PHYSICS SUMMER ASSIGNMENT

Your summer assignment must be submitted in the **first lesson for this subject in September**. *The completion of this assignment is compulsory and we expect you to put every effort into completing it to the best of your ability. Failure to submit this assignment will jeopardise your place on this course.*

Physics research poster

Pick **one topic** to research and make a scientific research poster. Each poster should be A2 size and include:-

1. Some background information
2. References to show where you found your information
3. Key physics ideas

Posters should be eye catching, so add a captioned image to help explain which ever topic you decide on.

Scientific research posters: common sections

Every section you include should have a purpose and be familiar to the audience. The easiest way to decide which sections to include on your poster are to organize your information
into 3 categories - Introduction, Research, and Conclusion. The introduction sections set the stage and outline why you did the research you did. The research shows all the data you collected and how you collected it. Finally, the conclusion sections analyse and summarize your results. This is what the audience ultimately takes away from your poster, so pay special attention to these sections.

TOPICS

Some starting questions have been given under each topic to help guide your research.

Mechanics and Electricity

1. How does the tube work?
2. How were the tunnels built?
3. How do the trains run?

Mechanics

1. How do planes fly?
2. How was the first plane designed?
3. How has technology progressed?

Harmonic and resonance

1. How does an opera singer shatter a glass?
2. What is the physical phenomenon that is occurring?
3. How does it work? Why do glasses not shatter every time someone sings?

Waves

1. What are Gravitational waves?
2. How have they been detected?
3. What does LIGO do?
4. Why was this such an important discovery?

Particle Physics

1. What is the Large Hadron Collider (LHC) at CERN?
2. Where is it and why was it built there?
3. What have been the major discoveries?
4. What is the ultimate goal?

Assessment criteria

AO2: Apply knowledge and understanding of scientific ideas

Section	Guidance	Criteria	Marks available
Introduction	Some background information	Clearly explained showing understanding of why the ideas are important	0-5 marks
Research	References to show where you found your information	Valid and appropriate physics sources	0-3 marks
Conclusion	Key physics ideas	Knowledge and understanding	0-9 marks
Readability	Relevant images	Support the key physics ideas and show more than can be communicated by words.	0-3 marks