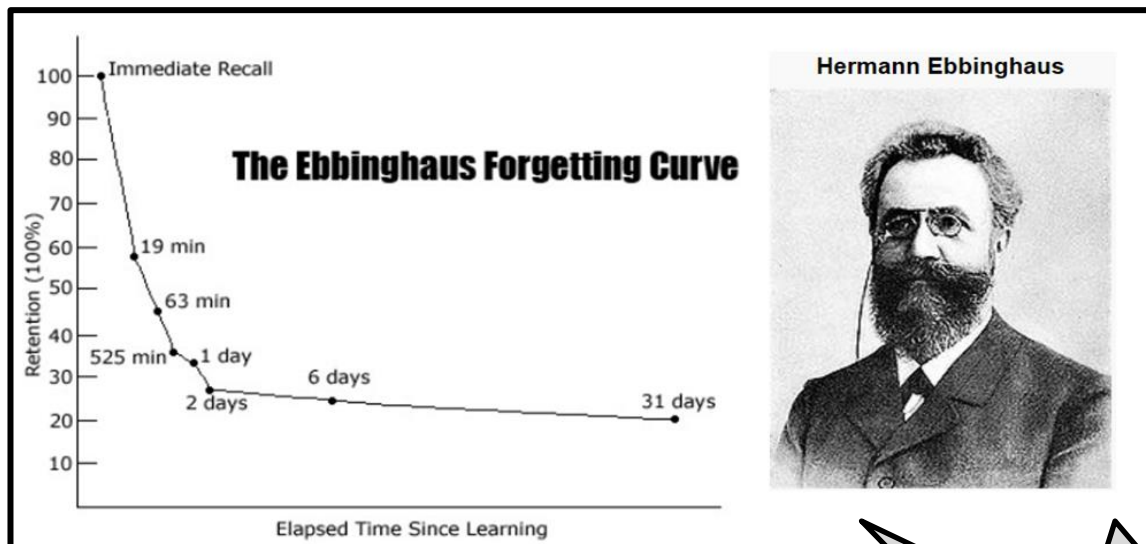


# Core Chemistry GCSE Revision Booklet



Hermann Ebbinghaus demonstrated that we become less able to remember and recall information as the time elapsed since first learning it increases. In other words, regular re-reading following learning improves your ability to remember, recall and ultimately understand what you have covered in lesson.

Don't forget to add dates to your checklist as you complete each task

## How to get the best out of this booklet

**During the lesson:** Make a set of notes for a topic.

**The same day:** At home, re-read your class notes from the lesson.

**The next day:** At home, highlight and add more detail to your class notes in your booklet.

**Next lesson:** Complete a 'Thinking ladder' task relating to the topic.

**The next week:** At home, complete an exam question relating to the topic.

**Within the next 3 weeks:** Complete a test or exam questions and complete your flight path. (Lesson time)

## The Thinking Ladder.

Complete tasks to consolidate and extend your learning. Track which tasks you complete by filling in your booklet and dating when you completed these.

The tasks start off easy at the bottom of the ladder but increase with difficulty as you get nearer the top. The more challenging the task the more advanced the skills required and therefore the higher the grade you are working towards.



# The Thinking Ladder.

	Activities
<b>Create</b>	<ol style="list-style-type: none"> <li>1. Create a comic strip or storyboard on a topic.</li> <li>2. Write a short exam question and mark scheme.</li> <li>3. Create a song or video.</li> <li>4. Write an article on the topic for a revision guide.</li> <li>5. Create a game or animation</li> </ol>
<b>Evaluate</b>	<ol style="list-style-type: none"> <li>1. Opinionated octopus. Evaluate the topic using 4 strengths and 4 weaknesses</li> <li>2. Treasoning</li> <li>3. Use a piece of evidence or data and write an evaluation on it.</li> <li>4. Kerboodle Learning tests</li> </ol>
<b>Analyse</b>	<ol style="list-style-type: none"> <li>1. Create a mind map showing links between each part of the topic.</li> <li>2. Create a flow chart to show a key process.</li> <li>3. Explain a piece of evidence for and against a theory or perspective.</li> <li>4. Conduct a small scale experiment to prove a key point in the topic.</li> </ol>
<b>Apply</b>	<ol style="list-style-type: none"> <li>1. Explain a real life example for each key point.</li> <li>2. Think about the topic and explain this using a cartoon character or TV character.</li> <li>3. Complete the exam questions/ end of topic questions in the AQA book or in your revision guide.</li> <li>4. Kerboodle revision tasks</li> </ol>
<b>Understand</b>	<ol style="list-style-type: none"> <li>1. Create a set of true or false statements and ask a friend to answer them.</li> <li>2. Hungary caterpillar: place all the key terms from a topic in a logical order and link the words together to form a caterpillar</li> <li>3. Pick out 5 key points and explain them in detail, 200 words each.</li> </ol>
<b>Remember</b>	<ol style="list-style-type: none"> <li>1. Write down everything you can remember about the topic from memory.</li> <li>2. Write down all the key terms and define them.</li> <li>3. Make a set of keyword flashcards.</li> <li>4. Make an acronym to help you remember a process or list.</li> </ol>

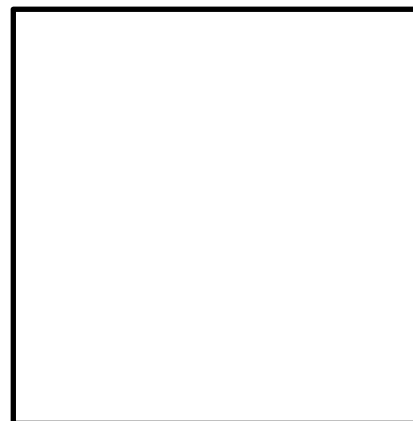
## Topic 1: Periodic Table and chemical reactions

	Notes	Re-read notes	Highlighted notes	Thinking ladder c/w	exam question h/w
Date completed					

State the definition of an element:

State the definition of an atom:

Draw the structure of the atom, stating the name and charge of each subatomic particle.



Explain why an atom has no overall charge.

Choose 4 elements (from the first 20) draw the electron configuration of each



Why do elements in the same group have similar reactions?

Why are the noble gases so unreactive?

Define the following:

Compound	Ion	Molecule

What does the term "conservation of mass" mean?

**Topic 1: Periodic Table and Chemical Reactions thinking ladder task**

**Topic 1: Periodic Table and Chemical Reactions exam question homework**

## Topic 2: Limestone and Building Materials

	Notes	Re-read notes	Highlighted notes	Thinking ladder c/w	exam question h/w
Date completed					

What is the chemical name and formula of Limestone

What are the products of the thermal decomposition of limestone? **Write a balanced symbol equation for this reaction.**

Calcium Oxide reacts with water, what is the product of this reaction? **Write the balanced symbol equation.**

Name one use of this product,

Calcium Hydroxide reacts with carbon dioxide. Explain what will happen to the solution in this reaction and **write the balanced symbol equation for it.**

List two advantages and two disadvantages of using Limestone for building:

Advantages:	Disadvantages:
1.	1.
2.	2.

Describe how to make:

Cement	Mortar	Concrete

Write the word and symbol equations for the following metal carbonates when they are;

- thermally decomposed
- react with water

Copper Carbonate, Zinc Carbonate, Calcium Carbonate and Sodium Carbonate

**Topic 2: Limestone and building materials thinking ladder task**

**Topic 2: Limestone and building materials exam question**  
**homework**

## Topic 3: Metals

	Notes	Re-read notes	Highlighted notes	Thinking ladder c/w	exam question h/w
Date completed					

What is the difference between an ore and a rock?

Explain the method that can be used to concentrate Copper Carbonate before extraction.

What is the difference between the acquisition of reactive and unreactive metals from the earth.

Produce a flow diagram to show how copper is extracted from copper rich ores.

How are more reactive metals than carbon extracted? Explain how metals below carbon in the reactivity series can be extracted from their oxide.

Why is electrolysis an expensive process?



Briefly explain the processes of Phytomining and Bioleaching.

Phytomining	Bioleaching

Benefits of recycling metals: ECONOMIC	Benefits of recycling metals: ENVIRONMENTAL
<ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li></ul>	<ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li></ul>

What is the difference between steel and iron from the blast furnace? Why is steel defined as an alloy?

Why are alloys produced?

Draw a diagram to show the difference in structure between a pure metal and an alloy.

State how the properties of copper make it useful for copper pipes and electrical wires.

**Topic 3: Metals thinking ladder task**

**Topic 3: Metals task exam question homework**

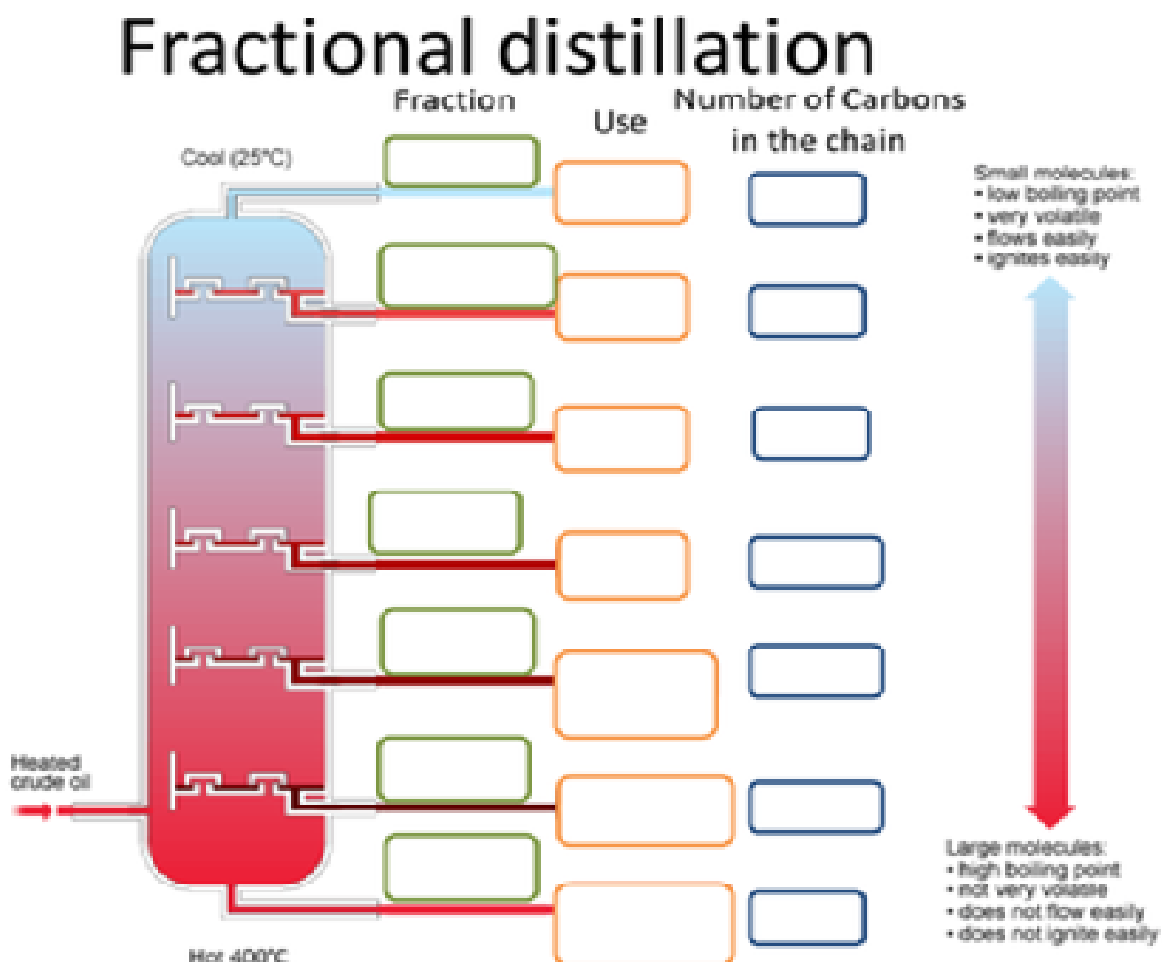
## Topic 4: Crude Oil and hydrocarbons

	Notes	Re-read notes	Highlighted notes	Thinking ladder c/w	exam question h/w
Date completed					

What is the difference between a mixture, element and compound?

Mixture	Element	Compound

Complete the diagram:



What is the relationship between molecule size and boiling point, viscosity, ease of ignition, and flammability?

Define alkanes and draw a diagram of the first two.

List the products of the reaction when a fuel burns. Why are these emissions harmful?

What can be done to reduce these emissions? Name two alternative fuels which are less harmful.

Advantages		Disadvantages	
Fuel 1:	Fuel 2:	Fuel 1:	Fuel 2:

Describe a method that can be used to measure the energy released from fuel.

**Topic 4: Crude Oil and hydrocarbons thinking ladder task**

**Topic 4: Crude Oil and hydrocarbons exam question homework**

## Topic 5: Other useful substances from crude oil

	Notes	Re-read notes	Highlighted notes	Thinking ladder c/w	exam question h/w
Date completed					

How are hydrocarbons cracked and what is produced?

Draw a diagram of EthENE. Write the general formula for an Alkene.

Describe the test for unsaturated hydrocarbons.

Draw a diagram to show the polymerisation of ethane.

State three uses of polymers, for each one describe how the polymer is suitable for its use.

- 1.
- 2.
- 3.

What is the disadvantage of using polymers for plastic bags?

Describe two ways in which ethanol can be produced.

Compare the environmental impact of these two methods.

**Topic 5: Other useful substances from crude oil thinking ladder task**

**Topic 5: Other useful substances from crude oil exam question homework**

## Topic 6 Plant Oils and their uses

	Notes	Re-read notes	Highlighted notes	Thinking ladder c/w	exam question h/w
Date completed					

How are vegetable oils obtained? Why are vegetable oils used in food?

What is an emulsifying agent? Name two uses of an emulsifier

Draw a diagram to explain how emulsifiers have Hydrophobic and Hydrophilic properties.

What is difference between saturated and unsaturated oils.

How can you saturate vegetable oils?

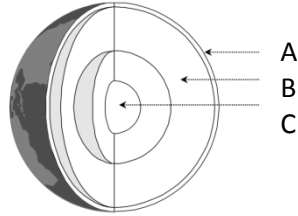
**Topic 6: Plant oils and their uses thinking ladder task**

**Topic 6: Plant oils and their uses exam question homework task**

## Topic 7: Changes in the Earth and its atmosphere

	Notes	Re-read notes	Highlighted notes	Thinking ladder c/w	exam question h/w
Date completed					

Label the parts of the earth.



What is Wegner's theory? Why did people not believe it at first?

What causes the movement of tectonic plates?

How do an earthquake/ volcano occur? Why is it difficult to predict them?

Describe the composition of the Earth's atmosphere.

How could we obtain pure gases from the mixture that we call air?

Describe the theory that explains how the earth's early atmosphere was developed.

Describe one theory of how life could have begun on earth, involving hydrocarbons, ammonia and lightning.

Describe the carbon cycle. Identify how humans have altered the proportion of carbon in each part of the cycle.

**Topic 7: Changes in the Earth and its atmosphere thinking ladder task**

**Topic 7: Changes in the Earth and its atmosphere exam question homework**