	Year 9 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	***What is the relationship between energy and work?*** Define work done. Explain how simple machines make work easier. Calculate the amount of work done. Describe the function of a lever. Explain why pivot points reduce the force required to complete work.	***What is heat, temperature and thermal energy?*** Describe the difference between heat and temperature. Explain how heat can travel by conduction. Explain how heat can travel by convection. Explain how heat can travel by radiation. Explain how we can prevent heat from travelling.	***What is sound?*** Describe how is sound produced. Explain how a sound wave is converted into an electrical signal. Explain how an electrical signal is transferred into sound. Describe how sound is reflected. Describe the interaction of two sound waves.	***What is light?*** Describe the features of a light wave. Explain the difference between visible light and ultraviolet light. Describe the uses of ultraviolet light. Define transverse and longitudinal waves. Compare transverse and longitudinal waves.	***How do forces affect object?*** Define the term "equilibrium". Describe three effects a force can have on an object (change its shape, change is speed, change its direction). Identify the forces acting on an object. Calculate the resultant force acting on an object. Describe how forces effect elastic objects.	***How does pressure behave in solids, liquids, and gases?*** Define pressure. Compare how solids, liquids and gases exert pressure. Calculate the pressure exerted by a solid. Describe how atmospheric pressure will change with height. Explain measures that can be taken to reduce the pressure exerted by solid objects.
Vocabulary *(max 10)* Please log into MAPPER to support your child to learn these words	Energy Work Done Joules Lever Pivot Rotate Force Newtons Distance	Thermal Energy Temperature Heat Degrees Celsius Conduction Convection Radiation Transfer	Wave Sound Echo Vibration Oscillation Diaphragm Solenoid Current Ultrasound	Light Ultraviolet Electromagnetic Wave Transverse Wave Longitudinal Wave Superposition Peak Trough Compression Rarefaction Wavelength	Equilibrium Elastic Hooke's Law Upthrust Air Resistance Water Resistance Drag Friction	Pressure Atmospheric Pressure Pascals Newtons per Metre Squared Surface Area Weight Fluid
Catholic Link	Life and Dignity of the Human Person: Good heat transfer systems help keep people safe and healthy.	Call to Family, Community and Participation: Communities depend on cooling systems every day.	Option for the Poor and Vulnerable: Solar power and UV technology can support vulnerable communities.	Call to Family, Community and Participation: Assemblies, concerts, and religious services use sound systems.	Rights and Responsibilities: Reducing drag lowers fuel use and pollution.	Rights and Responsibilities: People have the right to clean water and safe systems, but also the responsibility to use resources wisely.
Careers Link	Energy thermal conduction- Renewable energy engineer, climate scientist, oil rig engineer	Energy cooling- stockbroker, salesperson, architectural engineer	Waves (Sound and light- Audiologists, singers, music teacher	Waves (UV and sound systems)- Theatre technician, radiologists	Forces (Drag and springs)- Architects	Forces (Pressure) - Gymnasts, dancers, builders and engineers

Ways to enrich the Y9 Physics curriculum at home: https://www.iop.org/explore-physics/at-home

- Wrap ice cubes in different wrappers e.g. paper, plastic, cardboard. Which material resists heat transfer the longest? Use your phone to time how long you can prevent the ice cube from melting.
- Take a tour of your home. What insulation can you see? What insulation can't you see? Can you locate any draughty spots around windows and doors? Find out if there are any DIY fixes which would help improve the insulation in your home.
- Fill a glass completely with water and place stiff card over the top then quickly turn upside down. The air pressure underneath pushing up is greater than the weight of the water pushing down, keeping the card in place!