Progression Model: Physics Year 9

Module Title: Particle model of matter	**Module Title: Energy changes in a system.**	**Module Title: Efficiency, Dissipation and Energy Resources.**
Learning Intent for this module: Students will learn about how the particle model of matter is widely used to predict the behaviour of solids, liquids and gases and this has many applications to everyday life. • Changes of state and the particle model • Internal energy and energy transfers • Particle motion in gases	**Learning Intent for this module:** Students will learn about the concept of energy stores and how they are transferred with in a system. They will look at the ways energy is stored before and after such changes and study the principal of the conservation of energy. • Energy stores and systems • Changes in energy • Energy changes in systems	**Learning Intent for this Module:** Students will learn about how we are working hard to identify ways to reduce our energy usage due to the limited supply of fossil fuels and global warming. • Transfer of thermal energy • Efficiency • National and global energy resources
Key Content to be learned: Students will learn about the structure of matter in terms of particles and the bonds between them, this builds on Y7 work about the states of matter. They will expand on their knowledge of density to understand why different materials have different densities. By applying their knowledge of particle theory they will be able to investigate and predict the energy need to increase the temperature of a substance and to change its state.	**Key content to be learned:** Students will learn about how energy is stored and transferred from one store to another within a system. They will then expand their knowledge about these energy stores by calculating their values and exploring the concept of conservation of energy. Applying their knowledge of systems students will solve problems involving these energies.	**Key Content to be learned:** Students will learn about thermal energy, how it is transferred and why it's important to reduce the amount of wasted energy. They will expand their knowledge of energy transfers by looking at how we transfer energy electrically from energy resources to our homes and workplaces. By applying this knowledge students will identify ways to limit the uses of fossil fuels to reduce the effect of global warming.
Prior Knowledge Students should know that matter is made up of particles, classify materials as solid, liquids and gases and begin to use the particle model to explain phenomena.	**Prior Knowledge** Student should be able to describe energy as types and transformations in familiar situations and recognise that although total energy in a system stays the same some is wasted.	**Prior Knowledge** Describe energy flow as the result of a temperature difference, describe good conductors and insulators, and start to explain conduction and convection.

Key tasks for this module: Density RP Change of state	**Key tasks for this module:** Energy stores and transfers Changes in energy	**Key tasks for this module:** Thermal conductivity National and Global Resources.