

Chemistry - Key Stage 3  
Energetics

# Lesson 11 - Review 1

Miss Charlton



**OAK**  
NATIONAL  
ACADEMY

# What has to happen to particles before they react?

A

Break apart

B

Slow down

C

Explode

D

Collide



# What do all rate of reaction practical have to do?

A

Measure a change over time

C

Time how long it takes for a reactant to be used up

B

Time how long it takes for a precipitate to be formed

D

Time how quick a product is made



# What is activation energy?

A

The energy given out when new bonds are formed

C

The minimum amount of energy a reaction needs to start

B

The maximum amount of energy a reaction needs to start

D

The energy taken in when bonds are broken



# The rate of reaction is...

A

Quick all the way through every reaction

C

Quickest at the start of the reaction then slows down

B

The same speed through a reaction

D

Slowest at the start of the reaction then speeds up



# Which one decreases the rate of reaction?

A

Particles have more kinetic energy

B

Use of a catalyst

C

Larger surface area of reactants

D

Lower concentration of reactants



# Which one increases the rate of reaction?

A

Particles have less kinetic energy

B

Use of a gas syringe

C

Larger surface area of reactants

D

Lower concentration of reactants



# The dependent variable is?

A

The variable we measure

B

The variable we change

C

The variable we control

D

The variable we keep the same





# Increasing the surface area...

A

Decreases the rate of reaction

B

Increases the number of successful collisions

C

Increases the concentration of particles

D

Increases the number of particles



# Decreasing the concentration...

A

Increases the rate of reaction

B

Increases the number of successful collisions

C

Decreases the number of particles

D

Increases the number of particles



**Finish the equation:**

**Potassium carbonate → ..... + carbon dioxide**

**A**

Potassium dioxide

**B**

Potassium oxide

**C**

Potassium sulphate

**D**

Potassium chloride



# During endothermic reactions...

A

The temperature of the surroundings increases

C

The particles decrease in temperature

B

The temperature of the surroundings usually decreases

D

The particle temperature increases



# During exothermic reactions...

A

Bonds are broken

B

Bonds are made then broken

C

Bonds are made

D

Bonds are broken and  
made



# The products of complete combustion are?

A

Carbon dioxide and water

B

Carbon monoxide and water

C

Carbon, water and soot

D

Carbon minoxide and water



# Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
A reaction happens when reactants collide ...	
Increasing the concentration increases the rate of reaction because there are <b>more collisions</b>	
The test for oxygen is to put <b>a blown out</b> splint into the gas and if it relights, its oxygen	
Complete combustion <b>produces</b> more energy than incomplete combustion	



# Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
<p>2 control variables when testing the effect of surface area on the rate of reaction between HCl and calcium carbonate are:</p> <p>The <b>amount</b> of carbonate</p> <p>The <b>amount</b> of acid</p>	
<p>The test for carbon dioxide is to <b>put a lit splint inside it and if the flame goes out</b>, it's carbon dioxide</p>	
<p>When investigating endothermic reactions a polystyrene cup is better because it <b>stops</b> energy being <b>lost</b> to the environment</p>	





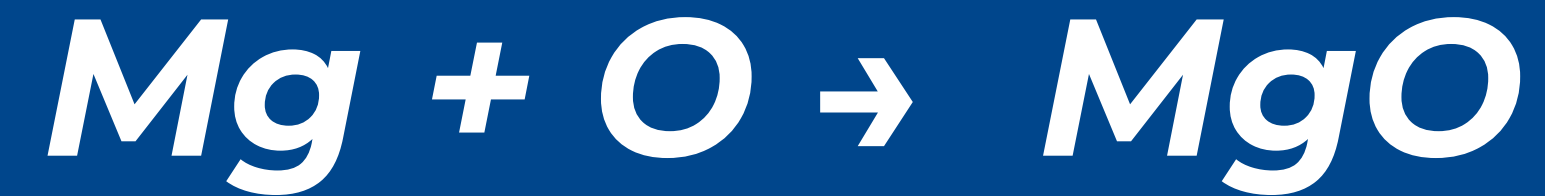
*Identify the reaction:*



*Identify the reaction:*



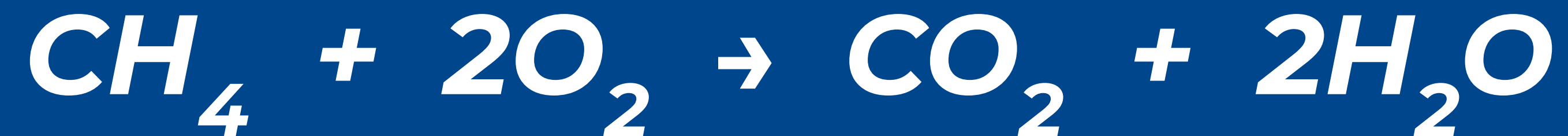
*Identify the reaction:*



*Identify the reaction:*



*Identify the reaction:*



# Answers



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The variable we measure

C

The variable we control

B

The variable we change

D

The variable we keep the same



# Increasing the surface area...

A

Decreases the rate of reaction

C

Increases the concentration of  
particles

B

Increases the number of successful  
collisions

D

Increases the number of particles



# Decreasing the concentration...

A

Increases the rate of reaction

B

Increases the number of successful collisions

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The temperature of the surroundings decreases

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Bonds are made

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Bonds are made then broken

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Bonds are broken and  
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# The products of complete combustion are?

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Carbon dioxide and water

C

Carbon, water and soot

B

Carbon monoxide and water

D

Carbon minoxide and water



# Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
A reaction happens when reactants collide ...	A reaction happens when reactants collide with enough energy to start a reaction (activation energy)
Increasing the concentration increases the rate of reaction because there are <b>more collisions</b>	Increasing the concentration increases the rate of reaction because there are more frequent collisions
The test for oxygen is to put <b>a blown out</b> splint into the gas and if it relights, its oxygen	The test for oxygen is a <b>glowing</b> splint relights when put into oxygen gas
Complete combustion <b>produces</b> more energy than incomplete combustion	Complete combustion <b>releases</b> more energy than incomplete combustion



# Correct the incorrect or poor statement

Incorrect or poor statement	Correct statement
<p>2 control variables when testing the effect of surface area on the rate of reaction between HCl and calcium carbonate are:</p> <p>The <b>amount</b> of carbonate</p> <p>The <b>amount</b> of acid</p>	<p>The <b>mass</b> of carbonate</p> <p>The <b>volume</b> of acid</p>
<p>The test for carbon dioxide is to <b>put a lit splint inside it and if the flame goes out</b>, it's carbon dioxide</p>	<p>The test for carbon dioxide is to bubble it through lime water and if the lime water goes cloudy, the gas is CO<sub>2</sub></p>
<p>When investigating endothermic reactions a polystyrene cup is better because it <b>stops</b> energy being <b>lost</b> to the environment</p>	<p>When investigating endothermic reactions, a polystyrene cup is better because it <b><u>cuts down</u></b> on energy being <b><u>taken in</u></b> from the environment</p>



*Identify the reaction:*



*Incomplete combustion*

*Exothermic*



*Identify the reaction:*

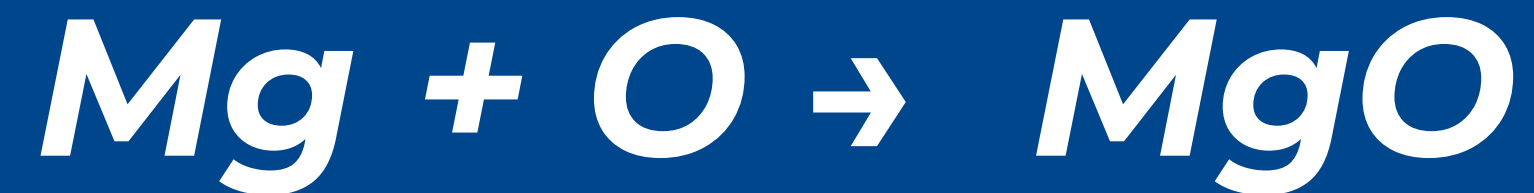


*Thermal decomposition*

*Endothermic*



*Identify the reaction:*



*Oxidation*

*Exothermic*





*Identify the reaction:*

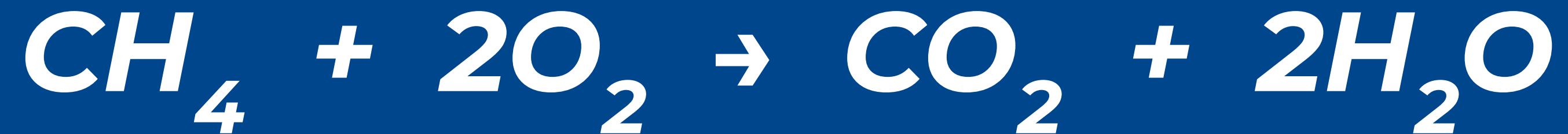


*Thermal decomposition*

*Endothermic*



*Identify the reaction:*



*Complete combustion*

*Exothermic*

