

2021-2022 Theme 1 : Happy School Life STEM Worksheet (1)

Name: Yoyo ( 2 )Grade: A 5/10Class: P. 1 ( J )Date: 2-10-2021

## Magnetic pencil case

### Objective

Using the provided materials(材料)to design a pencil case(文具盒)opened by magnet bars.

### Preparation

Let's check the following materials, put a ✓ in the □.

1 A3 paper(紙)for making the pencil case

Scissors(剪刀)

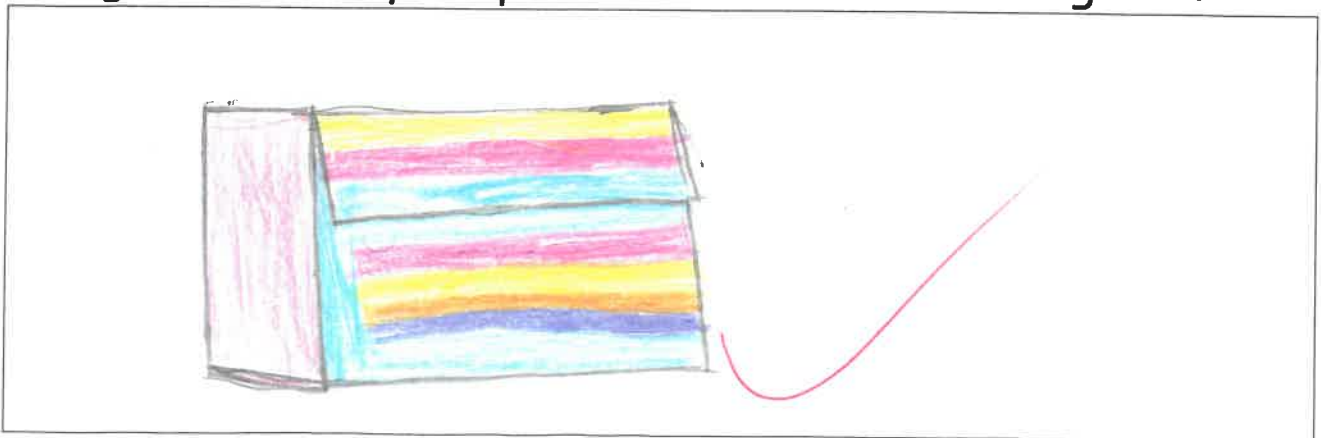
2 magnetic bars(磁鐵片)

Glue(膠水)

Color pencils(顏色筆)

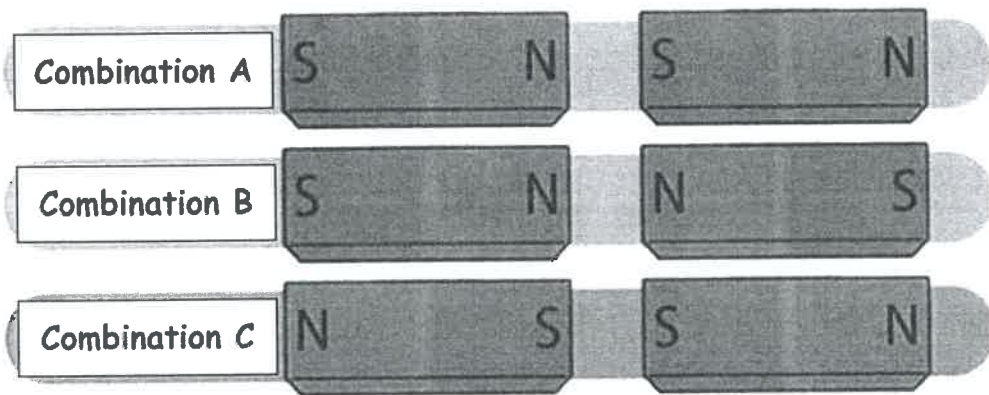
### Be a little designer

Design and draw your pencil case in the following box.



# 1. Let's start the experiment (實驗).

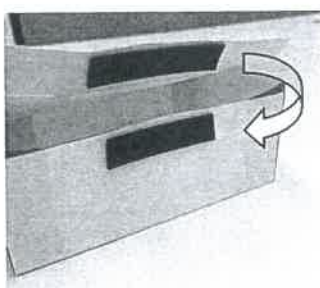
Put two magnets together in the following ways:



Combination	Result
A	Attract / <del>Repel</del>
B	Attract / <del>Repel</del>
C	Attract / <del>Repel</del>

## 2. Make the pencil case

After finishing the shape (外形) of pencil case, please stick (貼) a small magnet at the opening (開啟) area and a small magnet at the closing (關閉) area of the pencil case. Then, complete the following table according to the closing condition (情況) of the pencil case.



Poles of two magnets	Closure of pencil case
Same	Can / <del>Cannot</del>
Different	<del>Can</del> / Cannot

### 3. Fill in the blanks with the words provided.

attract    repel    same    different

After finishing the experiment and making the pencil case, I discovered(發現)that when the two magnetic poles are the same, the magnets repel each other; when the two magnetic poles are different, the magnets attract each other. Therefore, we have to use two magnets with different poles, so that the pencil case can close successfully(成功).

### Reflection

1. What is the difficulty(困難)in the experiment above?  
How did you solve it?

The two poles are sucked together.  
I stick them separately.

## Vocabulary (Copy each word for 3 times)

1. Magnets

Magnets Magnets Magnets

2. Magnetic poles

Magnetic poles

Magnetic poles

Magnetic poles

3. Attract

Attract Attract Attract

4. Repel

Repel Repel Repel

## Self-evaluation (Put ✓ in the appropriate box)

### 1. Student self-assessment

Area	Objectives	Excellent	Good	Need improvement
Knowledge	Understand the characteristics of magnet. (認識磁鐵的特性)		✓	
	Understand why magnet attracts and repels. (認識磁鐵異極相吸、同極相斥的原理)		✓	
Skills	Use suitable materials to make a magnetic pencil case (能利用適當物料製作磁鐵文具盒)		✓	

	<p>Can tell why the magnetic pencil case works and think of the improvement. (分析磁鐵文具盒的製作原理, 並構思改善的方法)</p>		✓	
	<p>Improve the design of the pencil case effectively. (有效改善磁鐵文具盒的設計)</p>		✓	
	<p>Show your creativity. (展示設計心思和創意)</p>		✓	
Attitude	<p>Accept other's opinions and show team spirit. (聽取和接納別人的意見, 並充分表現合作精神)</p>		✓	
	<p>Develop a good habit of working attitude pursuing truthfulness. (如實記錄實驗結果, 養成求真求實的處事態度)</p>		✓	
	<p>Active participation. (主動參與及投入活動)</p>		✓	

## 2. Peer review

<input checked="" type="checkbox"/> Excellent (表現優異)	<input type="checkbox"/> Good (表現良好)	<input type="checkbox"/> Work harder (仍須努力)
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## 3. Parent's comments

<input checked="" type="checkbox"/> Excellent (表現優異)	<input type="checkbox"/> Good (表現良好)	<input type="checkbox"/> Work harder (仍須努力)
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## 4. Teacher's comments

Area	Objectives	Excellent	Good	Need improvement
Knowledge	Understand the characteristics of magnet. (認識磁鐵的特性)	✓		
	Understand why magnet attracts and repels. (認識磁鐵異極相吸、同極相斥的原理)	✓		
Skills	Use suitable materials to make a magnetic pencil case (能利用適當物料製作磁鐵文具盒)	✓		
	Can tell why the magnetic pencil case works and think of the improvement. (分析磁鐵文具盒的製作原理, 並構思改善的方法)		✓	

	<p>Improve the design of the pencil case effectively. (有效改善磁鐵文具盒的設計)</p>		✓	
	<p>Show your creativity. (展示設計心思和創意)</p>	✓		
Attitude	<p>Accept other's opinions and show team spirit. (聽取和接納別人的意見，並充分表現合作精神)</p>	✓		
	<p>Develop a good habit of working attitude pursuing truthfulness. (如實記錄實驗結果，養成求真求實的處事態度)</p>	✓		
	<p>Active participation. (主動參與及投入活動)</p>	✓		

End