Revision Sheets

AQA GSCE Triple Chemistry Paper 2 Higher

Name: Class:

10 Minutes on....

Calculating Rates of Reaction

Key Term	Definition
Rate of Reaction	

Identify the equations that you could use to calculate the rate of reaction.

Quantity	Unit
Mass	
Volume	
Rate of Reaction	

Describe how you can determine the rate of a chemical reaction.

10 Minutes on....

Factors Which Affect Rates of Reaction

Factor	Explanation of How It Affects Rate of Reaction
Concentration of Reactants	
Pressure of Reacting Gases	
Surface Area of Solid Reactants	
Temperature	
Presence of Catalysts	

10 Minutes on....

Rates of Reaction 1 RP

Construct a method to investigate how changes in concentration affect the rates of reactions by measuring the volume of gas produced. Use the space below to draw a diagram of how equipment would be set up.

When Method Used	When a gas is made.
Outline Method	
What is Measured (Dependent Variable)	
Possible Variables	

10 Minutes on....

Rates of Reaction 2 RP

Construct a method to investigate how changes in concentration affect the rates of reactions when a precipitate is formed. Use the space below to draw a diagram of how equipment would be set up.

When Method Used	When a solid (precipitate) is made.
Outline Method	
What is Measured (Dependent Variable)	
Possible Variables	

10 Minutes on....

Collision Theory

Key Term	Definition
Collision Theory	
Activation Energy	

Factor	Explanation of How It Affects Rate of Reaction Linked to Collision Theory/Activation Energy
Concentration of Reactants	
Pressure of Reacting Gases	
Surface Area of Solid Reactants	
Temperature	
Presence of Catalysts	

10 Minutes on....

Catalysts

Key Term	Definition
Catalyst	
Activation Energy	

Explain how a catalyst works.

Construct a reaction profile to model how catalysts work.

10 Minutes on....

Reversible Reactions

Key Term	Definition
Reversible Reaction	
Exothermic Reaction	
Endothermic Reaction	

Write a simple equation to show how reversible reactions are modelled.

Summarise the energy changes involved in a reversible reaction.

10 Minutes on....

Equilibrium

Key Term	Definition
Equilibrium	
Le Chatelier's Principle	

Change	Effect on Reversible Reaction
Concentration of Reactants is Increased	
Concentration of Products is Decreased	
Increase in Temperature	
Decrease in Temperature	
Pressure Increased	
Pressure Decreased	

10 Minutes on....

Crude Oil

Key Term	Definition
Crude Oil	
Hydrocarbon	

Identify the general formula of alkanes.

No. of C Atoms	Alkane	Formula	Diagram
1			
2			
3			
4			

10 Minutes on....

Fractional Distillation

Key Term	Definition
Fractional Distillation	
Fraction	
Condensation	
Evaporation	

Identify fuels obtained from crude oil.

Describe the process of fractional distillation.

10 Minutes on....

Properties of Hydrocarbons

Property	What Happens With Increasing Molecular Size of Hydrocarbon
Boiling Point	
Viscosity	
Flammability	

Alkane	Word Equation for Combustion	Symbol Equation for Combustion
Methane		
Ethane		
Propane		
Butane		

10 Minutes on....

Cracking and Alkenes

Key Term	Definition
Cracking	
Alkene	
Alkane	

Alkene Uses	Alkane Uses

Describe the process of cracking.

Describe how to test for alkanes.

10 Minutes on....

Alkenes

Key Term	Definition
Alkene	

Identify the general formula of alkenes.

Explain why alkenes are unsaturated.

No. of C Atoms	Alkene	Formula	Diagram
2			
3			
4			
5			

10 Minutes on....

Reactions of Alkenes

Describe what happens when an alkene reacts with oxygen.

Describe what happens when an alkene reacts with hydrogen, water and the halogens.

Reactants	Products	Type of Reaction
Alkene + Hydrogen		
Alkene + Water		
Alkene + Halogen		

How can alkenes be identified?

How does the reactivity of alkenes compare to alkanes?

10 Minutes on....

Alcohols 1

Substance	Functional Group
Alcohol	

No. of C Atoms	Alcohol	Formula	Diagram
1			
2			
3			
4			

Describe the main uses of the alcohol's above.

10 Minutes on....

Alcohols 2

Reactants	Products
Alcohol + Sodium	
Alcohol + Oxygen	
Alcohol + Oxidising Agent	

Describe what happens when alcohol is added to water

Describe the conditions for the fermentation of sugar using yeast.

10 Minutes on....

Carboxylic Acids

Substance	Functional Group
Carboxylic Acids	

No. of C Atoms	Alcohol	Formula	Diagram
1			
2			
3			
4			

Reactants	Products
Carboxylic Acid + Carbonate	
Carboxylic Acid + Alcohol	

10 Minutes on....

Addition Polymerisation

Key Term	Definition
Addition Polymerisation	

Construct a diagram to model addition polymerisation of ethene into polyethene.

Describe what happens during addition polymerisation.

10 Minutes on....

Condensation Polymerisation

Key Term	Definition
Condensation Polymerisation	
Diol	
Dicarboxylic Acid	

Describe how polyester is made.

10 Minutes on....

Amino Acids

Substance	Functional Groups
Amino Acids	

Describe how polypeptides are made.

Construct a model to show what happens when glycine polymerises to make a polypeptide.

10 Minutes on....

DNA

Key Term	Definition
DNA	

Describe the structure of DNA.

Naturally Occurring Polymer	Monomer
Protein	
Starch	
Cellulose	
DNA	

10 Minutes on....

Pure Substances

Key Term	Definition	Example
Pure Substance (In Chemistry)		
Pure Substance (In Everyday Language)		

Describe how to use melting and boiling points to determine if a substance is pure or impure.

10 Minutes on....

Formulations

Key Term	Definition	Examples
Formulation		

Describe how formulations are made.

10 Minutes on....

Chromatography

Key Term	Definition
Chromatography	
Rf Value	

Identify how to calculate the Rf value.

Explain how chromatography separates mixtures.

Explain how chromatography can be used to determine if a substance is pure or not.

10 Minutes on....

Chromatography RP

Construct a method to investigate how chromatography can be used to separate and tell the difference between coloured substances. Use the space below to draw a diagram of how equipment would be set up.

10 Minutes on....

Identifying Common Gases

Gas	Test	Positive Result
Hydrogen		
Oxygen		
Carbon Dioxide		
Chlorine		

10 Minutes on....

Flame Tests

Key Term	Definition
Flame Test	

Metal Ion	Positive Result
Lithium	
Sodium	
Potassium	
Calcium	
Copper	

Explain the problem that can occur if a sample contains a mixture of ions.

10 Minutes on....

Metal Hydroxides

Describe how to carry out a test for ions using metal hydroxides.

Metal Ion	Positive Result
Aluminium	
Calcium	
Magnesium	
Copper (II)	
Iron (II)	
Iron (III)	

Explain how to distinguish between aluminium and calcium ions.

10 Minutes on....

Carbonates

Describe how to carry out a test for carbonates using dilute acids.

Construct word and balanced symbol equations to model the reaction between:

Magnesium Carbonate and Sulfuric Acid

Lithium Carbonate and Hydrochloric Acid.

Construct word and balanced symbol equations to model how a precipitate is formed when carbon dioxide is bubbled through calcium hydroxide $Ca(OH)_2$ (limewater).

10 Minutes on....

Halides and Sulfates

Describe how to carry out a test for halides.

Halide	Positive Result
Silver Chloride	
Silver Bromide	
Silver Iodide	

Describe how to carry out a test for sulfates.

Explain what a precipitate is.

10 Minutes on....

Identifying Ions RP

Construct a method to identify the ions in unknown single ionic compounds. Use the space below to draw a diagram of how equipment would be set up.

10 Minutes on....

Instrumental Methods

Key Term	Definition	Advantages
Instrumental Methods		
Flame Emission Spectroscopy		

Describe the process of flame emission spectroscopy.

10 Minutes on....

Gases In the Atmosphere

Gas	Proportion in the Atmosphere Today
Nitrogen	
Oxygen	
Carbon Dioxide, Water Vapour and Noble Gases	

Construct a pie chart to model the proportion of gases in the atmosphere.

10 Minutes on....

Early Atmosphere

Describe why evidence for the early atmosphere is limited.

Describe how we think the Earth's early atmosphere formed.

10 Minutes on....

Increasing Oxygen

Key Term	Definition
Photosynthesis.	

Construct word and balanced symbol equations for photosynthesis.

Explain why the proportion of oxygen in the atmosphere has increased.

10 Minutes on....

Decreasing Carbon Dioxide

Identify ways the carbon dioxide have decreased in the atmosphere.

Describe and explain the formation of deposits of limestone, coal, crude oil and natural gas.

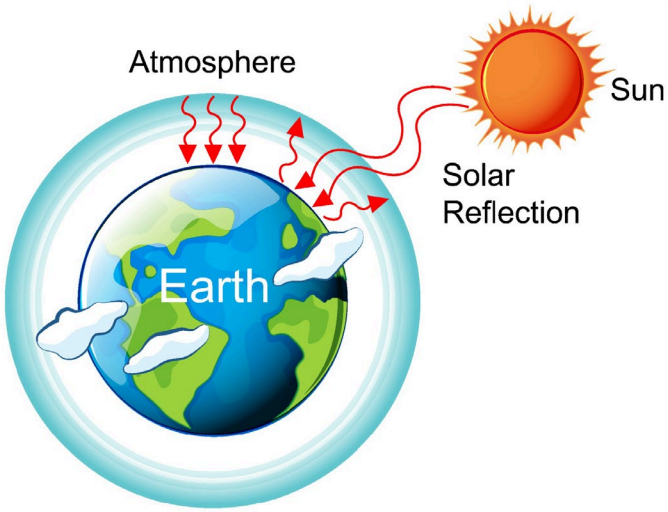
10 Minutes on....

Greenhouse Gases

Key Term	Definition
Greenhouse Gases	

Identify examples of greenhouse gases.

Describe the greenhouse effect in terms of the interaction of short and long wavelength radiation with matter.



10 Minutes on....

Human Activities

Greenhouse Gas	Human Activity that Increases its Amount in the Atmosphere
Carbon Dioxide	
Methane	

Key Term	Definition
Peer Review	

Explain why the theory of global warming is widely accepted

Explain why there are still uncertainties in the evidence for global warming.

10 Minutes on....

Global Climate Change

Key Term	Definition
Global Warming	
Climate Change	

Effects of Global Climate Change	Explanation
Glaciers and Polar Ice Melting	
Expansion of Seawater	
Extreme Weather	
Changes in Animal Migration Patterns	
Changes in Rainfall	
Loss and Extinction of Animals and Plants	
Habitats Changing	

10 Minutes on....

Carbon Footprint

Key Term	Definition
Carbon Footprint	

Way Carbon Footprint can be Reduced	Explanation	Limitations
Solar Panels		
Cycling to School/Work		
Improving Home Insulation		

10 Minutes on....

Atmospheric Pollutants

Pollutant	How It Is Formed	Problems Caused By Pollutant
Carbon Monoxide		
Soot		
Carbon Dioxide		
Sulfur Dioxide		
Oxides of Nitrogen		

10 Minutes on....

Using Earth's Resources

Key Term	Definition
Finite Resource	
Renewable Resource	

Describe the role of chemistry in sustainable development.

Identify what humans use the Earth's resources for.

Identify examples of natural products that are supplemented or replaced by agricultural and synthetic products.

10 Minutes on....

Potable Water

Key Term	Definition
Potable Water	

Identify what the method used to make potable water depends on.

Explain the process of making fresh-water potable.

Describe how salty water can be used to make potable water.

10 Minutes on....

Water Samples RP

Construct a method to identify if a water sample is pure or contains dissolved substances. Use the space below to draw a diagram of how equipment would be set up.

10 Minutes on....

Waste Water

Key Term	Definition
Waste Water	

Identify sources of waste water.

Describe the process of treating sewerage.

Explain why sewerage needs to be treated.

10 Minutes on....

Alternative Methods of Extracting Metals

Key Term	Definition
Phytomining	
Bioleaching	
Electrolysis	

Describe the process of phytomining.

Describe the process of bioleaching.

10 Minutes on....

Life Cycle Assessment

Key Term	Definition
Life Cycle Assessment	

Outline the stages considered during a life cycle assessment.

Explain why lifecycle assessments are not a purely objective process.

10 Minutes on....

Reducing Use of Resources

Explain why we need to reduce our use of resources.

Method of Reducing Use of Resources	Description	Examples
Re-Use		
Recycling		

10 Minutes on....

Preventing Corrosion

Key Term	Definition
Corrosion	
Rusting	

Identify what is required for iron to rust

Describe how rusting can be prevented

Explain why aluminum doesn't tend to corrode.

10 Minutes on....

Alloys

Key Term	Definition
Alloy	

Alloy	Composition
Bronze	
Brass	
Gold	
Steel	
Stainless Steel	

Explain what 24ct, 18ct and 12ct gold is

Steel Alloy	Properties
High Carbon Steel	
Low Carbon Steel	
Stainless Steel	

10 Minutes on....

Ceramics, Polymers and Composites

Type of Glass	Description
Soda-Lime Glass	
Borosilicate Glass	

Identify examples of clay ceramics and describe how they are made.

Type of Polymer	Diagram	Description
Low Density Polyethene		
High Density Polyethene		
Thermosoftening Polymer		
Thermosetting Polymer		

Key Term	Definition	Example
Composite		

10 Minutes on....

Haber Process

Key Term	Definition
Haber Process	

Raw Material	Source
Nitrogen	
Hydrogen	

Construct a word equation to model the Haber Process

Condition of the Haber Process	Explanation
450°C	
200 Atmospheres	
Iron Catalyst	

10 Minutes on....

NPK Fertilisers

Key Term	Definition
NPK Fertilisers	

Describe what ammonia can be used for

Identify how potassium chloride, potassium sulfate and phosphate rock can be obtained.

Identify how soluble salts can be made from phosphate rock.

Acid Added To Phosphate Rock	Salt Made
Nitric Acid	
Sulfuric Acid	
Phosphoric Acid	