Physics **SOW** & **Required Practical** (2022-2023)**: Y13** (A2)

 **AQA A-level Physics: 7408**

 **Year 13:** *(green covered)*

1. ***Particles and radiation***
2. ***EM radiation and Q phenomena***
3. ***Waves***
4. ***Mechanics***
5. ***Materials***
6. ***Electricity***

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 ***7. Further mechanics***

 **13. Astrophysics (option)**

 **8. Gravitational and electric field**

 **9. Electromagnetism**

 **10. Capacitors**

 **11. Nuclear physics…**

 **12. Thermal physics**

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| **Week** | **Date** | **Topic** | **Cross-curricular** | **Additional notes/spec code** |
| W1 | 04-09-23 | * N/A
* Recap of Further Mechanics
* FD and gap analysis
 |  | **Monday (4th ) INSET day*****7. Further mechanics*** Spec\_ref: 3.6.1.1 to 3.6.1.4 |
|  W2 | 11-09-23 | * 13.1 Optics and optical telescope Recap
* 13.2 Comparing telescopes
* 13.3 Parallax and parsecs
 |  | ***13. Astrophysics******Spec\_ref: 3.9.1.1 to 3.9.3.4*** |
|  W3 | 18-09-23 | * 13.4 Magnitude
* 13.5 Stars as black bodies
* 13.6 Stellar classification
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|  W4 | 25-09-23 | * A-level Paper 1 test
* FD and gap analysis
* 7.5 The mass Spring System as SHO
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|  W5 | 02-10-23 | * 13.7 Evolution of stars
* 13.8 Doppler shift and redshift
* 13.9 The Big bang theory
 |  |  |
|  W6 | 09-10-23 | * 13.10 Detection of binary stars, quasars and exoplanets
* Summary & review
* EOU test
 |  | Blended learning: Friday 13th  |
|  W7 | 16-10-23 | * FD and gap analysis
* [RP7: Investigation of Mass Spring System](file:///F%3A%5CA%5CPlan_SOW%5Clinks%5CRP7.docx) & Simple Pendulum System
* Buffer
 |  | **✓** ***CPAC assessed*** *CPAC 1a, CPAC 1b, CPAC 3a, CPAC 4a, CPAC 4b and CPAC 5b.* |
|  W8 | HT(23-10-23) |  |  |  |
|  W9 | HT(30-10-23) |  |  |  |
|  W10 | 06-11-23 | * 8.1 Gravitational field
* 8.2 Gravitational field Strength
* 8.3 Gravitational Potential
 |  | ***8. Gravitational and***  ***electric field*** |
|  W11 | 13-11-23 | * 8.4 Orbits
* 8.5 Electric Fields
* 8.6 Electric Potential
 |  |  |
|  W12 | 20-11-23 | * 8.7 Comparing Electric and Gravitational Fields
* Review & EOU Test
* FD and gap analysis
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|  W13 | 27-11-23 | * 9.1 Magnetic flux density
* 9.2 Forces on charge particles
* 9.3 Electromagnetic induction
 |  | ***9. Electromagnetism*** **Spec\_ref: 3.7.5.1 to 3.7.5.6** |
| W14 | 04-12-23 | * 9.4 Faraday’s and Len’s law
* RP10 Investigating Force on a Current-carrying Wire
* RP11 Investigating Flux Linkage with a Search Coil
 |  | Blended learning: Friday 15th*Will take place on W16***✓ and ✓** |
| W15 | 11-12-23 | * 9.5 AC
* 9.6 Transformers
* Review & EOU
 |  |  |
|  W16 | 18-12-23 | * FD and gap analysis
* 10.1 Capacitors
* 10.2 Energy stored by capacitors
* 10.3 Charging and Discharging
 | ***Maths******Edexcel 9MA0*****Section 1.6: Exponentials and logarithms** | ***10. Capacitors***Spec\_ref: 3.7.4.1 to 3.7.4.4***School breaks on Thursday 21st***  |
|  W17 | HT(25-12-23) |    |  | **Winter break:**BANK holiday Monday 25th and Tuesday 26th  |
| W18 | HT(01-01-24) |  |  | BANK holiday Monday 1st  |
|  |  |  |  | **Schools opens Tuesday 4th of Jan** |
| W19 | 08-01-24 | * 10.4 Time constant, time half and dielectric
* Buffer
* N/A
 |  | ***Finished Capacitors.*** *We are about 2 weeks behind due to changes in the time table of INSET days and extra-curricular activities* |
| W20 | 15-01-24 | * RP9 Investigating Capacitors Discharging
* Summary & review
* **EOU test**
 |  | To be carried out on W23**✓** |
| W21 | 22-01-24 | * **11.1 The Atomic Nucleus**
* 11.2 Nuclear Radius and Density
* 11.3 Properties of Nuclear Radiation
 |  | ***11. Nuclear physics***Spec\_ref: 3.8.1.1 to 3.8.1.8 |
| W22 | 29-01-24 | * 11.4 Background radiation and intensity
* 11.5 Exponential Law of Decay
* 11.6 Half-life and its Applications
 |  |  |
| W23 | 05-02-24 | * 11.7Nuclear Decay
* 11.8 Mass defect and the binding energy
* 11.9 Nuclear Fission and fusion
 |  | **INSET day Thursday 8th and Friday 9th** |
| W24 | 12-02-24 | * 11. 10 Nuclear Fission Reactor
* Buffer
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| W25 | HT(19-02-24) |  |  |  |
| W26 | 26-02-24 | * Buffer
* 11.11 Nuclear Physics Summary
* EOU test
* RP12 Investigating the inverse square law
 |  |  |
| W27 | 04-03-24 | * 12.1 Thermal energy transfer
* 12.2 The three gas laws
* 12.3 The ideal gas equation
 | ChemistryThe ideal gas equation: 3.1.2.3 | ***12. Thermal physics***Spec\_ref: 3.6.2.1 to 3.6.2.3**INSET day Friday 8th**  |
| W28 | 11-03-24 | * 12.4 Kinetic theory and the pressure of an ideal gas
* 12.5 Kinetic energy of gas molecule
* Summary and review
 | ChemistryRelative atomic mass and relative molecular mass:3.1.2.1The mole and the Avogadro constant: 3.1.2.2 |  |
| W29 | 18-03-24 | * RP8: Experimental Investigation of Boyle’s Law, and Investigation of Charles Law
* EOU test
* FD and gap analysis
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| W30 | 25-03-24 | * Buffer
* Buffer
* Buffer
 |  | BANK holiday Friday 29th  |
| W31 | HT(01-04-24) |  |  | **Easter break:**BANK holiday Monday 1st  |
| W32 | HT(08-04-24) | * Revision and catch-up: 3 days
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| W33 | 15-04-24 | * Paper 2 test
* FD and gap analysis
* Buffer
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| W34 | 22-04-24 | * Revision
* Revision
* Revision
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| W35 | 29-04-24 | * Revision
* Revision
* Revision
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| W36 | 06-05-24 | * Revision
* Revision
* Revision
 |  | BANK holiday Monday 6th  |
| W37 | 13-05-24 | C:\Users\b.ahmed\AppData\Local\Microsoft\Windows\INetCache\Content.Word\1.png  |
| W38 | 20-05-24 | * Revision
* Revision
* Revision
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| W39 | HT(27-05-23) |  |  | BANK holiday Monday 27th  |
| W40 | 03-06-23 |  |
| W41 | 10-06-23 | **Paper 1** |
| W42 | 17-06-23 |  |
| W43 | 24-06-23 |  |
| W44 | 01-07-23 | **Paper 2** |
| W45 | 08-07-23 |  |
| W46 | 15-07-23 | **Paper 3** |
| W47-W52 | **END of the academic Year** | **Summer break: *School breaks Friday 19th***  |