PHYSICS LEARNING JOURNEY

SARAH BONNELL SCHOOL

Our aim is to provide the tools and resources for students to work scientifically and develop the following skills:

The 4 C's in STEM
collaboration
creativity
communication
critical thinking

BTEC Applied Science

A-Level Physics

International Baccalaureate (IB)

Enrichment Calendar

YEAR 7

Prior KS1/2 Knowledge

States of matter, Forces, Light, Magnets, Sounds, Electricity, Properties of Materials, Earth and Space

Energy (Energy stores, Fossil fuels)

Waves (How sound travels)

Forces (Types of forces)

YEAR 8

Forces (Acceleration, Mass weight and gravity)

Waves (Ultrasound and infrasound)

Electricity (Circuits)

YEAR 9

Electricity (Magnetism)

Energy stores and systems

Changes in energy (GPE, KE and EPE)

Specific Heat Capacity

YEAR 10

Static Electricity

DC and AC

The National Grid

Resistors

Series and Parallel Circuits

Current, resistance and potential difference

Renewable and Non-renewable energy

Efficiency

Energy transfers

Power

YEAR 11

Properties of Transverse and Longitudinal Waves

Properties of EM Waves

Lenses

Infrared Radiation

Temperature of the Earth

Perfect Black Bodies

Electromagnetism

Magnetic Poles and Fields

Sound Waves

Reflection of Waves

Fleming's Left Hand Rule

Magnetic Flux Density

Loudspeakers

Electric Motors

Induced Potential

Red shift

Microphones & Transformers

Orbits and Satellites

Solar system

Life Cycles of a Star

Newton's First, Second and Third Law

Momentum

Acceleration

Velocity and Time

Forces and Braking

Speed, Distance and Time

Changes in Momentum

Pressure in liquids and gasses

Moments, Levers and Gears

Pressure in Gases

Background radiation

Particle Motion in Gases

Changes of State

Specific Heat Capacity and Latent Heat

Radioactive decay and nuclear equations

Hazards and Uses of Radiation

Contamination and Irradiation

Contact and Non-Contact Forces

Uses of Radiation

Nuclear Fission and Fusion

Density

Stephen Hawking

Mae c Jemison

Edward Bouchet

Neil DeGrasse Tyson

Marie Curie

Annie Easley

Weekly Enrichment Sessions

Science fun club

Summer Term

- Crest Awards
- British Science

Spring Term

- STEAM Week
- STEAM Day

Autumn Term

- Black History Month