Natural resources
自然資源

Can be divided into biological resources and non-biological resources
可分為生物資源與非生物資源
Biological resources are mostly renewable.
生物資源多可再生

Use of natural resources
自然資源的運用

Petroleum (Oil) can be used as energy or as a material.
石油可以當能源使用,也能當材料使用



Impact of developing natural resources
開發自然資源的影響

Impact of development and application
開發及應用的影響

Both biological and non-biological resources may be exhausted if they are improperly used.
生物和非生物資源若不當使用,均有可能耗盡。



Environmental action
環保行動

Understand the environmental problems caused by the development of resources
了解開發資源可能造成的環境問題

Understand the causes of environmental problems and their solutions
了解環境問題的成因與解決方法

How to take action to protect the environment
如何採取行動去保護環境



UNIT 4

Utilization of Natural Resources

日期： / /

應聽懂及認讀的生字

- | | | | |
|-------------------------------------|----------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> 1. 能量；能源 | energy | <input type="checkbox"/> 24. 消耗 | consumption |
| <input type="checkbox"/> 2. 自然資源 | natural resource(s) | <input type="checkbox"/> 25. 電 | electricity |
| <input type="checkbox"/> 3. 生物資源 | biological resource(s) | <input type="checkbox"/> 26. 可再生能源 | renewable energy |
| <input type="checkbox"/> 4. 植物 | plant | <input type="checkbox"/> 27. 不可再生能源 | nonrenewable energy |
| <input type="checkbox"/> 5. 動物 | animal | <input type="checkbox"/> 28. 化石燃料 | fossil fuel(s) |
| <input type="checkbox"/> 6. 非生物資源 | non-biological resource(s) | <input type="checkbox"/> 29. 煤炭 | coal |
| <input type="checkbox"/> 7. 陽光 | sunlight | <input type="checkbox"/> 30. 汽油 | gasoline |
| <input type="checkbox"/> 8. 風 | wind | <input type="checkbox"/> 31. 天然氣 | natural gas |
| <input type="checkbox"/> 9. 水 | water | | |
| <input type="checkbox"/> 10. 燃料 | fuel | | |
| | | | |
| <input type="checkbox"/> 11. 能量形式 | form(s) of energy | <input type="checkbox"/> 32. 環境問題 | environmental problem(s) |
| <input type="checkbox"/> 12. 光能 | light energy | <input type="checkbox"/> 33. 過度開發 | overexploitation |
| <input type="checkbox"/> 13. 熱能 | heat energy | <input type="checkbox"/> 34. 污染 | pollution |
| <input type="checkbox"/> 14. 動能 | kinetic energy | <input type="checkbox"/> 35. 空氣污染 | air pollution |
| <input type="checkbox"/> 15. 勢能(位能) | potential energy | <input type="checkbox"/> 36. 水污染 | water pollution |
| <input type="checkbox"/> 16. 聲能 | sound energy | <input type="checkbox"/> 37. 塑料垃圾 | plastic waste |
| <input type="checkbox"/> 17. 核能 | nuclear energy | | |
| <input type="checkbox"/> 18. 地熱能 | geothermal energy | | |
| | | | |
| <input type="checkbox"/> 19. 食物 | food | <input type="checkbox"/> 38. 環境保護 | environmental protection |
| <input type="checkbox"/> 20. 衣服 | clothing | <input type="checkbox"/> 39. 減少 | reduce |
| <input type="checkbox"/> 21. 住房 | housing | <input type="checkbox"/> 40. 重用 | reuse |
| <input type="checkbox"/> 22. 運輸 | transportation | <input type="checkbox"/> 41. 回收 | recycle |
| <input type="checkbox"/> 23. 日用品 | daily necessities | | |



1. The Sun is the main source of energy. Plants and animals depend on sunlight to grow.
2. We can divide the sources of energy into two groups: biological (plants and animals) and non-biological (sun, wind, water and fuel).
3. Overexploitation of energy may lead to exhaustion and pollution to Earth. So we need to follow the 3Rs principle: Reduce, Reuse, and Recycle.



本頁完成日期： / /



Science Videos Unit 4

What Is Energy Lesson for Kids



How to Take Care of the Environment -
10 Ways to Take Care of the Environment



Renewable Energy Sources - Types of
Energy for Kids



What Are Sources of Energy? | Energy Explained |
The Dr Binocs Show | Peekaboo Kidz



Environmental protection



Energy | The Dr. Binocs Show | Educational
Videos For Kids



Reduce, Reuse and Recycle, to enjoy a better life |
Educational Video for Kids.



How are Fossil Fuels Formed? |
Coal, Oil & Natural Gas



Climate Change and the Greenhouse Effect |
Educational Videos for Kids



NOTES





NOTES



NOTES





NOTES





Activity 1

Is energy important?

What types of energy are they in the pictures below?

electrical energy

light energy

heat energy

nuclear energy

potential energy

sound energy



_____ (勢能、位能)



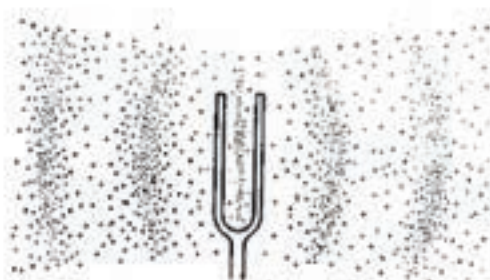
_____ (熱能)



_____ (光能)



_____ (電能)



_____ (聲能)



_____ (核能)

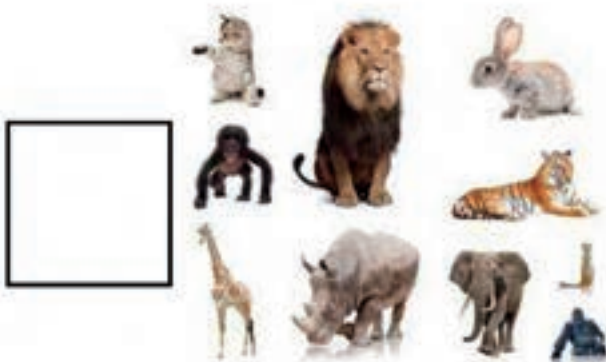


Activity 2

How do we divide natural resources?

Draw ● if they are biological resources.

Draw ▲ if they are non-biological resources.



Animals



Sun



Coals



Plants



oil





Activity 3

How do we impact the environment?

If it is good for the environment, draw



If it is bad for the environment, draw



Overuse plastic products
過度使用塑膠產品



Take public transportation
搭乘大眾交通工具



Overfishing
過度捕撈



Use rice washing water to water plants
用洗米水澆花





Let's Review



What is energy?

move work

Energy is the ability to do _____.

We need energy to make an object _____ or change.

What energy do they need?

1. Match the pictures with the kinds of energy they need to work.
2. Is the energy renewable? Please check.
3. If not, can you save it? What can you do to protect the environment? Circle your answer.

R : Renewable
N : Non- Renewable



Solar energy

R N

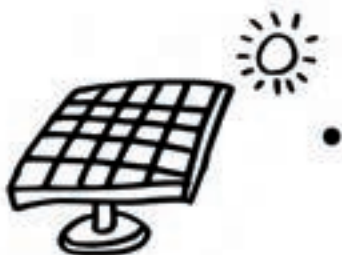
What to do to protect the environment:
Install(安裝) more / less
solar panels(太陽能板)



Petroleum Energy

R N

What to do to protect the environment:
Drive your own car/
Take public transportation



Electrical Energy

R N

What to do to protect the environment:
Turn on / off the light when you leave
the room



Science Notes

Bilingual Science
4th grade
2nd semester

Authors

陳美卿、林雨慶、劉容昇、范瑋庭、Leonawen

Editors

簡雅臻、林欣宜、陳巧軒

Graphic designer

陳巧軒

國立臺北教育大學附設實驗國民小學 / 國立臺北教育大學雙語教學研究中心