

Barnsley Academy – Year 10 Science Energy Curriculum
Scheme of Work – 2023-24

Term 1 Week 1				
	1	2	3	4
Lesson Focus	Energy Stores	Gravitational Potential Energy	Kinetic Energy	Kinetic energy and GPE (Higher)
Prerequisite Knowledge		Energy Stores Equation model	Energy Stores Equation model	Energy Stores Equation model
Core Knowledge	<ul style="list-style-type: none"> Name the main energy stores and give examples State what is meant by an energy pathway and name the 4 types Use energy stores and energy pathways to describe an energy transfer State what is meant by the conservation of energy and show this in energy transfers 	<ol style="list-style-type: none"> State and describe how 3 factors affect an objects gravitational potential energy Calculate gravitational potential energy Use the gravitational potential energy equation to calculate mass, gravitational field strength and height 	<ul style="list-style-type: none"> Calculate the energy stored in a moving object Use calculations to show how doubling mass or velocity affects the kinetic energy Rearrange the equation to calculate velocity or mass 	<ul style="list-style-type: none"> Use values for GPE to calculate the theoretical velocity of an object Explain why the maximum theoretical velocity is never actually reached.
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	Expert model – Describe an energy change	<ul style="list-style-type: none"> Slide 4 – Teacher describes GPE Use of the equation model to carry out the calculations. 	<ul style="list-style-type: none"> Slide 4 – 5 – Teacher describes kinetic energy and gives the equation Use of the equation model to carry out the calculations. 	<ul style="list-style-type: none"> Slide 4 – Teacher explains the link between GPE and Kinetic energy Use of the equation model to carry out the calculations.
Independent Practice	Name energy stores and energy pathways Describe energy transfers	<ol style="list-style-type: none"> Factors that affect GPE GPE calculations 	<ol style="list-style-type: none"> Calculating kinetic energy Rearranging the kinetic energy equation 	<ul style="list-style-type: none"> Exam questions linking GPE and Kinetic energy

Assessment (Informal/Formal)	Independent practice tasks – exam question incorporated. Learning checks on WB Students to self- assess all tasks. Teacher to circulate and check for misconceptions.	Independent practice tasks – exam question incorporated. Learning checks on WB Students to self- assess all tasks. Teacher to circulate and check for misconceptions.	Independent practice tasks – exam question incorporated. Learning checks on WB Students to self- assess all tasks. Teacher to circulate and check for misconceptions.	Independent practice tasks – exam question incorporated. Learning checks on WB Students to self- assess all tasks. Teacher to circulate and check for misconceptions.
Resources				
Specific SEN(D)/EAL support	Expert Model – energy transfers Use of visualiser to support independent task	Equation model Use of the visualiser to show calculations	Equation model Use of the visualiser to show calculations	Equation model Use of the visualiser to show calculations