Year 10

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| **Term** | **Topic**  | **Topic Content (FT, HT and Triple)** | **Required Practical’s** | **Helpful Revision Links** |
| **Autumn Term 1** | **Preventing and treating disease (B6)** | * Vaccination
* Antibiotics and painkillers
* Drug discovery
* Drug Development
* Making monoclonal antibodies
 |  | * Oak national
* <https://classroom.thenational.academy/units/organisation-2345>
* BBC bitesize
* <https://www.bbc.co.uk/bitesize/guides/z8fkmsg/revision/3>
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| **Non communicable diseases (B7)** | * Non communicable diseases
* Cancer
* Smoking and the risk of disease
* Diet, exercise and disease
* alcohol and other carcinogens
 |  | * BBC Bitesize
* <https://www.bbc.co.uk/bitesize/guides/z372ng8/revision/1>
* Oak National
* <https://classroom.thenational.academy/units/organisation-2345>
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| **Chemical calculations (C4)** | * Relative masses and moles
* Equations and calculations
* From masses to balanced equations
* The yield of a chemical reaction
* Atom economy
* Expressing concentrations
* Titrations
* Titration calculations
* Volumes of gases
 |  | * Oak national
* <https://classroom.thenational.academy/units/quantitative-chemistry-4db7>
* BBC Bitesize
* <https://www.bbc.co.uk/bitesize/topics/z87mw6f>
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|  | **Electric Circuits (P4)** | 4.2 - Current and Charge4.3 - Potential difference and Resistance4.4 - Component Characteristics4.5 - Series Circuits4.6 - Parallel Circuits | **Required practical activity 3:** Use circuit diagrams to set up and check appropriate circuits.**Required practical activity 4:** use circuit diagrams to construct appropriate circuits to investigate the I–V characteristics of a variety of circuit elements | Electricity <https://www.youtube.com/playlist?list=PL9IouNCPbCxXc2NQoIZN7-3jIKN7vW-Sq> Oak National Academy: <https://teachers.thenational.academy/units/electricity-ht-761e> BBC Bitesize:* <https://www.bbc.co.uk/bitesize/topics/zcg44qt>
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| **Autumn 2** | **Electricity in the home (P5)** | 5.1 - Alternating Current5.2 - Cables and Plugs5.3 - Electrical Power and Potential Difference5.4 Electrical Currents and Energy Transfer5.5 - Appliances and Efficiency |  | Electricity <https://www.youtube.com/playlist?list=PL9IouNCPbCxXc2NQoIZN7-3jIKN7vW-Sq> Oak National Academy: <https://teachers.thenational.academy/units/electricity-ht-761e> BBC Bitesize:<https://www.bbc.co.uk/bitesize/topics/zcg44qt> |
| **PPE** |  |  |  |
|  | **Electrolysis (C6)** | 6.1 - Introduction to Electrolysis6.2 - Changes at the electrodes6.3 - The Extraction of Aluminium6.4 - Electrolysis of Aqueous Solutions | **Required practical 3**: investigate what happens when aqueous solutions are electrolysed usinginert electrodes. | RP 3: <https://youtu.be/ukbtTTG1Kew?list=PL9IouNCPbCxX8QpFbntg415HVIvVDHjx_>Electrolysis:<https://www.youtube.com/watch?v=AhTRiL6xjBA> |
| **The Nervous System (B10)** | 10.1 - The Principles of Homeostasis10.2 - The Structure and Function of the Human Nervous System10.3 - Reflex Actions**10.4 - The Brain (Triple)****10.5 - The Eye (Triple)**10.6 - Common Problems of the eye | **Required practical activity 7:** plan and carry out an investigation into the effect of a factor on humanreaction time. | BBC Bitesize: (The Nervous System)<https://www.bbc.co.uk/bitesize/topics/zyybb82>Oak National:<https://teachers.thenational.academy/units/homeostasis-and-response-1a15>  |
| **Spring 1** | **Hormonal coordination (B11)** | 11.1 - Principles of Hormonal Control11.2 - The Control of Blood Glucose Levels11.3 - Treating Diabetes11.4 - The Role of Negative Feedback11.5 - Human Reproduction11.6 - Hormones and the Menstrual Cycle11.7 - The Artificial Control of Fertility **11.8 - Infertility Treatments (Higher Only)****11.9 - Plant Hormones and Responses (Triple)****11.10 - Using Plant Hormones (Higher Only)** |  | Homeostasis and the Nervous System:<https://www.youtube.com/playlist?list=PL9IouNCPbCxW3lptxS1yHCP2I9YDfM2co> RP 7: <https://www.youtube.com/watch?v=Fm02i4vEi5Q&list=PL9IouNCPbCxW-1dmPqGTS-CLZi-h66Fiz&index=2&t=0s> Hormonal Coordination <https://teachers.thenational.academy/units/homeostasis-and-response-1a15> |
| **Energy Changes (C7)** | 7.1 - Exothermic and Endothermic Reactions7.2 - Using Energy Transfers from Reactions7.3 - Reaction Profiles**7.4 - Bond Energy Calculations (Higher only)****7.5 - Chemical Cells and Batteries (Triple)** | **Required practical 4**: investigate the variables that affect temperature changes in reactingSolutions. | Oak National: (Energy Changes)<https://teachers.thenational.academy/units/energy-changes-b607> BBC Bitesize:<https://www.bbc.co.uk/bitesize/topics/z27xxfr> RP 4: <https://youtu.be/rdI7xEq4Ew8?list=PL9IouNCPbCxX8QpFbntg415HVIvVDHjx_> |
| **Spring 2**  | **Photosynthesis (B8)** | PhotosynthesisLimiting factorsPhotosynthesis core practicalUses of Glucose | **Photosynthesis core practical** [**https://www.bbc.co.uk/bitesize/guides/zs4mk2p/revision/5**](https://www.bbc.co.uk/bitesize/guides/zs4mk2p/revision/5) | Oak national <https://classroom.thenational.academy/units/bioenergetics-244e> BBC Bitesize<https://www.bbc.co.uk/bitesize/guides/zpwmxnb/revision/1>  |
| **Molecules and Matter (P6)**  | .1 - Density6.2 - States of Matter6.3 - Changes of State6.4 - Internal Energy6.5 - Specific Latent Heat**6.6 - Gas Pressure and Temperature (Triple)****6.7 - Gas Pressure and Volume (Triple)**6.8 - Specific Heat Capacity6.9 - Brownian Motion  | **Required practical activity 5:** use appropriate apparatus to make and record the measurementsneeded to determine the densities of regular and irregular solid objects and liquids  | BBC Bitesize:<https://www.bbc.co.uk/bitesize/topics/z27xxfr> RP 4: <https://youtu.be/rdI7xEq4Ew8?list=PL9IouNCPbCxX8QpFbntg415HVIvVDHjx_> Particle Model of Matter:<https://www.youtube.com/playlist?list=PL9IouNCPbCxWdHszkb6n6503ommOpg_t7> Bitesize: <https://www.bbc.co.uk/bitesize/topics/z3ybb82> RP 5: <https://youtu.be/YsZeZotYVag?list=PL9IouNCPbCxUM3haKHDGlF4AY_UimtCyN>  |
| **Summer 1**  | **Radioactivity (P7)** | 7.1 - Atoms and Radiation7.2 - The discovery of the nucleus7.3 - Changes in the Nucleus7.4 - More about Alpha, Beta and Gamma7.5 - Activity and Half-life7.6 - Nuclear Radiation in Medicine **7.7 - Nuclear Fission (Triple)****7.8 - Nuclear Fusion (Triple)**7.9 - Nuclear Issues  |  | Atomic Structure and Radioactivity: <https://www.youtube.com/playlist?list=PL9IouNCPbCxXTU7zSX4IvJDLrtCEmqEMU> BBC Bitesize:<https://www.bbc.co.uk/bitesize/topics/zshssrd>  |
| **Crude oils and Fuels (C9)** | 9.1 - Hydrocarbons9.2 - Fractional Distillation of Oil9.3 - Burning Hydrocarbon Fuels9.4 - Cracking Hydrocarbons |  | Organic Chemistry:<https://www.youtube.com/playlist?list=PL9IouNCPbCxVDcgWiviYYWj0xKMPXTd8s> Oak National: <https://teachers.thenational.academy/units/organic-chemistry-7c58> BBC Bitesize:<https://www.bbc.co.uk/bitesize/topics/z9488mn>  |
| **Reproduction (B13)** | 13.1 - Types of reproduction13.2 - Cell Division in Sexual Reproduction**13.3 - The Best of Both Worlds (Triple Only)**13.4 - DNA and the Genome**13.5 - DNA Structure (Triple)and Protein Synthesis (Higher only)**13.6 - Gene Expression and Mutations13.7 - Inheritance in Action13.8 - More about Genetics13.9 - Inherited Disorders13.10 - Screening for Genetic Disorders |  | Inheritance:<https://www.youtube.com/playlist?list=PL9IouNCPbCxWt28Bifo2jK9xn-ym956sf> Oak National:<https://teachers.thenational.academy/units/inheritance-variation-and-evolution-0224> BBC Bitesize:<https://www.bbc.co.uk/bitesize/topics/zppffcw>  |
|  | **Variation and Evolution (B14)** | 14.2 - Variation14.3 - Selective Breeding14.4 - Genetic Engineering* **(HT only)** Students should be able to describe the main steps in the process of genetic engineering.

**14.5 - Cloning (Triple)**14.6 - Adult Cell Cloning 14.7 - Ethics of Genetic Technology |  | Oak National:<https://teachers.thenational.academy/units/inheritance-variation-and-evolution-0224>Bitesize:<https://www.bbc.co.uk/bitesize/topics/zppffcw>Inheritance <https://www.youtube.com/playlist?list=PL9IouNCPbCxWt28Bifo2jK9xn-ym956sf>  |
| **Genetics and Evolution(B15)** | 15.1 - The History of Genetics**15.2 - Theories of Evolution (Triple)**15.3 - Accepting Darwin’s Ideas 15.4 - Evolution and Speciation (Triple)15.5 - Evidence for Evolution15.6 - Fossils and Extinction15.7 - More about Extinction15.8 - Antibiotic Resistant Bacteria 15.9 - Classification15.10 - New Systems of Classification  |  | Oak National:<https://teachers.thenational.academy/units/inheritance-variation-and-evolution-0224> Bitesize:<https://www.bbc.co.uk/bitesize/topics/zppffcw> Variation and Evolution:<https://www.youtube.com/playlist?list=PL9IouNCPbCxXqJycGYKJhk2PMKICNBBZ8>  |
| **Summer 2**  | **PPE** |  |  |  |
| **Chemical Analysis (C12)** | 12.1 - Pure Substances and Mixtures12.2 - Analysing Chromatograms12.3 - Testing for Gases12.4 - Tests for Positive ions12.5 - Tests for Negative ions12.6 - Instrumental Analysis (Triple Only) |  | Chemical Analysis:<https://www.youtube.com/playlist?list=PL9IouNCPbCxXlBeaxebOG5yf_pGrxzOyR> Oak National:<https://teachers.thenational.academy/units/chemical-analysis-cf8d>BBC Bitesize:<https://www.bbc.co.uk/bitesize/topics/zgbccj6>  |
|  | **Our Atmosphere (C13)**  | 13.1 - History of our Atmosphere13.2 - Our Evolving Atmosphere13.3 - Greenhouse Gases13.4 - Global Climate Change13.5 - Atmospheric Pollutants | No Required Practical’s | * BBC Bitesize: <https://www.bbc.co.uk/bitesize/topics/zysvv9q>
* Oak National: <https://classroom.thenational.academy/units/chemistry-of-the-atmosphere-ht-ec1f>
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|  | **The Earth’s Resources (C14)** | 14.1 - Finite and Renewable Resources**14.2 - Water Safe to Drink** 14.3 - Treating Waste Water14.4 - Extracting Metals from Ores **(HT)**14.5 - Life Cycle Assessments14.6 - Reduce, Reuse and Recycle | **Lesson 14.2 RP -** Analysis and Purification of Water Samples | * BBC Bitesize: <https://www.bbc.co.uk/bitesize/topics/zptnng8>
* Oak National: <https://classroom.thenational.academy/units/using-resources-ht-9d74>
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