100 DAYS of CHEMISTRY Revision

1. Draw and explain the structure of the atom.	2. How do ions form and give examples using diagrams.	3. Describe how the structure of the atom has changed over time.	4. Describe the structure of the modern-day periodic table.	5. Why was Mendeleev's periodic table accepted by other scientists?	6. What are the rules for electron configuration diagrams and draw a diagram for Mg (12), Cl (17) and C (6).	7. Explain how the reaction between sodium and chlorine forms an ionic bond.	8. Complete 40 questions on Educake on topic 1 – Key Concepts	9. Explain why sodium chloride has a high melting point and does not conduct electricity.	10. Explain the pattern of reactivity of alkali metal elements down the group.
11. Why do atoms have a neutral charge? Why do ions have a charge?	12. What is a covalent bond? What type of elements form covalent bonds?	13. Why do simple covalent molecules have low boiling points?	14. In terms of electrons, why are metals good conductors of electricity and thermal energy?	15. Complete 40 questions on Educake on topic 1 – the periodic table	16. Draw a covalent molecule for chlorine gas (Cl_2), water (H_2O) and methane (CH_4)	17. Describe and explain the properties of carbon allotropes (diamond, graphite, graphene and fullerenes)	18. Complete 40 questions on Educake on topic 2 – states of matter and mixtures	19. How is the relative formula mass calculated? Calculate the RFM for the following: H_2O, NaCl, H_2SO_4, $CaCO_3$, $KMnO_4$.	20. How is the percentage by mass calculated? What is the percentage by mass of Na in Na_2CO_3?
21. Complete 40 questions on Educake on topic 3 – chemical changes	22. What is the equation for calculating concentration? How many cm^3 are in a dm^3?	23. Describe the arrangement of particles in a solid, liquid and a gas. **Explain why alloys are useful.**	24. Describe the changes in particle arrangement, forces and internal energy as a solid melts.	25. Describe the different methods for separating mixtures.	26.Complete 40 questions on Educake on topic 3 – states of matter and mixtures.	27. Watch the video and make notes: Pearson Edexcel (9-1) Combined Sciences Core Practical for Chemistry - paper chromatography	28. How is the R_f value of an ink in chromatography can be calculated? **Give the conditions for rusting.**	29. What is potable water and how can it be produced from ground water?	30. How can potable water be produced from wastewater? **Describe the practical to investigate the conditions for rusting.**
31. What factors affect the rate of a chemical reaction?	32. What is the equation for calculating concentration of solutions?	33. Explain why the Noble gases were the last group to be discovered.	34.Complete 40 questions on Educake on topic 4 Extracting metals and equilibria.	35. Why can iron be extracted by heating the ore with carbon?	36. What are the charges and names of the electrodes in electrolysis?	37. What is a reversible reaction and give the symbol used in an equation.	38.What are the conditions needed for the Harber process?	39. What is a life-cycle assessment and why are they useful?	40. Complete 40 questions on Educake on any paper 1 topic
41. Watch the video and make notes: Making Salts - GCSE Science Required Practical	42. Describe a method to investigate the effect of concentration on the rate of a chemical reaction between magnesium and hydrochloric acid.	43. Watch the video and make notes: Pearson Edexcel (9-1) Comb. Sciences - electrolysis of copper sulfate with copper electrodes	44. Describe the chemical tests for the presence of hydrogen, carbon dioxide, chlorine and oxygen. **List the equipment needed for titrations.**	45. Describe and explain under what conditions sodium chloride would conduct electricity. **What are the advantages and disadvantages of fuel cells?**	46. What are the products at each electrode from the electrolysis of solutions of copper sulphate, copper chloride, sodium chloride and molten aluminium oxide?	47.Watch the video and make notes: Pearson Edexcel Comb. Sciences - investigating pH on powdered calcium hydroxide to hydrochloric acid	48. Watch the video to summarise paper 1 chemistry: All of Edexcel CHEMISTRY Paper 1 in 35 minutes - GCSE Science Revision	49.Write the general equations for the reactions of acids with: metals, metal oxides, metal carbonates and metal hydroxides to produce a salt. **What is theoretical yield?**	50.Complete the exam paper for chemistry (paper 2) – select the correct tier. Edexcel GCSE Combined Science Past Papers - Revision Science Or **For separates:** Edexcel Physics Past Papers - Revision Science

51. Describe and explain the trends in the reactivity of the alkali metals. **What is the definition for actual yield?**	52. Describe and explain the trends in boiling points of the halogens.	53.Describe and explain the factors affecting the rate of a chemical reaction?	**54.** What is an exothermic and endothermic reaction? Give examples.	**55.** Draw an energy profile diagram for an exothermic and endothermic reaction.	56. What is a catalyst and how does it effect the activation energy of a reaction?	57. Describe a method for investigating the effect of concentration on the volume of gas released in a reaction.	58. What is a hydrocarbon and what is the general formula for alkanes?	59.What is crude oil and how can it be separated?	60. Complete 40 questions on Educake on topic 6 – Groups in the periodic table
61. Describe the process of fractional distillation.	62. What is the general formula for an alkene and draw the diagram of ethene and butene. **What is the test for the presence of an alkene?**	63. Explain why long chain hydrocarbons have a higher boiling point than short chain hydrocarbons.	64.Watch the core practical video and make notes: Monitoring rates of reaction by recording a) change in gas volumes b) a change in colour	65. How are polymers made from monomers and what is a homologous series?	66. What is incomplete combustion and what are the dangers of this when burning fuels?	67.What is cracking and why is it useful? **State the 2 forms of polymerisation.**	68.Complete 40 questions on Educake on topic 7 – Rates of reaction and energy changes.	69.Watch the core practical video and make notes. Pearson Edexcel (9-1) GCSE Chemistry Core Practical - testing for cations and anions	70. What is the composition of the modern atmosphere?
71.Watch the core practical video and make notes. Pearson Edexcel (9-1) GCSE Chemistry Core Practical - distillation and paper chromatography	72.Complete 40 questions on Educake on topic 8 – Earth and fuels.	73. What was the composition of the early atmosphere and where did these gases originate?	74. How did oceans form on Earth?	75.Watch the core practical video and make notes. Pearson Edexcel (9-1) GCSE Chemistry Core Practical - acid-Alkali titration	76. How and why has the atmosphere change from its first formation to now?	77. What human activities are contributing to climate change? **What is the meaning of the term biodegradable?**	78. What are the consequences of global warming? **Give the advantages and disadvantages of recycling polymers.**	79. Why is the atmosphere useful?	80.Complete 40 questions on Educake on any paper 2 topic
81. How does the greenhouse effect occur and how is human activity contributing to this?	82. Explain how a catalyst affects the rate of reaction. Draw a reaction profile to demonstrate this.	83. What is oxidation and reduction? **Give examples of biological polymers.**	84. What is a metal ore?	85.Complete 40 questions on Educake on any paper 2 topic	86. What is a dynamic equilibrium?	87. What are the physical properties of group 1 and group 7 elements?	88. State the uses of the products of fractional distillation.	89. How is acid rain formed and what are the problems associated with acid rain?	90. What are the advantages and disadvantages of using hydrogen as a fuel in cars?
91. Describe the following types of reactions: neutralisation, displacement and precipitation. **Why does fractional distillation increase the concentration of ethanol?**	92. How can the effects of climate change be reduced, mitigated or reversed?	93. Why is cracking necessary?	94.Complete the exam paper for physics (paper 2) – select the correct tier. Edexcel GCSE Combined Science Past Papers - Revision Science Or **For separates:** Edexcel Physics Past Papers - Revision Science	95.Complete the exam paper for physics (paper 2) – select the correct tier. Edexcel GCSE Combined Science Past Papers - Revision Science Or **For separates:** Edexcel Physics Past Papers - Revision Science	96.Complete the exam paper for physics (paper 4) – select the correct tier. Edexcel GCSE Combined Science Past Papers - Revision Science Or **For separates:** Edexcel Physics Past Papers - Revision Science	97.Complete the exam paper for physics (paper 4) – select the correct tier. Edexcel GCSE Combined Science Past Papers - Revision Science Or **For separates:** Edexcel Physics Past Papers - Revision Science	98. Watch the video to summarise all of paper 2 chemistry: All of Edexcel CHEMISTRY Paper 2 in 25 minutes - GCSE Science Revision	99.Complete the exam paper for physics (paper 2) – select the correct tier. Edexcel GCSE Combined Science Past Papers - Revision Science Or **For separates:** Edexcel Physics Past Papers - Revision Science	100.Complete the exam paper for physics (paper 2) – select the correct tier. Edexcel GCSE Combined Science Past Papers - Revision Science Or **For separates:** Edexcel Physics Past Papers - Revision Science