

Bilingual Science 3rd Grade 1st Semester Name: Class: Number: Teacher: 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

Preface 前言

CECTOROLO PARA CONTRACTOROLO C

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。

這本科學筆記本是國北教大簡雅臻教授、本校自然課程雙語教學團隊陳美卿、林雨慶、吳雅蓁、范瑋庭以及外師 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

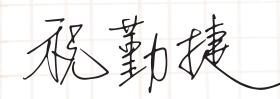


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Plants 認識植物 Plants are living things. 植物是有生命的東西。 Plants need sunlight, air, water, and soil to grow. 植物生長需要陽光、空氣、水和土壤。 **Features** 特徵 **Taproots** Woody stems 軸根 木本莖 Soft green stems Fibrous roots Root 草本莖 鬚根 根 Vine stems 藤本莖 Stem *** Alternate leaves Calyx 互生葉 花萼 Opposite leaves Leaf 對生葉 Petal 葉 花瓣 Whorled leaves 輪生葉 Main parts Stamen Flower 主要構造 雄蕊 花 Pistil 雌蕊 Fruit 果實 Roots hold the plant in the soil. 根把植物固定在土壤裡。 Seed 種子 Stems hold the plant upright. 莖支撐著植物。 Leaves use sunlight to make nutrients. Growth 葉子利用陽光來製造養分。 生長 **Functions** Flowers attract insects for pollination. 功能 花吸引昆蟲授粉。 Fruits carry and protect seeds. Reproduction 果實幫助種子傳播並保護種子。 繁殖 Seeds grow into new plants. 種子幫助植物繁殖。 4

Unit 1

Plants 認識植物

ate		
ІЗТО		
att		

應聽懂及認讀的生字

□ 生物 living thing □ 非生物 non-living thi □ 植物 plant	ng		養分 nu 支撐 su _l 固定 fix	pport	
			吸收 ab		
□ 根 root □ 莖 stem □ 葉子(單數) leaf □ 葉子(複數) leaves				tiole	
□ 花 flower □ 果實 fruit □ 種子 seed	□ 空氣 air □ 水 water □ 陽光 sunlight		 leaf a 互生 alto 対生 opp		nt :
Plants in our life 生活中	的植物:		a生 opp a生 wh		
□ 食 food:米飯 rice □ 衣 clothing:棉質衣店□ 住 housing:小木屋 c□ 行 transportation:オ□ 育 education:植物園□ 樂 entertainment:布	cabin C橋 wooden bridge I botanical garden	/ 互	生葉序	輪生葉序	對生葉序
□ 軸根 taproot □ 鬚根 fibrous root	□ 木本莖 woody stem □ 草本莖 soft green st □ 藤本莖 vine stem	em	□ 雄z □ 花新	蕊 pistil 蕊 stamen ጬ petal 萼 calyx	
·	5. parts: roots, stems, leaves 、莖、葉、花、果實和種子等		, fruits,	and seed	S.
3. Plants play an importa 植物和人們的生活關係密					

Science Videos Unit 1

1-1 Parts of a Plant





Plant Structures





Grow Your Own Plants





The Needs of a Plant





Plant Parts and Functions for Kids





Parts of a Plant: **Definitions and Functions**



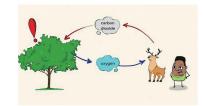


How Do Plant Seeds Travel?





Why Plants and Sunlight Are So Important to Humans and Animals?

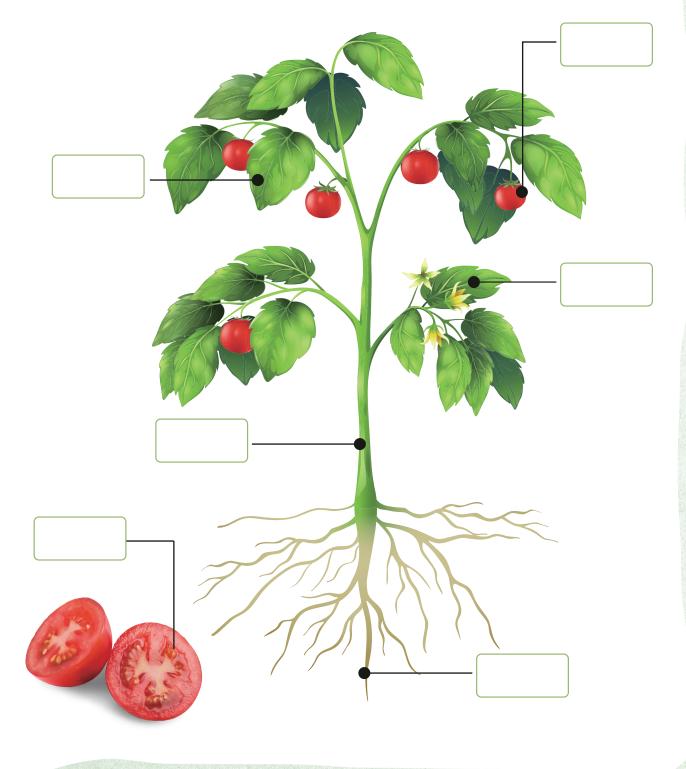




Parts of a Plant

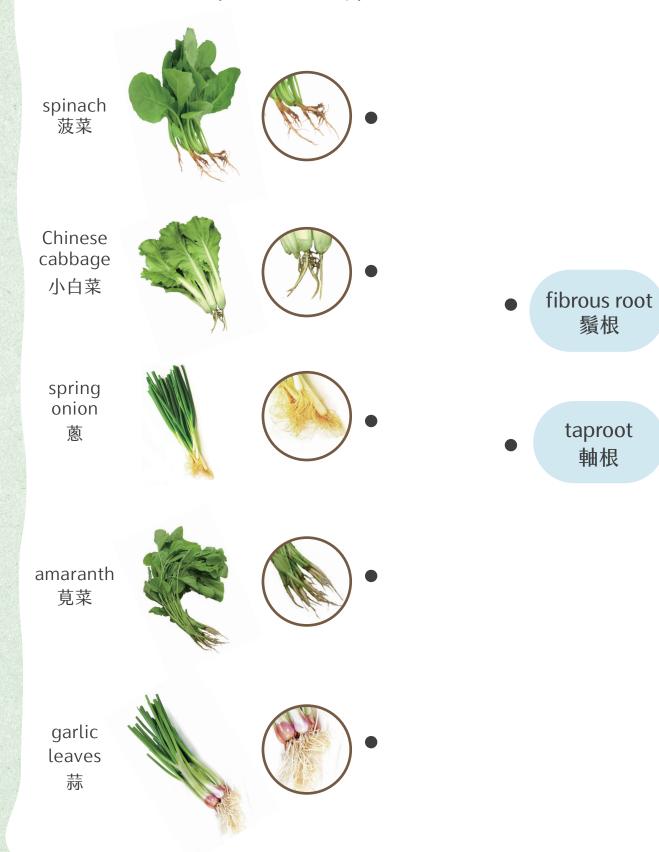
Write the parts of the plant inside the boxes.

flower fruit leaf root seed stem



Roots

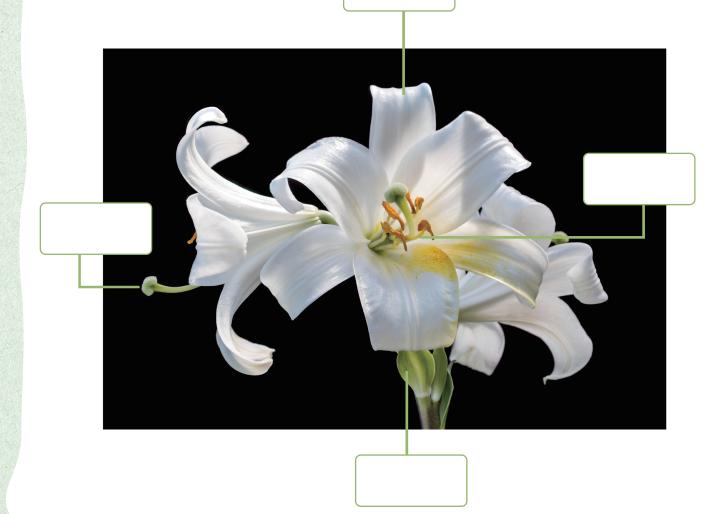
Match each plant to its type of roots.



Flowers

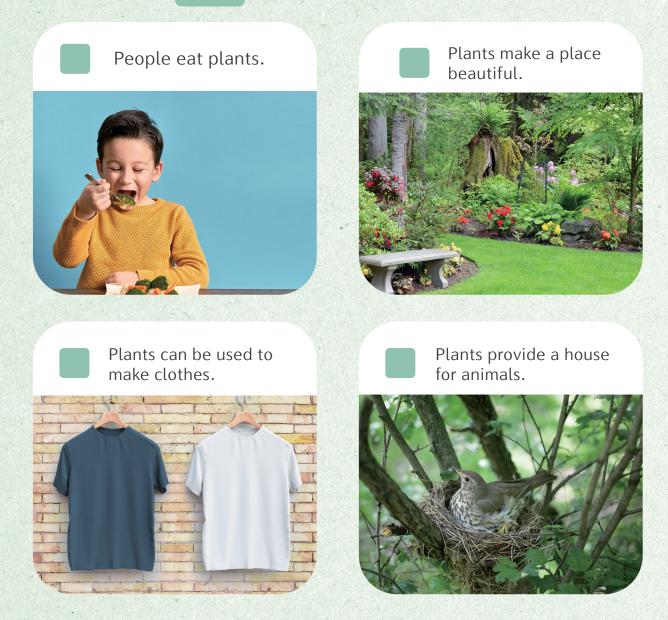
• Write the parts of the flower inside the boxes.

calyx petal pistil stamen



Uses of Plants

Which of these pictures show the use of plants? Put a check
 ✓ inside the boxes.



• How else do people use plants? Draw it below.



Air and Water 空氣和水

Air is everywhere.

空氣無所不在。

Air takes up space and has weight. 空氣佔有空間,具有重量。

Properties 特性

Air does not have a specific shape. 空氣沒有固定的形狀。

Air can flow. 空氣會流動。

Air can be compressed. 空氣可以被擠壓。

We breathe air. 我們呼吸空氣。

Air helps spread seeds around. 空氣傳播植物的種子。

Air powers a sailboat. 空氣為帆船提供動力。

Air provides wind energy. 空氣提供風能。

Clean air 乾淨的空氣

Uses 用途

Clean and fresh air keeps us healthy. 乾淨清新的空氣能使我們保持健康。

We should go green to keep air clean. 我們要愛護環境,維持空氣乾淨的品質。

Unit 2 Air and Water 空氣和水

Date	•		
Date	•		

應聽懂及認讀的生字

□ 空氣 air	□ 塑膠袋 plastic bag
□ 石頭 rock	【 □ 紙團 paper ball
□ 水 water	│ 玻璃杯 glass
□ 風 wind	└ □ 頭髮 hair
□ 重量 weight	□ 旗子 flag
□ 擠壓 compress / squeeze	□ 風車 windmill
	│ □ 紙風車 pinwheel
BB	
□ 空間 space	
□ 形狀 shape	□ 空氣污染 air pollution
□ 氣球 balloon	i □ 空氣品質 air quality
□ 游泳圈 swim ring	1
□ 籃球 basketball	i
1 4:	
1. Air is everywhere.	
空氣無處不在。	
2. Air takes up space and has weight.	
空氣佔有空間,具有重量。	
3. Air does not have a specific shape.	
空氣沒有固定的形狀。	
4. Wind is moving air. When the air mov	es faster, the wind gets stronger.
風是流動的空氣。空氣流動得越快,風京	就越大。
5. If we let out compressed air, its force	e can make an object move.
如果我們釋放出被擠壓的空氣,它的力量	量可以使物體移動。

Science Videos Unit 2

2-1 What is Air?





2-1 Air around Us





2-1 Air Occupies Space





Properties of Air





Characteristics of Air





Properties of Air and Water





Air Pollution 101





Air Pollution





Properties of Air

Can you find air by using your…



ears?

YES / NO



eyes?

YES / NO



nose?

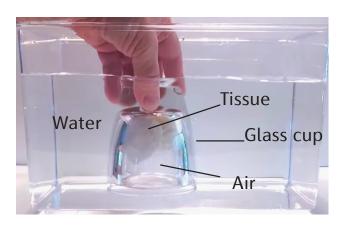
YES / NO



hand?

YES / NO

Look at the picture below.



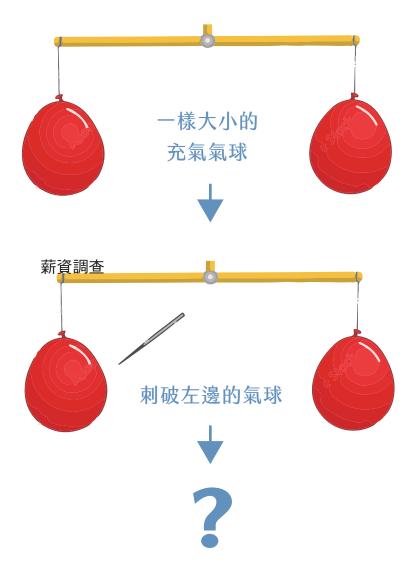
The tissue in the cup does not get wet by water because air takes up the space inside.

杯子裡的紙巾不會被水弄濕, 因為空氣占有空間。

• How else does air take up space? Draw it below.

Air Has Weight

Look at the picture below.

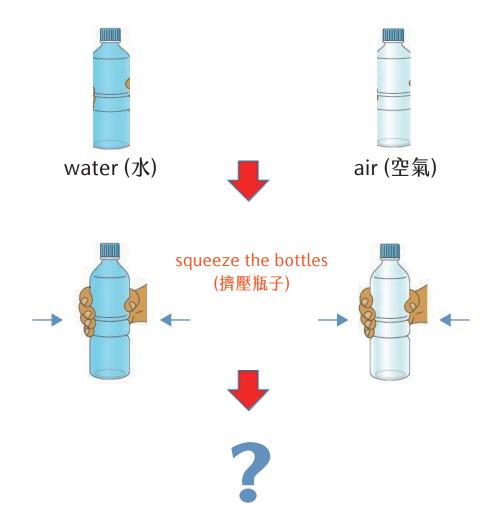


What happens next? Draw and explain why.

/	
l e	
I and the second se	
I and the second se	
I	
ı	

Air Can Be Compressed

• Look at the picture below.



What happens next? Draw your prediction and observation.

prediction observation

Air Pollution

Which of these items are sources of air pollution?
 Circle if they are and if they are not.



electric car (電動車)







bicycle (腳踏車)







boat (小船)







hydroelectric power plant (水力發電廠)







fossil fuel car (汽車)







motorcycle (摩托車)







ship (大型船隻)





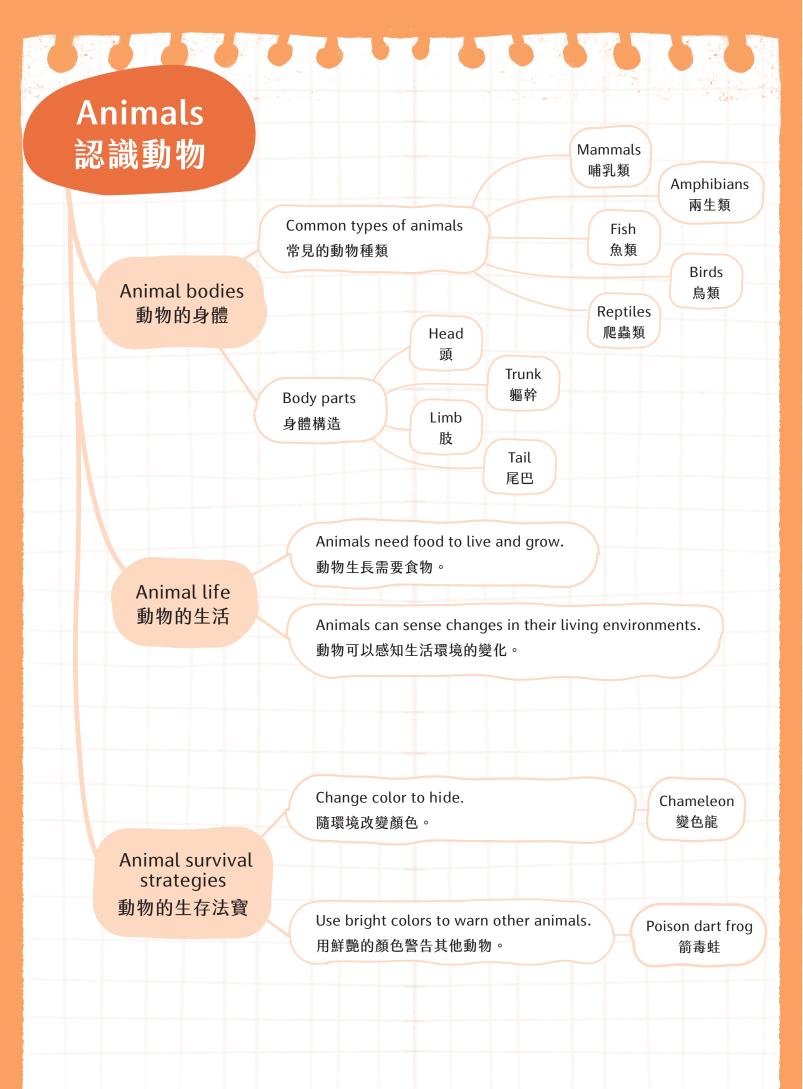


thermal power plant (火力發電廠)









Unit 3 認識動物

Animals

Date	9 .		

應聽懂及認讀的生字

□ 動物 animat □ 身體構造 body structure □ 功能 function □ 頭 head □ 軀幹 trunk □ 肢 limb □ 翅膀 wing □ 尾巴 tail	□ 環境 environment □ 棲息地 habitat □ 天空 sky □ 陸地 land □ 水 water □ 食物 food
□ 哺乳動物 mammal □ 兩棲動物 amphibian □ 魚 fish □ 鳥 bird □ 爬行動物 reptile	□ 適應 adaptation □ 保護 protect □ 生存 survive □ 鮮豔的色彩 bright colors □ 形狀 shape □ 保護色、偽裝 camouflage

- 1. Most animals have a head, a trunk, and limbs. 動物大多都有頭、軀幹和四肢。
- 2. There are different types of animals, like mammals, amphibians, fish, birds, and reptiles. 動物有不同的類型,如哺乳動、兩棲動物、魚類、鳥類和爬行動物。
- 3. Animals have different habitats and eat different kinds of food. 不同的動物有不同的棲息地,而且吃不同的食物。
- 4. Animals protect themselves through their color or shape. 動物通過它們的顏色或形狀來保護自己。
- 5. We should love and protect animals. 我們應該要愛護動物。





本頁完成日期:

Science Videos Unit 3

Mammals and Birds





Reptiles, Amphibians, and Fish





Animal Structures and Functions





Habitats for Kids





Animals and Their Food





Animals in the Environment





This Is How Animals Defend Themselves against Predators





Animal Protection around the World





Body Parts of Animals

• Fill in the boxes with the correct names of the animal body parts.

head tail trunk wing(s) legs

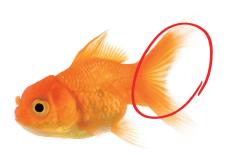


A lion has four



A bird has two

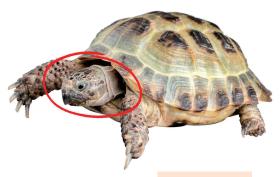
to fiy.



A fish has a



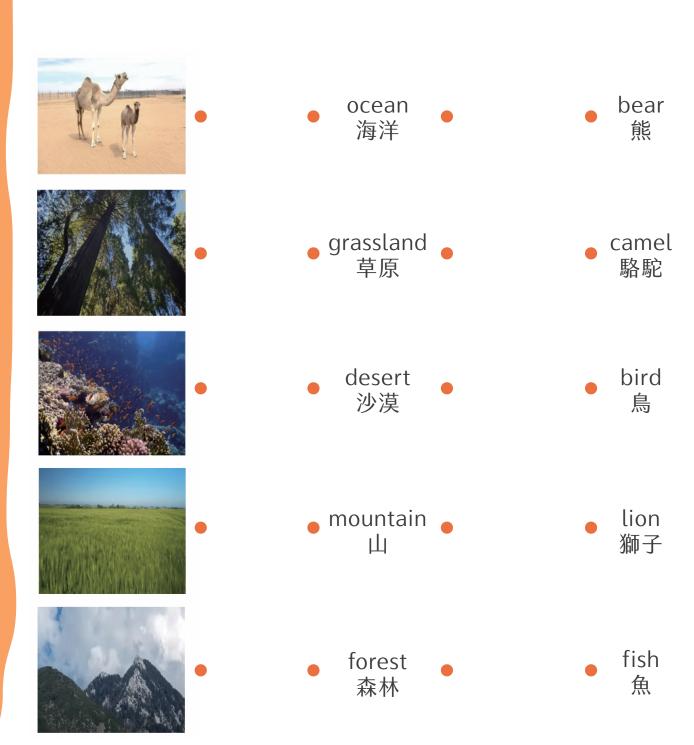
An ox has a big



A turtle has a

Habitats

 Match the pictures to the correct habitats and the habitats to the correct animals.



Animal Protection: I Can Do ...

How can we protect animals?
 Pick the correct answers and write them down.

I can protect animals by

- throwing trash on the ground
- using a lot of plastic bags (塑膠袋)
- keeping our environment clean



I can protect animals by

- eating endangered animals (瀕臨絕種的動物)
- bringing free birds home as pets (寵物)
- leaving birds in the wild (野外)



Let's Review

• Fill in the blanks using the words below.

water colors mammals wings limbs birds

- 1. Most animals have a head, a trunk, and ______.
- 2. There are different types of animals. Rabbits and dogsare . They have fur or hair on their bodies.
- 3. Eagles and parrots are ______.They have _____ and can fly in the sky.



- 4. Different animals live in different environments.

 For example, fish lives in ______. You might see fish in rivers, lakes, or the sea.
- 5. Animals use different ways to protect themselves.

 Some animals use bright ______ to warn other animals to stay away.









Magnets 磁鐵



Magnetic force 磁力

Magnetic objects 能被磁鐵吸引的物品

Non-magnetic objects 不能被磁鐵吸引的物品

Paper clip, Binder clip, Iron can 迴紋針、長尾夾、鐵罐

Aluminum can, Pencil, Coin 鋁罐、鉛筆、錢幣

The magnetic force is stronger at the ends of the bar magnet.

磁鐵條的兩端磁力較強。

Properties 磁鐵的特性 Like poles repel each other. 同極相斥。

Unlike poles attract each other. 異極相吸。

Magnets and life

Everyday uses 生活中的應用

Purse, Screwdriver, Fridge Magnet 錢包、螺絲起子、冰箱磁鐵

磁鐵與生活

Special uses 特別的應用

Putting iron plates on two sides of a magnet can make it stronger. 在磁鐵上下兩側增加鐵片可以增強磁力。

Creative uses 創意的應用

We can create fun games with magnets. 設計好玩的遊戲。



Unit 4 Magnets 磁鐵

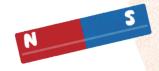
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應聽懂及認讀的生字

□ 1. 磁鐵 magnet	
□ 2. 磁性 magnetism	
□ 3. 磁力 magnetic force	
□ 4. 磁極 magnetic pole	
□ 5. N極 N pole	
□ 6. S極 S pole	
□ 0.3 個 3 pote	
□ 7. 吸引 attract	
□ 8. 排斥 repel	
□ 9. 推 push	
□ 10. 拉 pull	
□ 11. 強 strong	
□ 12. 弱 weak	
□ 13. 車票 ticket	
□ 14. 金融卡 debit card	
□ 15. 存摺 bankbook	

- □ 16. 鐵 iron □ 17. 迴紋針 paper clip □ 18. 長尾夾 binder clip □ 19. 鐵罐 iron can □ 20. 鉛筆 pencil □ 21. 橡皮擦 eraser □ 22. 硬幣 coin
- □ 23. 書籤 bookmark □ 24. 鑰匙圈 key ring □ 25. 錢包 purse □ 26. 螺絲起子 screwdriver □ 27. 冰箱磁鐵 fridge magnet □ 28. 遊戲 game □ 29. 鐵片 iron plate
- □ 30. 沙子 sand
- 1. When a thing has iron in it, magnets can attract it. 磁鐵可以吸引鐵製品。
- 2. A magnet has north and south magnetic poles. 磁鐵有N極和S極。
- 3. The magnetic force is stronger at the poles of the bar magnet. 磁鐵條的兩極磁力較強。
- 4. Like poles repel each other. 磁鐵同極相斥。
- 5. Unlike poles attract each other. 磁鐵異極相吸。



Science Videos Unit 4

Magnetism for Kids





Magnet Types and How They Work





Magnetism





Magnet Interactions—Poles





Magnets and Magnetism





Uses of Magnets





DIY: Fun Magnet Fishing Game





Magnet Race Car





Magnetic Objects

Color all magnetic objects.



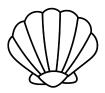
toy blocks (積木)



gold coin (金幣)



iron nail (鐵釘)



shell (貝殼)



icon can (鐵罐)



water bottle (寶特瓶)

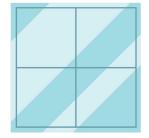
Which one do magnets attract? Circle the correct answer.



plastic (塑膠)



paper (紙)



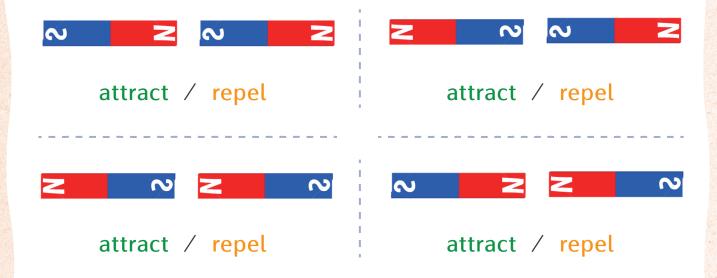
glass (玻璃)



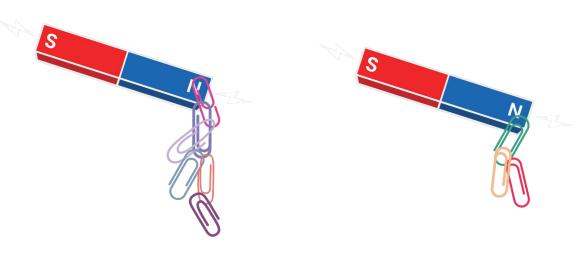
iron (鐵)

Magnetism

What will happen to the magnets? Circle attract or repel.



Which magnet is stronger?
 Circle the correct answer and explain why you think so.

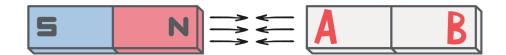


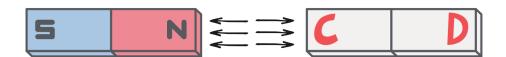
The magnet on the left / right side is stronger because _____

Magnetism

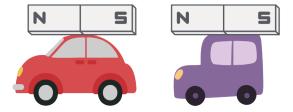
• Look at the picture and fill in the blanks using the words below.

S N like unlike





- 1. Pole A is the _____ pole because ____ poles attract each other.
- 2. Pole C is the _____ pole because _____ poles repel each other.





- \Box The purple car and the red car will move closer to each other.
- \Box The blue car and the purple car will move closer to each other.

Let's Review

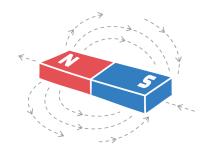
• Fill in the <u>blanks</u> using the words below.

paper clips attract repel poles pencils

1. A magnet can attract ______ because they have iron in them.



- 3. A magnet has two poles: an N pole and an S pole.The magnetic force is stronger at the ______ of a bar magnet.
- 4. Unlike poles _____ or pull toward each other. So, the N pole will attract the S pole.
- 5. Like poles _____ or push away from each other. So, the N pole will repel the S pole.



Rewards

Date	Points	Emoticon	Date	Points	Emoticon

Science Notes
Bilingual Science
3rd Grade 1st Semester

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