

100 revision tasks for 100 days

- These tasks cover Combined Science Paper 1 and Paper 2
- Doing these tasks will help **get you started** and **focus** your revision
- These tasks **do not** cover all of the content. Use this alongside PLCs and your revision guide to make sure you revisit **everything**
- Other revision resources are available on Seneca, bitesize and Educake

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COMBINED SCIENCE P1 = Paper 1, P2 = Paper 2. RP - Required Practical.

Start revision early - Complete one 10-15 minute task everyday.

BIOLOGY

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1. P1 CELL BIOLOGY Sketch and label a plant and animal cell. Give examples of two specialised animal and plant cells; describe how they are specialised.	2. P1 ATOMIC STRUCTURE Draw the electronic configurations of elements 1-20. Use a Periodic Table to help you.	3. P1 ENERGY Recall the equations to calculate kinetic energy and gravitational potential energy. Answer a question from the Year 11 resources> Exam Questions> P1 folder. Mark and correct with purple pen using mark scheme	4. P1 BONDING Draw dot and cross diagrams to show the electronic configuration of Na, Mg, O and Cl. Then draw the electronic configurations of Na^+ , Mg^{2+} , O^{2-} and Cl^- .	5. P1 ORGANISATION Draw a labelled diagram of the heart. Describe how blood is pumped around the body and to the lungs. Explain how the structure of arteries, veins and capillaries relate to function.
6. P1 QUANTITATIVE Calculate the M_r of H_2O , CaCO_3 and $\text{Mg}(\text{OH})_2$. Define the term 'uncertainty'. Write down how to use a range to calculate uncertainty.	7. P1 ELECTRICITY Learn and recall the six electricity equations that include the quantities: Q, I, t, V, R, P, and E. Know how to calculate total resistance in a series circuit.	8. P1 INFECTION Describe the stages in preclinical and clinical drug testing. Refer to your revision guides if needed. Define the term efficacy.	9. P1 CHEMICAL CHANGES List the following metals in order of reactivity: potassium, magnesium, sodium, zinc, lithium, iron, calcium and copper. Explain how metals less reactive than copper can be extracted from their ores.	10. P1 PARTICLE MODEL Recall the density equation. RP - Write a plan to explain how to measure the density of a chess piece. Use your revision guides or YouTube to help you.
11. P1 BIOENERGETICS Answer a chosen question from the Year 11 resources> Exam Questions> B4 folder. Mark and correct with purple pen using mark scheme	12. P1 ENERGY CHANGES Define the terms exothermic and endothermic. Give examples of both reactions.	13. P1 ATOMIC STRUCTURE Define the term isotope. Check you understand the work of Rutherford, Bohr and Chadwick in the development of the model of an atom. Draw a diagram to show the plum-pudding model of an atom.	14. P1 CELL BIOLOGY RP - describe how to use a microscope. Answer a chosen question from the Year 11 resources> Exam Questions> B1 folder. Mark and correct with purple pen using mark scheme	15. P1 ATOMIC STRUCTURE Describe the processes of filtration, crystallisation, distillation, fractional distillation and chromatography.
16. P1 ENERGY RP - Recall the equation for specific heat capacity. Using your revision guide to help you, write a plan to investigate the specific heat capacity of a block of copper.	17. P1 BONDING Draw dot and cross diagrams to show the covalent bonding in H_2O , NH_3 , and O_2 . Draw dot and cross diagrams to show the ionic bonding in NaCl , MgCl_2 and MgO	18. P1 ORGANISATION RP - Write a plan to investigate the effect of pH on enzymes. Describe the food tests for sugars, starch, proteins and lipids	19. P1 QUANTITATIVE Practise balancing equations using the following link: http://www.sciencegeek.net/Chemistry/taters/EquationBalancing.htm	20. P1 ELECTRICITY RP - Use your revision guide or YouTube to help. Write a plan to investigate the resistance in a length of wire or of resistors in series or parallel.
21. P1 INFECTION Explain how these diseases can be spread and how to prevent the spread: Measles, HIV, Tobacco mosaic virus and Rose black spot.	22. P1 CHEMICAL CHANGES RP - Draw a labelled diagram to show electrolysis of brine. Describe what happens at each electrode. (Higher only) write half equations for each electrode.	23. P1 PARTICLE MODEL Define the terms specific latent heat of vaporisation and of fusion. Answer a question from the Year 11 resources> Exam Questions> P3 folder. Mark and correct with purple pen using mark scheme	24. P1 BIOENERGETICS RP - Write a plan to investigate the effect of light intensity on the rate of photosynthesis	25. P1 ENERGY CHANGES RP - Write a plan to investigate the variables that affect temperature changes in reacting solutions. The link will help: Link

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<p>26. P1 ATOMIC STRUCTURE Describe the properties of alpha, beta and gamma radiation. Describe some uses of nuclear radiation.</p>	<p>27. P1 CELL BIOLOGY Describe the stages in mitosis. Answer the cell division question from the Year 11 resources> Exam Questions> B1 folder. Mark and correct with purple pen using mark scheme</p>	<p>28. P1 ATOMIC STRUCTURE Answer two chosen questions from the Year 11 resources> Exam Questions> C1 folder. Mark and correct with purple pen using mark scheme</p>	<p>29. P1 ENERGY State the Law of Conservation of energy. Recall the efficiency equations. Describe ways to reduce unwanted heat loss in a house.</p>	<p>30. P1 BONDING Describe and explain the properties of the following and how this links to bonding: ionic compounds, small molecules, polymers, giant covalent structures, metals & alloys</p>
<p>31. P1 ORGANISATION Answer two chosen questions from the Year 11 resources> Exam Questions> B2 folder. Mark and correct with purple pen using mark scheme</p>	<p>32. P1 QUANTITATIVE (Higher only) How do you calculate moles? Try these practise questions: https://www.bbc.com/bitesize/guides/zysk7ty/test</p>	<p>33. P1 ELECTRICITY Draw a diagram to show how to wire a three-pin plug. Explain what the national Grid is using terms Transformer, pylons, cables, step-up and step-down.</p>	<p>34. P1 INFECTION Explain how these diseases can be spread and how to prevent the spread: Salmonella, Gonorrhoea and malaria.</p>	<p>35. P1 CHEMICAL CHANGES Write equations for Mg reacting with HCl, NaOH reacting with HCl and CaCO₃ reacting with HCl. Define the terms acid and alkali in terms of ions.</p>
<p>36. P1 PARTICLE MODEL Draw particle models of the three states of matter. What words are used to describe the changes in state?</p>	<p>37. P1 BIOENERGETICS Write the equations for aerobic and anaerobic respiration. Compare the different need for oxygen, the products and the amounts of energy transferred in both types of respiration.</p>	<p>38. P1 ENERGY CHANGES Define the term activation energy. Draw a reaction profile to show an exothermic reaction and for an endothermic reaction.</p>	<p>39. P1 ATOMIC STRUCTURE Use your revision guide to recap nuclear equations. Answer a chosen question from the Year 11 resources> Exam Questions> P4 folder. Mark and correct with purple pen using mark scheme</p>	<p>40. P2 HOMEOSTASIS Draw a diagram of the pathway of a nerve impulse from stimulus to response. Identify the components of the CNS. Give two examples of a human reflex action.</p>
<p>41. P2 RATES Give an example of a reversible reaction and what the term equilibrium means. Higher only: describe how changes to concentration, pressure and temperature affect equilibrium.</p>	<p>42. P2 FORCES RP - Write two plans. One to investigate how the force on a spring affects extension. The second, how changing the forces on an object affects its acceleration.</p>	<p>43. P2 INHERITANCE Draw a diagram to show the stages in meiosis. Compare meiosis to mitosis. Explain how sexual reproduction can lead to variation.</p>	<p>44. P2 ORGANIC Write the general formula for an alkane. Name the first four alkanes, write their chemical formula and their displayed formula.</p>	<p>45. P2 WAVES Write a plan for investigating waves in a ripple tank link and investigating the absorption of Infra red radiation link.</p>
<p>46. P2 VARIATION Describe the evidence for the theory of evolution. Describe factors that could make a species extinct.</p>	<p>47. P2 CHEMICAL ANALYSIS Define the terms <i>purity</i> and <i>formulation</i>. Answer a chosen question from the Year 11 resources> Exam Questions> C8 folder. Mark and correct with purple pen using mark scheme</p>	<p>48. P2 MAGNETISM Sketch the magnetic field lines around a bar magnet, a solenoid and a current carrying wire. Add arrows to show the direction of the field. State four magnetic materials.</p>	<p>49. P2 ECOLOGY State four abiotic and four biotic factors. Answer a chosen question from the Year 11 resources> Exam Questions> B7 folder. Mark and correct with purple pen using mark scheme</p>	<p>50. P2 ATMOSPHERE Explain how the early atmosphere is different from our current atmosphere. Explain how oxygen levels increased and carbon dioxide levels decreased.</p>

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<p>51. P2 RESOURCES Give examples of finite and renewable resources. Explain the difference between finite and renewable resources.</p>	<p>52. P2 HOMEOSTASIS Answer a reaction time question from the Year 11 resources> Exam Questions> B5 folder. Mark and correct with purple pen using mark scheme</p>	<p>53. P2 RATES Answer two chosen questions from the Year 11 resources> Exam Questions> C6 folder. Mark and correct with purple pen using mark scheme</p>	<p>54. P2 FORCES There are 7 equations to learn in Forces. What are they? Symbols used are: W, m, g, F, s, k, e, P, A, v and t.</p>	<p>55. P2 INHERITANCE Practise Punnett squares here: https://www.quia.com/quiz/806830.html Answer a chosen question from the Year 11 resources> Exam Questions> B6 folder. Mark and correct with purple pen using mark scheme</p>
<p>56. P2 ORGANIC Describe the process of fractional distillation. Answer a chosen question from the Year 11 resources> Exam Questions> C7 folder. Mark and correct with purple pen using mark scheme</p>	<p>57. P2 WAVES What is the wave speed equation? Compare transverse and longitudinal waves giving examples of each.</p>	<p>58. P2 VARIATION Describe the process of selective breeding. Answer a chosen question from the Year 11 resources> Exam Questions> B6 folder. Mark and correct with purple pen using mark scheme</p>	<p>59. P2 CHEMICAL ANALYSIS RP - describe how to use paper chromatography to separate a mixture of ink. State how to calculate an R_f value.</p>	<p>60. P2 MAGNETISM Explain how to make an electromagnet. How can you increase the strength of an electromagnet?</p>
<p>61. P2 ECOLOGY Test yourself on organisation of an ecosystem: https://www.bbc.com/bitesize/guides/zqskv9q/test Revisit the areas where you scored zero.</p>	<p>62. P2 ATMOSPHERE Answer two chosen questions from the Year 11 resources> Exam Questions> C9 folder. Mark and correct with purple pen using mark scheme</p>	<p>63. P2 RESOURCES Answer two chosen questions from the Year 11 resources> Exam Questions> C10 folder. Mark and correct with purple pen using mark scheme</p>	<p>64. P2 HOMEOSTASIS Explain how the hormones insulin and glycogen are used to control blood glucose levels. Describe the differences between type I and type II diabetes.</p>	<p>65. P2 RATES Describe how a catalyst works. Sketch a reaction profile for an exothermic reaction then one for an exothermic reaction with a catalyst.</p>
<p>66. P2 FORCES Answer two chosen questions from the Year 11 resources> Exam Questions> P5 folder. Mark and correct with purple pen using mark scheme</p>	<p>67. P2 INHERITANCE Define the terms: gamete, chromosome, gene, allele, dominant, recessive, homozygous, heterozygous, genotype and phenotype.</p>	<p>68. P2 ORGANIC Write the general formula for the combustion of an alkane. Describe the trends in boiling points, viscosity and flammability in fuels as the hydrocarbon chains get longer.</p>	<p>69. P2 WAVES List the electromagnetic spectrum in order. Gives examples of uses and dangers associated with electromagnetic waves.</p>	<p>70. P2 VARIATION Describe the process of genetic engineering. Answer a chosen question from the Year 11 resources> Exam Questions> B6 folder. Mark and correct with purple pen using mark scheme</p>
<p>71. P2 CHEMICAL ANALYSIS Answer two chosen questions from the Year 11 resources> Exam Questions> C8 folder. Mark and correct with purple pen using mark scheme</p>	<p>72. P2 MAGNETISM (higher only) What does each digit represent in Fleming's left hand rule?</p>	<p>73. P2 ECOLOGY RP - write a plan to study the distribution of small organisms using a quadrat.</p>	<p>74. P2 ATMOSPHERE Read about ways to reduce your carbon footprint link.</p>	<p>75. P2 RESOURCES Carry out a life cycle assessment for a paper bag and a plastic bag using the four LCA stages.</p>

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<p>76. P1 CELL BIOLOGY Recap the processes diffusion, osmosis and active transport. RP - Write a plan investigating the effect of salt solutions on the mass of plant tissue (e.g. potato)</p>	<p>77. P1 ATOMIC STRUCTURE Describe the properties of the elements in Group 0, 1 and 7. Explain the trend in properties as you go down the group.</p>	<p>78. P1 ENERGY Give advantages and disadvantages for different energy resources: fossil fuels, nuclear fuel, bio-fuel, wind, hydroelectricity, geothermal, tidal, sun and water waves.</p>	<p>79. P1 BONDING Describe the structure and bonding of diamond, graphite, graphene & fullerenes. Answer one question from the Year 11 resources> Exam Questions> C2 folder. Mark and correct with purple pen using mark scheme</p>	<p>80. P1 ORGANISATION Answer two chosen questions from the Year 11 resources> Exam Questions> B2 folder. Mark and correct with purple pen using mark scheme</p>
<p>81. P1 QUANTITATIVE Answer two chosen questions from the Year 11 resources> Exam Questions> C3 folder. Mark and correct with purple pen using mark scheme</p>	<p>82. P1 ELECTRICITY Sketch graphs to show how current and Potential Difference vary in a Ohmic conductor, filament bulb and diode. Explain how resistance varies in a LDR and thermistor.</p>	<p>83. P1 INFECTION Answer two chosen questions from the Year 11 resources> Exam Questions> B3 folder. Mark and correct with purple pen using mark scheme</p>	<p>84. P1 CHEMICAL CHANGES RP - Write a plan for the preparation of copper sulfate crystals from copper oxide.</p>	<p>85. P1 ELECTRICITY Explain how current, resistance and potential difference vary in series and parallel circuits. Answer a question from the Year 11 resources> Exam Questions> P2 folder. Mark and correct with purple pen using mark scheme</p>
<p>86. P1 BIOENERGETICS Describe the effects of exercise on the body. Define the term metabolism.</p>	<p>87. P1 ENERGY CHANGES Answer two chosen questions from the Year 11 resources> Exam Questions> C5 folder. Mark and correct with purple pen using mark scheme</p>	<p>88. P1 ATOMIC STRUCTURE Use your revision guide to recap half-life of radioactive nuclei. Answer a question from the Year 11 resources> Exam Questions> P4 folder. Mark and correct with purple pen using mark scheme</p>	<p>89. P2 HOMEOSTASIS Answer 2 chosen question from the Year 11 resources> Exam Questions> B5 folder. Mark and correct with purple pen using mark scheme</p>	<p>90. P2 RATES State how to measure the rate of a reaction. Explain ways to increase the rate of a reaction. Use the words <i>collision</i> and <i>frequency</i> in your explanations.</p>
<p>91. P2 FORCES How is stopping distance calculated? State factors that can affect thinking distance and factors that can affect braking distance.</p>	<p>92. P2 INHERITANCE Describe the symptoms and treatments of cystic fibrosis and polydactyly. Give reasons for and against embryo screening.</p>	<p>93. P2 ORGANIC Describe the process of cracking. Write an equation to show the cracking of $C_{10}H_{22}$ in to C_8H_{18} and C_2H_4. Draw the molecule being cracked and the molecules made.</p>	<p>94. P2 WAVES Answer two chosen questions from the Year 11 resources> Exam Questions> P6 folder. Mark and correct with purple pen using mark scheme</p>	<p>95. P2 VARIATION Name the groups in the Linnaean classification system. Answer a chosen question from the Year 11 resources> Exam Questions> B6 folder.</p>
<p>96. P2 CHEMICAL ANALYSIS Describe how to test for Chlorine, oxygen, hydrogen and carbon dioxide gases. State what the positive result would be.</p>	<p>97. P2 MAGNETISM Answer a question from the Year 11 resources> Exam Questions> P7 folder. Mark and correct with purple pen using mark scheme</p>	<p>98. P2 ECOLOGY Answer two chosen questions from the Year 11 resources> Exam Questions> B7 folder. Mark and correct with purple pen using mark scheme</p>	<p>99. P2 ATMOSPHERE Answer two chosen questions from the Year 11 resources> Exam Questions> C9 folder. Mark and correct with purple pen using mark scheme</p>	<p>100. P2 RESOURCES RP - Explain the different methods to obtain potable water.</p>