

A++

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have?

除了導電性特性 水溶液
味道、顏色、外觀、酸鹼性

2. How can we use LED lights?

資訊看板、交通號誌

Language

LED(發光二極體)	circuit(電路)	conduct electricity(導電)
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit (斷路)

1. Paper clips can conduct electricity.
2. Observe the Traffic sign, traffic will be smooth.
3. Turn off the switch to form an open circuit.
4. This LED design is great.
5. Easy to get an Electric shock with wet hands.
6. Salt water is easy to conduct electricity.

Experiment

title 標題	purpose 目的	equipment
step 步驟	result 結果	discuss 討論

step	The <u>process</u> of the <u>experiment</u> . 路線 實驗
purpose	What the experiment wants to prove.
result	Something produced by the experiment.
title	About the name of this experiment.
discuss	Description based on the results.
equipment	Things needed for the experiment.

Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
迴紋針可以導電。	知道更多可以導電的水溶液。	水溶液也可以導電!

A+

(除了) **Aqueous solution- electrical conductivity**

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have?

(導電體) (特性) (水溶液)
味道 顏色, 外觀 ✓

2. How can we use LED lights?

資訊看板, 交通號誌 ✓

Language

LED(發光二極體)	circuit(電路)	conduct electricity(導電)
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit (斷路)

- Paper clips can conduct electricity ~~circuit~~.
- Observe the Traffic sign, traffic will be smooth.
- Turn off the switch to form an open circuit.
- This LED design is great.
- Easy to get an Electric shock with wet hands.
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Experiment

title	purpose	equipment
step	result	discuss

step	The process of the experiment.
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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
我只知道少糖會溶化 ✓	想知道更多水溶液 ✓	水溶液也可以水溶化? ✓

A++

Aqueous solution- electrical conductivity

Warmer 除了 導電性 水溶液

1. In addition to conductivity, what other properties does the aqueous solution have? 味道、酸、鹼、顏色、導電性

2. How can we use LED lights?

長的連電池正極, 短的連負極。 ← 生活上使用?

Language

LED(發光二極體)	circuit(電路)	conduct electricity(導電)
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit (斷路)

- Paper clips can 導電.
- Observe the 交通號誌, traffic will be smooth.
- Turn off the switch to form an 斷路.
- This LED design is great.
- Easy to get an 觸電 with wet hands.
- Salt water is easy to 導電.

try in English.

Experiment

title	purpose	equipment
step	result	discuss

Step	The process of the experiment.
Purpose	What the experiment wants to prove.
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title	About the name of this experiment.
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equipment	Things needed for the experiment.

Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
我知道電的事。 有電	電會沒有嗎? 會呀!	老師上課好好 笑, 不一樣。

A+

Aqueous solution- electrical conductivity

簡易字

Warmer

除了 導電性 特快 冰溶液

1. In addition to conductivity, what other properties does the aqueous solution have? 味道、酸鹼、顏色、導電性

2. How can we use LED lights?

長的連電池正極、短的連負極 ← 實際生活上的使用?

Language

LED(發光二極體)	circuit(電路)	conduct electricity(導電)
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit (斷路)

- Paper clips can conduct electricity.
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- This LED design is great.
- Easy to get an Electric shock with wet hands.
- Salt water is easy to conduct electricity.

Experiment

title	purpose	equipment <u>寶馬盒</u>
step	result	discuss

step	The process of the experiment.
purpose	What the experiment wants to prove.
result	Something produced by the experiment.
title	About the name of this experiment.
discuss	Description based on the results.
equipment	Things needed for the experiment.

Thinking

K(What I know) <u>電路</u> make	W(What I want to know) <u>電會死人ㄟ!</u> <u>導 幾秒會死ㄟ!</u>	L(What I have learned) <u>老師這次笑話</u>
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Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have? 酸鹼性 (導電性) (特性) (水溶液)

2. How can we use LED lights? 顏色外觀

資訊看板、交通號誌

Language

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step	The process of the experiment.
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Thinking

K(What I know) <u>金屬會導電</u>	W(What I want to know) <u>電壓高所有東西都可導電?</u>	L(What I have learned) <u>英天較多</u>
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Thinking more.

Aqueous solution- electrical conductivity

Warmer

導電性 特性 水溶液

A++

1. In addition to conductivity, what other properties does the aqueous solution have?

味道-外觀(ex:顏色) 酸鹼性 ✓

2. How can we use LED lights?

長的一端連接電池正極, 短的一端連接電池的負極

↑ 生活上的應用?

Language

LED(發光二極體) ✓	circuit(電路)	conduct electricity(導電) ✓
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step 步驟	result 結果	discuss 討論

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
水溶液的酸鹼性 ✓	水溶液的導電性的引伸 ✓	笑話比較好笑 ✓

A++

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have?

除了 導電性 特性 or 特質 水溶液
酸鹼 味道 顏色
acidity, smell, color.

2. How can we use LED lights?

light, traffic sign

Language

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Experiment

title 標題	purpose 目的	equipment 器材
step 步驟	result 結果	discuss 討論

Step	The process of the experiment.
purpose	What the experiment wants to prove.
result	Something produced by the experiment.
title	About the name of this experiment.
discuss	Description based on the results.
equipment	Things needed for the experiment.

Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
The aqueous solution can conduct electricity. (水溶液可以導電)	五水為何不能融解玻璃? 性質不同	I think STEAM class is very fun. (我覺得STEAM課很好玩)

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have?

酸性、味道、顏色 ✓

ATX

2. How can we use LED lights?

資訊看板、交通號誌 ✓

Language

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Experiment

title 標	purpose 目	equipment 器
step 步	result 結	discuss 討

step	The process of the experiment.
purpose	What the experiment wants to prove.
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discuss	Description based on the results.
equipment	Things needed for the experiment.

Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
水有導電性 ✓	食用醋加可樂是唔?	我幾乎每次來都在找 worksheet.

沒這加法呀!

二、三

A+

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have?

酸鹼性、味道、顏色。

2. How can we use LED lights?

用迴紋針能導電

Language

LED(發光二極體)	circuit(電路) ✓	conduct electricity(導電) ✓
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit (斷路)

- Paper clips can conduct electricity ✓
- Observe the traffic sign, traffic will be smooth. ✓
- Turn off the switch to form an circuit. ✓
- This LED design is great. ✓
- Easy to get an Electric shock with wet hands. ✓
- Salt water is easy to conduct electricity. ✓

Experiment

title	purpose	equipment
step <u>步驟</u>	result	discuss <u>討論</u>

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
1. 水溶液的導電性 2. 溶解現象 ✓	1. 酸鹼性 ?	我覺得 steam 課程 越來越有趣。 oh~ 我想想改善方法! :)

A++

Aqueous solution- electrical conductivity

Warmer

道電 特性 水溶液

1. In addition to conductivity, what other properties does the aqueous solution have?
 acidity color smell

2. How can we use LED lights?

Traffic sign, road light

Language

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Experiment

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<u>step</u>	<u>result</u>	<u>discuss</u>

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
1 Salt water is 中性 2 Lemon juice is acid. 3 Aqueous solution can be 中鹼或酸性	1 水為什麼不能融解玻璃 性質不同	STEAM課越來越難 3. QAQ

oh! No!

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have?

導電性 特性 水溶液
 酸鹼性、顏色、導電性、味道

2. How can we use LED lights?

估欠 交通號誌

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
水溶液會導電	水會導電?	水會導電?

A++

Aqueous solution- electrical conductivity

Warmer

(導電性)

特性

水溶液

1. In addition to conductivity, what other properties does the aqueous solution have?

味道、顏色、酸鹼性

2. How can we use LED lights?

做交通號誌、資訊看板

Language

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Experiment

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step	步驟	result	結果	discuss	討論

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
有些水溶液會導電，有些不會。	蝶豆花汁好喝嗎？ 還好耶！ 😊	有些題目難到爆炸，像是： 了解！

A14

Aqueous solution- electrical conductivity

Warmer

導電性

特性

水溶液

1. In addition to conductivity, what other properties does the aqueous solution have?

味道、顏色、酸鹼性

2. How can we use LED lights?

做交通號誌、資訊看板

Language

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
有些水溶液會導電	蝶豆花汁可喝嗎? 還好!	有些題目很難... 收到

A++

Aqueous solution- electrical conductivity

Warmer

導電性 特性 水溶液

1. In addition to conductivity, what other properties does the aqueous solution have? 味道, color, 酸鹼性

2. How can we use LED lights?

1. 正接紅(電) 負接黑(線) 2. Traffic sign

Language

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- Observe the Traffic sign, traffic will be smooth.
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- Salt water is easy to conduct electricity.

Experiment

title (標題)	purpose (目的)	equipment (器材)
step (步驟)	result (結果)	discuss (器材)

Step	The (process) of the experiment.
purpose	What the experiment wants to prove.
result	Something produced by the experiment.
title	About the name of this experiment.
discuss	Description based on the results.
equipment	Things needed for the experiment.

Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
好像沒有, 看的懂些。	學到了水溶液、電路的英文。	我覺得這張單子比較難! o.k.

or

A+

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have? acidity ✓
2. How can we use LED lights? traffic sign - street light - machines ✓

Language

LED(發光二極體)	circuit(電路)	conduct electricity(導電)
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit (斷路)

1. Paper clips can conduct electricity.
2. Observe the Traffic sign, traffic will be smoothie,
3. Turn off the switch to form an open circuit.
4. This LED design is great.
5. Easy to get an Electric shock with wet hands.
6. Salt water is easy to conduct electricity.

process = 路線
prove = 証明

Experiment

title 標題	purpose 目的	equipment 實驗
step 步驟	result 結果	discuss 發覺

step	The process of the experiment.
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Thinking 原本就知道

我想知道

新學到的事

K(What I know)	W(What I want to know)	L(What I have learned)
沒有 ✓	沒有 ✓	水溶液、酸和鹼性 ✓

Thinking more ~

Aqueous solution- electrical conductivity

A+

Warmer

故意

1. In addition to conductivity, what other properties does the aqueous solution have? acidity ✓

2. How can we use LED lights? ✓

Traffic sign ✓

two few
有些少

Language

LED(發光二極體)	circuit(電路)	conduct electricity(導電)
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit (斷路)

1. Paper clips can conduct electricity ✓
2. Observe the Traffic sign, traffic will be smoothie. ✓
3. Turn off the switch to form an open circuit ✓.
4. This LED design is great. ✓
5. Easy to get an Electric shock with wet hands. ✓
6. Salt water is easy to conduct electricity ✓.

Experiment

title 標題	purpose 目的	equipment 實驗
step 步驟	result 結果	discuss 發覺

step	The process of the experiment.
purpose	What the experiment wants to prove.
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title	About the name of this experiment.
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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
酸鹼性 ✓	王水是什麼味道 很臭吧! ✓ 我也不知道	水溶液、王水 ?

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have?

acid-alkaline (酸鹼性) 顏色 味道

A+++

2. How can we use LED lights?

各種電器 資訊看板 交通號誌

Language

LED(發光二極體)	circuit(電路)	conduct electricity(導電)
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit (斷路)

路燈

1. Paper clips can conduct electricity.
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Experiment

title 標題	purpose 目的	equipment 器材
step 步驟	result 結果	discuss 討論

step	The process of the experiment.
purpose	What the experiment wants to prove.
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title	About the name of this experiment.
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Thinking

K(What I know) 很多東西可導電 水好酸!	W(What I want to know) 什麼東西最酸? 我也不知道!	L(What I have learned) 實驗比較多, 讚!
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A++

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have?

外觀 味道 酸鹼性

2. How can we use LED lights?

交通號誌 資訊看板 路燈 電器

Language

LED(發光二極體)	circuit(電路)	conduct electricity(導電)
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit (斷路)

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Experiment

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step	result	discuss

step	The process of the experiment.
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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
王水好酸?	王水可不可以導電 可以吧	老師不戴口罩 你真的現在危險!

AP4

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have? color
2. How can we use LED lights? Traffic sign

Language

LED(發光二極體)	circuit(電路)	conduct electricity(導電)
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit(斷路)

1. Paper clips can conduct electricity.
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Experiment

title	<u>purpose</u>	<u>equipment</u>
step	<u>result</u>	<u>discuss</u>

<u>step</u>	The process of the experiment.
<u>purpose</u>	What the experiment wants to prove.
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Thinking

K(What I know) 水溶液的酸鹼	W(What I want to know) 泡過的紫高麗菜還能吃嗎	L(What I have learned) 難 oh?!
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最好不要吧~

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have?

除了 (導電性) (特性) 水溶液
looks, smell, acidity

A++

2. How can we use LED lights?

Traffic sign and road light

Language

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- Observe the Traffic sign, traffic will be smooth.
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- This LED design is great.
- Easy to get an Electric shock with wet hands.
- Salt water is easy to conduct electricity.

Experiment

title 標題	purpose 目的	equipment 器材
step 步驟	result 結果	discuss 討論

step	The process of the experiment.
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Thinking

你原知 K(What I know) 你知道	W(What I want to know)	L(What I have learned)
1. 溶解現象 2. 水溶液的酸鹼性 3. 水溶液的導電性	1. 水溶液還有更多用途嗎? 有呢!	我覺得這單元的實驗特別多

Aqueous solution- electrical conductivity

A14

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have? 導電性 特質

color, smell, acid-alkaline

2. How can we use LED lights?

Traffic sign, street light, machine

Language

LED(發光二極體)	circuit(電路)	conduct electricity(導電)
Traffic sign(交通號誌)	Electric shock(觸電)	open circuit (斷路)

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
如果手是溼的,不能碰電器!!!	非常多東西都有用LED	水溶液可以導電

Aqueous solution- electrical conductivity

Warmer

(導電) (特性) (水溶液)

1. In addition to conductivity, what other properties does the aqueous solution have?

- 1. 酸鹼 4. 顏色
- 2. 外觀
- 3. 氣味

A++

2. How can we use LED lights?

Traffic sign, street light.

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
水溶液能導電	English is so hard.	如何測酸鹼性

Aqueous solution- electrical conductivity

A++

Warmer

除了 導電性 特性 水溶液
 1. In addition to conductivity, what other properties does the aqueous solution have?

looks, smell, acidity

2. How can we use LED lights?

Traffic sign and road light.

Language

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
手有水的時候不能不 到插頭口	怎樣才能把鹽變 成氫氧化鈉和鹽 酸	英文好難

加能量

Aqueous solution- electrical conductivity

Warmer

除了 導電 特性 水溶液

A++

1. (In addition to (conductivity), what other (properties) does the (aqueous solution) have?

- 1. 酸、鹼 4 顏色
- 2. 外觀
- 3. 氣味

2. How can we use LED lights?

Traffic sign, street light, machine

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
1 如果手是溼得, 不可以觸摸電器。 2 測水溶液導電性	發光二極體可以讓所有物體發光嗎?	小心使用強酸或強鹼

它本身會發光!

Aqueous solution- electrical conductivity

Warmer

1. In addition to conductivity, what other properties does the aqueous solution have?

acidic · smell · color



2. How can we use LED lights?

Traffic sign

Language

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Thinking

K(What I know)	W(What I want to know)	L(What I have learned)
水: 液体是危險 	我們如果喝汽水, 不就一直吃二氧化碳嗎? 是也! ^_^	1. 今天12月9日, 我買了黑松沙士, 開瓶的時候, 後來搖一搖, 沒多久, 砰的一聲, 爆發了, 滿臉都是... ← 因為壓力, 氣體硬壓進去的! 那什麼後... 爆炸 是二氧化碳呢? 你做的... 好嗎? 圖

