	Year 8 Physics					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
BIG Q Content *(max 5)* Please log into Seneca to support your child to understand this learning	***How do forces affect the motion of objects?*** Define speed. Construct a distance-time graph. Use a distance-time graphs to describe journeys. Describe how the gradient of a ramp affects speed. Describe the term relative motion.	***What is gravity?*** Define a force. Describe the force of gravity. Explain the term gravitational field. Describe the difference between mass and weight. Explain how mass affects gravitational force.	***What is an electric current?*** Describe an electric circuit. Explain why current flows in an electric circuit. Define resistance. Describe a series and parallel circuit. Compare a series and parallel circuit.	***What is static charge?*** Define a static charge. Define an electrostatic field. Describe how a static charge is generated. Describe how static charges interact with each other. Explain which factors will affect the size of an electrostatic field.	***What is magnetism?*** Define a magnetic field. Recall which materials are magnetic. Describe the magnetic field around a bar magnet. Explain how the strength of the field around a bar magnet changes with distance. Describe how magnets interact with each other.	***What is electromagnetism?*** Describe why a permanent magnet is different to an electromagnet. Explain how an electromagnet is made. Describe how to change the strength of an electromagnet. Describe the uses of electromagnets e.g. in motors. Compare the advantages of electromagnets and permanent magnets.
Vocabulary *(max 10)* Please log into MAPPER to support your child to learn these words	Speed Distance Time Gradient Metres per second Drag Relative Motion Stationary Streamlined Acceleration	Mass Weight Gravitational Force Gravitational Field Newtons Vector Scalar Gravitational Field Strength	Circuit Parallel Series Potential Difference Current Resistance Ammeter Voltmeter Cell Battery	Charge Positive Negative Attract Repel Electrostatic Field Friction Non-contact Force	Magnet Magnetic Field North Pole South Pole Field Line Compass Iron Nickle Cobalt Steel	Electromagnet Core Solenoid Coils Field Strength MRI (Magnetic Resonance Imaging) Circuit Breaker
Catholic Link	Life and Dignity of the Human Person: Safe transport and technology improve people's lives.	Call to Family, Community and Participation: Satellites affected by gravity help communication and navigation	Rights and Responsibilities: People have the right to electricity and the responsibility to use it safely.	Solidarity: Countries work together to improve electrical and renewable technologies.	Option for the Poor and Vulnerable: Generators using magnets can provide electricity in remote areas.	Care for God's Creation: Compasses help people travel and explore responsibly.
Careers Link	Forces (speed and motion)- Gymnast, pilot, builder and engineer	Forces (gravity)- Architect, draughtsperson, astronaut	Electricity (series and parallel circuits)- Electrician, electric line worker, electrical engineer	Electricity (static)- electrical project manager, robotics, power plant operator	Electromagnets (Forces and fields) - Electrical vehicle mechanic, scrapyard operator/ manager	Electromagnets (Compasses and practical)- MRI Engineer, electromagnets engineer, physics teacher

Ways to enrich the Y8 Physics curriculum at home: https://www.iop.org/explore-physics/atme

- Drop heavy and light objects at the same time – use stones, leaves and crumpled paper. Watch how air resistance changes how the object falls.
- As a family try standing sideways against a wall. Try lifting your outside leg without falling over. How does this affect your balance?
- Use a map app on your phone such as google maps – which way does your house face? North? South?