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# SECONDARY TWO SCIENCE E-TRIAL

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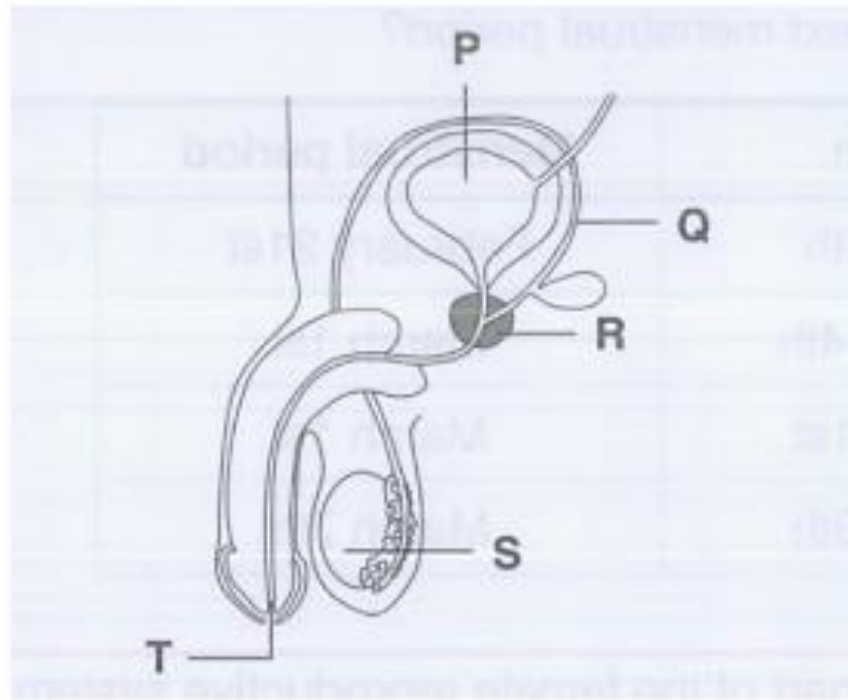
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## Biology - Sexual Reproduction – 1

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The diagram shows part of the male reproductive system.



# Biology - Sexual Reproduction – 1



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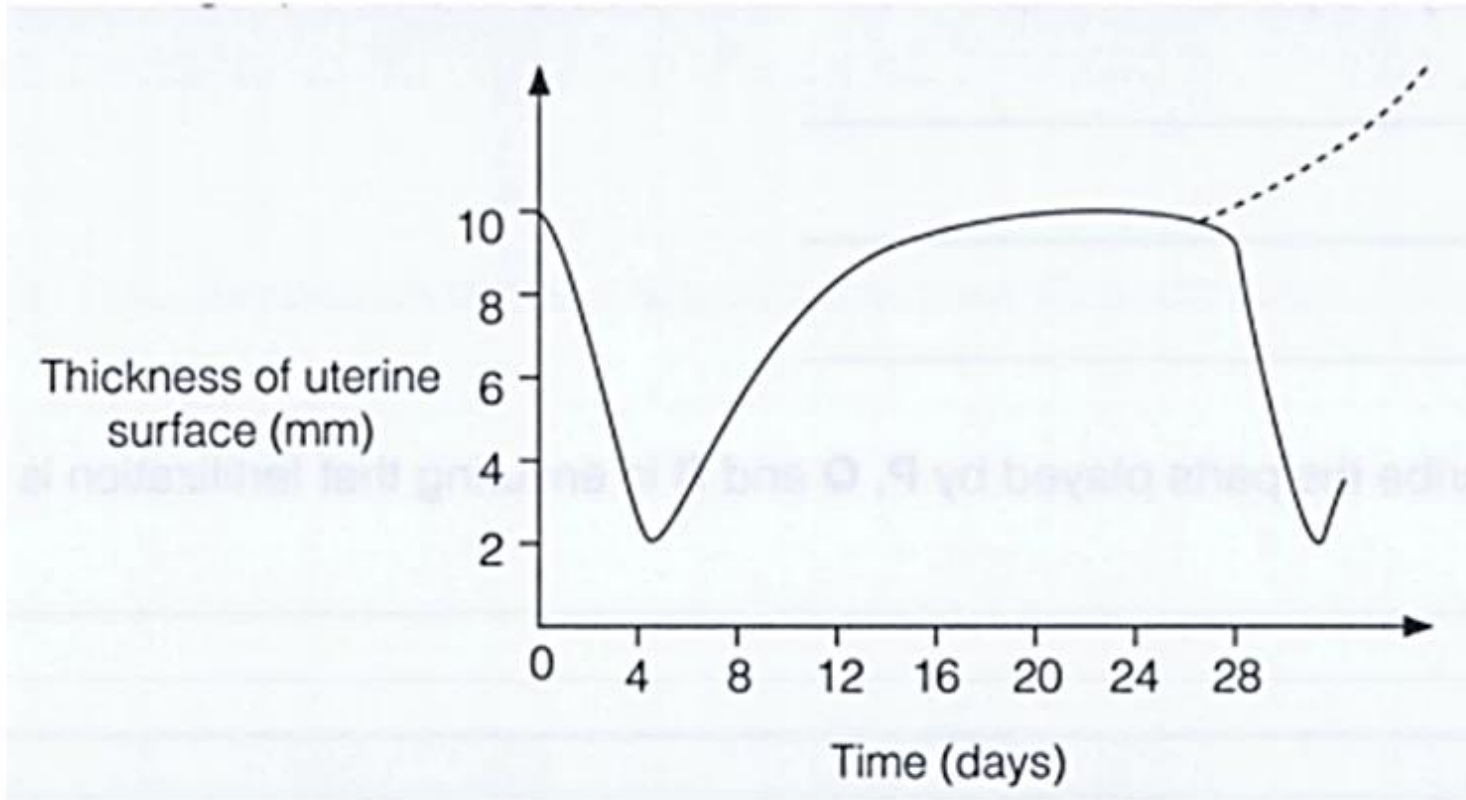
	Seminal fluid	Sperm
<b>A</b>	<b>P</b>	<b>Q</b>
<b>B</b>	<b>Q</b>	<b>R</b>
<b>C</b>	<b>R</b>	<b>S</b>
<b>D</b>	<b>S</b>	<b>T</b>

Which structures produce seminal fluid and sperm?

# Biology - Sexual Reproduction -1



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## Biology - Sexual Reproduction – 1

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On which of the following days would ovulation most likely occur?

- A. Day 0
- B. Day 4
- C. Day 10
- D. Day 16

## Biology - Sexual Reproduction – 2

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Which of the following occurs if the curve continues along the dotted line?

- A. A placenta has been formed on the uterus.
- B. An embryo has been embedded on the uterine layer.
- C. The amount of menstrual flow has increased.
- D. Two ova are simultaneously released from the ovary.

## Biology - Sexual Reproduction – 3

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**(a) What is menstruation?**

## Biology - Sexual Reproduction – 3

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- (b) A woman has a 28-day menstrual cycle. Her period started on the 28<sup>th</sup> April.
- (i) On which day can she expect ovulation to occur? Explain your answer.

## Biology - Sexual Reproduction – 3

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**(ii) When will her next period start? Explain your answer.**

## Biology - Sexual Reproduction – 3

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**(iii) Her period did not commence on the day predicted in (ii). Give two reasons for this outcome.**

## Biology - Sexual Reproduction – 3

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(iv) The woman and her husband are trying for a baby. Between which dates might sexual intercourse result in fertilisation? Explain your answer.

## Biology - Sexual Reproduction – 3

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- (v) If the egg was fertilized as predicted in (iv), in which month is the baby most likely to be born? Explain your answer.

## Biology - Sexual Reproduction – 3

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**(c) Give two scenarios when women stop menstruating.**



## Biology - Sexual Reproduction – 1

Which of the following comparisons of the two birth control methods used by women is correct?

	<b>Contraceptive pills</b>	<b>Ligation</b>
<b>A</b>	Reversible contraceptive effect	Irreversible contraceptive effect
<b>B</b>	No implantation of embryo	Implantation of embryo occurs
<b>C</b>	No menstruation	Menstruation occurs
<b>D</b>	Ovulation occurs	No ovulation

## Biology - Sexual Reproduction – 2

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How does the female contraceptive pill prevent pregnancy?

- A. It stops the opening of the oviduct.
- B. It stops the fertilized egg from implanting in the uterus lining.
- C. It stops the sperms from reaching the egg.
- D. It stops the ovary from releasing egg.

## Biology - Sexual Reproduction – 3



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c) List the temporary and permanent contraceptives available for couples in the table below.

Temporary contraceptives	Permanent contraceptives



## Biology - Sexual Reproduction – 1

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A person has been infected with an STI that initially leaves him looking normal and healthy. Over time, he develops symptoms such as sores in mouth, fatigue and shortness of breath.

## Biology - Sexual Reproduction – 1

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**(a) Which STI do you think this person has been infected with? Give its full name.**

## Biology - Sexual Reproduction – 1

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**(b) Give the full name of the pathogen that is responsible for this infection.**

## Biology - Sexual Reproduction – 1

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**(c) Explain how the pathogen identified in (b) harms the infected person.**

## Biology - Sexual Reproduction – 1

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**(d) When is the person likely to reach the last stage of infection?**

## Biology - Sexual Reproduction – 1

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**(e) Provide two symptoms that may occur at the last stage of infection.**

## Biology - Sexual Reproduction – 1

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(f) Apart from sexual intercourse, give two other way in which the above STI can be spread

## Biology - Sexual Reproduction – 2

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a) State **two** ways in which sexually transmitted diseases (STDs) can be prevented.

## Biology - Sexual Reproduction – 2

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**b) AIDS can be transmitted to another person in other ways besides having sexual intercourse with an infected person. List three other ways that AIDS can be transmitted.**



## Chemistry – Acids and Alkali - 1

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A test tube contains nitric acid solution. Which of the following observations is likely to take place when calcium strips are added into it?

- A The solution changes colour.
- B Insoluble substances are formed.
- C Some bubbles are produced.
- D Calcium strips remain unchanged.



## Chemistry – Acids and Alkali - 2

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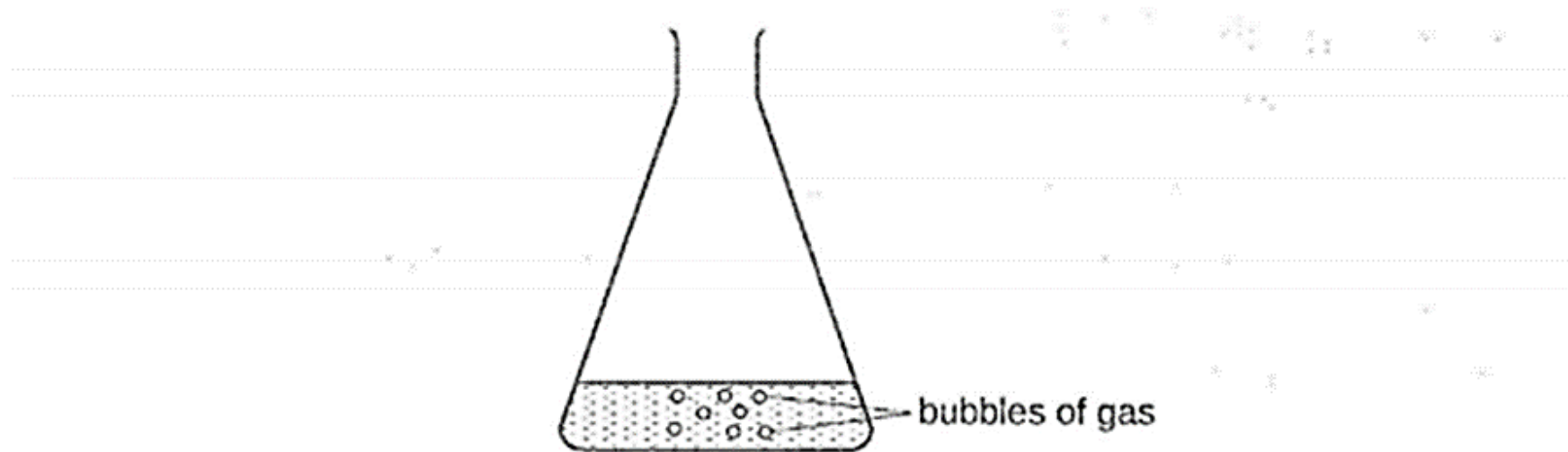
When substance X is mixed with substance Y, a gas which turns limewater chalky is produced. Which of the following statements about this observation is not correct?

- A** The mixing of both substances X and Y produces a chemical change.
- B** If substance X is an acid, then substance Y must be a carbonate.
- C** A large amount of heat change is involved after mixing the two substances.
- D** The solution produced from the reaction turns litmus paper blue.



## Chemistry – Acids and Alkali - 3

The diagram shows the observation of a chemical reaction between an acid and substance X.





## Chemistry – Acids and Alkali - 3

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Which of the following could be substance X?

- I. A metal
- II. A carbonate
- III. An oxide compound

- A I and II
- B I and III
- C II and III
- D I, II and III



## Chemistry – Acids and Alkali - 4

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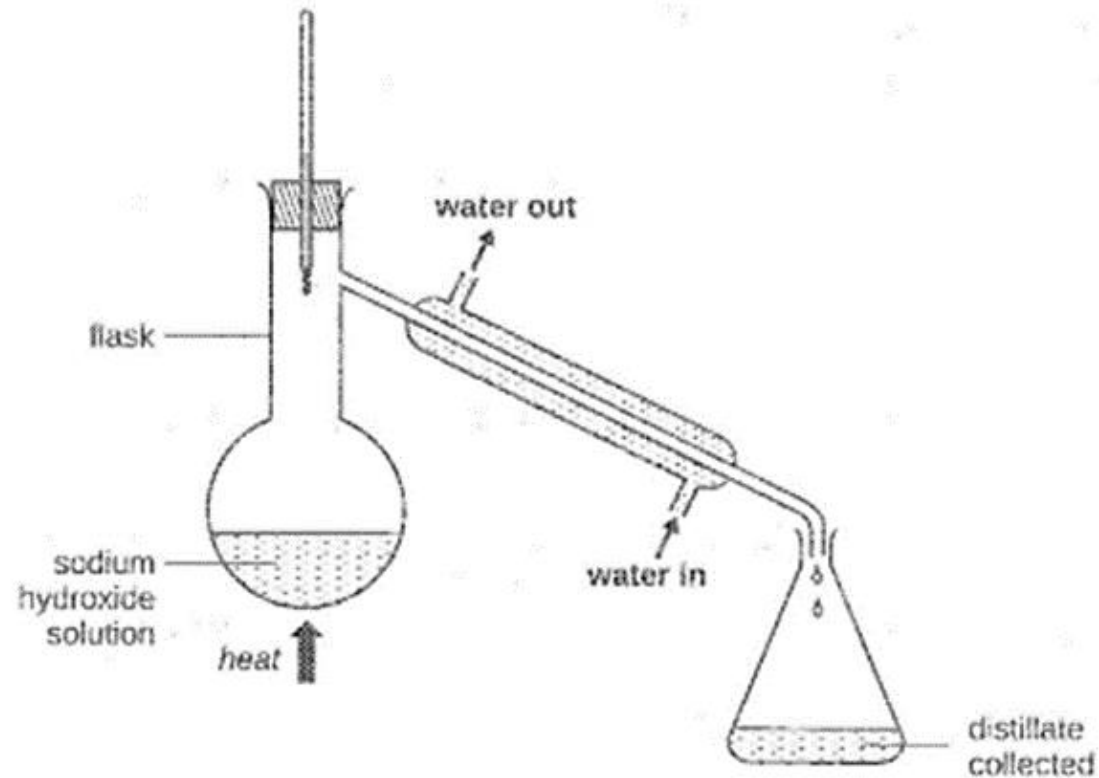
Excess acid in the stomach causes indigestion in a person. It can be relieved by taking an anti-indigestion tablet. Which of the following about the chemical compounds in the stomach and anti-indigestion tablet is correct?

	<u>In the stomach</u>	<u>In the anti-indigestion table</u>
A	Sulfuric acid	Magnesium chloride
B	Hydrochloric acid	Magnesium chloride
C	Sulfuric acid	Magnesium hydroxide
D	Hydrochloric acid	Magnesium hydroxide



## Chemistry – Acids and Alkali – 5

The diagram shows distillation of sodium hydroxide solution.





Which of the following shows changes in pH values of the distillate and of the solution in the flask during the process?

	<u>pH of solution left in the flask</u>	<u>pH of the distillate</u>
A	Remains 7	Greater than 7
B	Lower than 7	Greater than 7
C	Greater than 7	Remains 7
D	Remains 7	Lower than 7



## Chemistry – Acids and Alkali – 6

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Complete the following word equations

(a) Sodium hydroxide + \_\_\_\_\_ → sodium nitrate + water

(b) Hydrochloric acid + calcium → \_\_\_\_\_ + \_\_\_\_\_

(c) Iron (II) oxide + sulfuric acid → \_\_\_\_\_ + \_\_\_\_\_



## Chemistry – Acids and Alkali – 6

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(d) \_\_\_\_\_ + \_\_\_\_\_ → magnesium sulfate + hydrogen

(e) Hydrochloric acid + zinc carbonate → \_\_\_\_\_ + \_\_\_\_\_ +  
\_\_\_\_\_

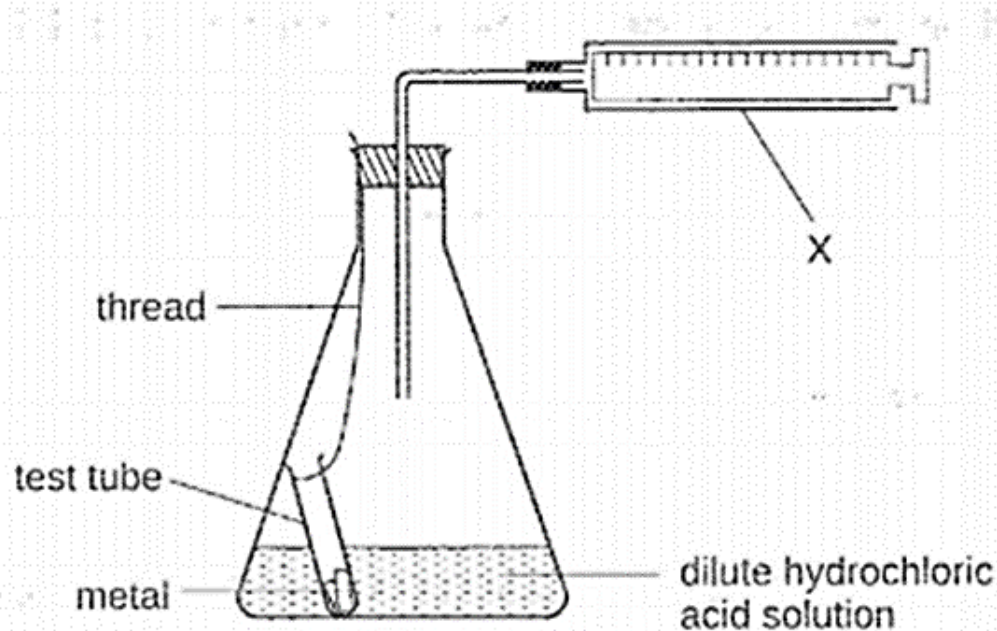
(f) \_\_\_\_\_ + \_\_\_\_\_ → copper (II) chloride + carbon dioxide +  
water

(g) Potassium hydroxide + sulfuric acid → \_\_\_\_\_ + \_\_\_\_\_



## Chemistry – Acids and Alkali – 7

The diagram shows an experiment to investigate the speed of reaction using different metals in dilute hydrochloric acid solution.



## Chemistry – Acids and Alkali – 7



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The results of the experiments are shown in the table.

Metal	Time taken for collection 20 cm <sup>3</sup> of gas
Iron	14
Magnesium	8
Zinc	11
Calcium	5

## Chemistry – Acids and Alkali – 7

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**(a) (i) Name apparatus X.**

## Chemistry – Acids and Alkali – 7

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**(ii) What is the purpose of apparatus X?**

## Chemistry – Acids and Alkali – 7

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**(b) What is meant by dilute hydrochloric acid solution?**

## Chemistry – Acids and Alkali – 7

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**(c) Why is the metal placed inside a test tube before the reaction?**

## Chemistry – Acids and Alkali – 7

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**(d) How would you test for the gas produced in the reaction?**



- (e) From the results shown in the table, share**
- (i) One similarity in the reactions of the four metals with the acid.**

## Chemistry – Acids and Alkali – 7

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**(ii) One difference in the reactions of the four metals with the acid.**

## Chemistry – Acids and Alkali – 7

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- (f)** Write a generic word equation to represent the chemical reaction in this experiment.