Summer Tasks July 2021 (YEAR 12 – 13)

SUBJECT: **PHYSICS**

Summer Task Title / Instructions:

Task 1 UpLearn Activities : Please complete the following tasks on UpLearn :-

Waves Topic
https://web.uplearn.co.uk/learn/physics-1/wave-motion
https://web.uplearn.co.uk/learn/physics-1/wave-properties
https://web.uplearn.co.uk/learn/physics-1/electromagnetic-waves
https://web.uplearn.co.uk/learn/physics-1/superposition
https://web.uplearn.co.uk/learn/physics-1/stationary-waves

Potential dividers
https://web.uplearn.co.uk/learn/physics-1/potential-dividers

Internal resistance
https://web.uplearn.co.uk/learn/physics-1/internal-resistance

Task 2 Practical Skills in written examinations: The work you have completed for the Practical Endorsement has been excellent preparation for your public exams in Year 13. It has been clear from the A2 public exams, practice and specimen papers that the practical activities completed form significant part of all three papers especially paper 3. Questions have focussed on the following key areas:-

- **Planning** –Can you describe practical activity including Identification of equipment – you will be expected to be able to draw the equipment if appropriate.
- **Variables** – Independent, dependent, control – identify.
- **Risk Assess** – identify both the generic and specific dangers in each experiment. Be able to propose ways to minimise the dangers and outline any action required in the event of an accident. You are recommended to use CLEAPPS, and other online resources, to research and reference your risk assessment.
- **Analysis** – Link between scientific understanding and anticipated results.
- **Processing** – Can you draw graph and appreciate what intercept and gradient represent (if appropriate), do you know what to do with the data in terms of calculations required?
- **Evaluation** – What are the limitations of your experiment? How do you minimise uncertainty and errors eg improve quality of data? How could you improve your experiment? Can you constructively criticise a proposed method/diagram in order to improve or make safe the procedure?

For every PAG listed below, please can you produce a document that addresses all areas above. Your classroom teacher will show you some exemplar material in advance of the summer holidays. The expectation is that you produce a minimum A4 document for each PAG.

1.1 Comparing methods of determining g
2.1 Determining the Young Modulus for a metal
2.2 Force/extension characteristics for arrangements of springs
3.3 Determining the internal resistance
5.1 Determining Wavelength using a diffraction grating.

Additional Guidance:

All of these practical activities are described fully or referenced in your course textbook.

All student sheets used in class will be uploaded to show my homework in advance of the summer holiday.

Please look on-line as bulk of practical activities have supporting videos. Good supporting resources are available below:-

- www.stem.org.uk
- www.alevelphysicsonline.com
- www.youtube.com/channel/UCDWYbhR94ZYFUXd4NJvAHYQ
- www.youtube.com/channel/UCIVaddFslWk1TFoKNrvh99Q
- www.iop.org
- https://isaacphysics.org/

Task 1 – Progress can be monitored remotely so no need to provide any written evidence.

Please submit task 2 to your teacher on the first lesson in September.