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BUILT FOR BRILLIANCE

– Connect2Learn

At Connect2Learn, we believe brilliance isn't born – it's built. Our global learning platform is designed to empower every student with personalized, one-on-one education that nurtures skills, confidence, and curiosity. From core academics to creative and future-ready subjects, we connect passionate educators with young minds across the UK, Australia, and the US. With 5,000+ learners and a mission to reach 10,000 more, Connect2Learn is shaping a generation that's not just prepared for the future – but ready to lead it.



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PHYSICS

KNOWLEDGE KEEPERS

MODULE -1 WHY DO MATERIALS HAVE DIFFERENT PROPERTIES?

NUCLEAR PHYSICS

- Evidence of atomic structure
- Unstable nuclei
- Nuclear decay
- Ionising radiation
- Radioactive half-life
- Activity and half-life calculations (including complex ones)
- Uses of radiation



PHYSICS

KNOWLEDGE KEEPERS

MODULE -2 HOW DO FORCES MAKE THINGS HAPPEN?

FORCES MAKE THINGS CHANGE

- Newton's Third Law (with free body diagrams in 2D)
- Resultant forces and their effects
- Forces in two dimensions (including resolution of a force)
- Moments, levers and gears
- Balancing
- Force, mass and acceleration ($a = \Delta v/t$)
- Terminal velocity (including graphical representation)
- Stopping (and estimating stopping distances)
- Conservation of momentum
- Changing momentum
- Stopping safely



PHYSICS

KNOWLEDGE KEEPERS

MODULE -3 HOW DO WE SEE, HEAR AND COMMUNICATE?

ELECTROMAGNETIC WAVES

- Reflection of light (including specular and diffuse)
- Refraction through a rectangular block (including wave front diagrams)
- Refraction through a semicircular block
- Light and colour
- Convex lenses (including magnification)
- Scale diagrams for convex lenses (including magnification)
- Virtual images from convex and concave lenses (including magnification)
- The spectrum of electromagnetic radiation
- Absorbing infrared radiation practical
- Emitters of infrared & black body radiation
- Ionising electromagnetic radiation
- Non-ionising electromagnetic radiations



PHYSICS

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MODULE -4 HOW DO ELECTRICITY AND MAGNETISM WORK?

ELECTROMAGNETISM

- Plotting magnetic fields
- An electromagnet
- Applications of electromagnets
- The motor effect
- An electric motor
- The generator effect
- Electric generators
- Applications of motor and generator effects



MAINS ELECTRICITY

- Danger from electric shock
- Short circuits and earth wires
- Power of an appliance or electric circuit
- Current, Potential Difference and Resistance
- Electric Power-Understanding $P = V \times I$ and Its Graphs
- Resistors
- Calculating with electric charge: including complex calculations
- The National Grid
- Transformers
- Energy resources



PHYSICS

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MODULE -5 HOW DO ELECTRICITY AND MAGNETISM WORK?

GRAVITY IN SPACE

- The solar system
- Orbital motion of artificial satellites: relationship between radius and speed
- Birth of a star
- Stellar evolution
- Observing the universe
- The changing universe



PHYSICS

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MODULE 6: HEATING PROCESSES

KINETIC PARTICLE MODEL AND TEMPERATURE

- Kinetic particle model of matter.
- Concepts of: thermal energy, temperature, kinetic energy, heat, internal energy
- Use $TK = TC + 273$ to convert temperature measurements.



SPECIFIC HEAT CAPACITY

- Describe the concept of specific heat capacity.
- Interpret data from specific heat capacity experiments



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Unlock Their Potential with
Personalized 1:1 Learning in Coding,
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