Year 13 Physics Teacher B
Learning Journey Map

Magnetic Fields – Maths Skills:
- ❑ Calculate areas of triangles, circumferences and areas of circles, surface areas and volumes of rectangular blocks, cylinders and spheres
- ❑ Use fractions, ratios and percentages

❑ **Alternating Current**

❑ **Operation of a Transformer**

Revision

Topics to revise with Teacher B:
- Waves
- Mechanics
- Materials
- Further Mechanics
- Fields

❑ **Electromagnetic Induction**

❑ **Magnetic Flux and Flux Linkage**

❑ **Moving Charges in a Magnetic Field**

❑ **RP 9: Investigation of the charge and discharge of capacitors**

PPEs

Magnetic Fields

❑ **Magnetic Flux Density**

❑ **RP 10: Investigate how the force on a wire varies with flux density, current, and length of wire**

Electric Fields – Maths Skills:
- ❑ Use fractions, ratios and percentages
- ❑ Substitute numerical values into algebraic expressions making use of appropriate units
- ❑ Find arithmetic means
- ❑ Change the subject of an equation, including non-linear equations
- ❑ Calculate areas of triangles, circumferences and areas of circles, surface areas and volumes of rectangular blocks, cylinders and spheres
- ❑ Understand the possible significance of the area between a curve and x-axis
- ❑ Use logarithmic plots to test exponential and power law variations

❑ **Capacitor Charging and Discharging**

❑ **Energy Stored by a Capacitor**

❑ **Parallel Plate Capacitor**

❑ **Capacitance**

Electric Fields – Working Scientifically:
- ❑ Apply scientific knowledge to practical concepts
- ❑ Present data in appropriate ways
- ❑ Evaluate results and draw conclusions with reference to measurement uncertainties and errors

Electric Fields

❑ **Coulomb's Law**

❑ **Electric Field Strength**

❑ **Electric Potential**

❑ **Orbits of Planets and Satellites**

AP1

❑ **Gravitational Potential**

❑ **Gravitational Field Strength**

❑ **Newton's Law**

YEAR 12

Gravitational Fields

Gravitational Fields – Maths Skills:
- ❑ Use ratios, fractions and percentages
- ❑ Estimate results
- ❑ Substitute numerical values into algebraic equations using appropriate units for physical quantities
- ❑ Understand the possible physical significance of the area between a curve and the x-axis
- ❑ Apply the concepts underlying calculus (but without requiring explicit use of derivatives or integrals) by solving equations involving rates of change
- ❑ Use logarithmic plots to test exponential and power law variations

Gravitational Fields – Working Scientifically:
- ❑ Plot and interpret graphs