Energy Year 7 Summative Comment		***Curriculum Checkpoints: What do students know and what can they do?***				***YT Clips***
		Developing	**Securing**	**Mastering**	**Excelling**	
	Substantive Knowledge	I need to..... state the definition of the conservation of energy .....state how energy is transferred ..... state how energy and temperature are measured .....describe how energy is transferred through solids, liquids, and in air .....state what is meant by the term equilibrium .....state the definitions of energy and power .....state that power, fuel used and cost are linked	I need to..... state the definition of the conservation of energy .....state how energy is transferred ..... state how energy and temperature are measured .....describe how energy is transferred through solids, liquids, and in air .....state what is meant by the term equilibrium .....state the definitions of energy and power .....state that power, fuel used and cost are linked	I can.....describe energy before and after a change .....explain what brings about energy transfers ....state the difference between energy and temperature .....describe what happens when you heat up solids, liquids and gases .....explain what is meant by equilibrium ..... explain the difference between energy and power .....describe the link between power, fuel use and cost of using domestic appliances	I can.....account for energy dissipation during transfers .....compare energy transfers to energy conservation .....explain an example to show that energy and temperature are different .....explain, in terms of particles, how energy is transferred .....expertly explain what is meant by equilibrium giving examples I can .....compare the power consumption of different activities	https://www.youtube.com/watch?v=IHMgxNaO6dA
	Disciplinary Knowledge	I need to.....identify energy values for food and fuels .....describe energy requirements in different situations .....interpret data on food intake for some activities.....present simple observations of energy transfers .....Identify a source of error. .....predict which equipment is more powerful when given a selection of appliances	I can.....identify energy values for food and fuels .....describe energy requirements in different situations .....interpret data on food intake for some activities.....present simple observations of energy transfers .....Identify a source of error. .....predict which equipment is more powerful when given a selection of appliances	I can.....compare the energy values of food and fuels .....compare the energy in food and fuels with the energy needed for different activities .....explain data on food intake and energy requirements for a range of activities .....present observations of energy transfers in a table .....describe how to reduce error in experimental apparatus .....predict the power requirements of different equipment and how much it costs to use	I can.....calculate energy requirements for various situations, considering diet and exercise .....suggest different foods needed in unusual situations, for example training for the Olympics .....explain why an athlete needs more energy from food using data provided .....present detailed observations of energy transfers in a table, including useful and non-useful transfers .....describe sources of error as systematic or random, and suggest ways to minimise these. .....calculate and compare energy costs in different scenarios .....predict and explain the effect on energy bills of changing the power of equipment	https://www.youtube.com/watch?v=nbXXFtF8Lzs
Forces and motion Year Summative Comment		***Curriculum Checkpoints: What do students know and what can they do?***				***YT Clips***
		Developing	**Securing**	**Mastering**	**Excelling**	
	Substantive Knowledge	I need to..... Identify some forces acting on objects in everyday situations. .....Identify an interaction pair. .....state the forces are measured in newton (N) using a newton meter. I need to .....state an example of a force deforming an object. .....recognise a support force. .....use Hooke's Law to identify proportional stretching. .....Identify examples of drag forces and friction. .....describe how drag forces and friction arise. .....Identify gravity as a force that acts at a distance. .....Identify familiar situations of balanced and unbalanced forces. .....define equilibrium. .....identify when the speed or direction of motion of an object change.	I can..... Identify some forces acting on objects in everyday situations. .....Identify an interaction pair. .....state that forces are measured in newton (N) using a newton meter. .....state that forces are measured in newton (N) using a newton meter. .....state an example of a force deforming an object. .....recognise a support force. .....use Hooke's Law to identify proportional stretching. .....Identify examples of drag forces and friction. .....describe how drag forces and friction arise. .....Identify gravity as a force that acts at a distance. .....state that gravity changes with distance. .....identify familiar situations of balanced and unbalanced forces and partially describe the difference .....define equilibrium. .....identify when the speed or direction of motion of an object change.	I can.....explain what forces do. .....describe what is meant by an interaction pair. ....identify the unit of force and describe in detail how this is measured . ..... confiednty describe how forces deform objects. ..... confidently explain how solid surfaces provide a support force, using simple terminology .....use Hook's Law to predict the extension of a spring. .....confidently describe the effect of drag forces and friction. .....explain why drag forces and friction arise. .....describe the effect of a field. ..... confidently describe the effect of gravitational forces on Earth and in space. ..... describe the difference between balanced and unbalanced forces. ..... confidently describe situations that are in equilibrium. ..... confidently explain why the speed or direction of motion of objects can change.	I can ..... explain differences between contact and non-contact forces. ....explain which pairs of forces are acting on an object. .....identify the unit of force and explain in detail how this is measured. .....expertly explain how forces deform objects in a arrange of situations. ..... expertly explain how solid surfaces provide a support force, using scientific terminology and bonding. .....apply Hook's Law to make quantitative predictions with unfamiliar materials. ..... expertly explain the effect of drag forces and friction in terms of forces. ..... confidently explain why drag forces and friction slow things down in terms of forces. .....apply the effects of forces at a distance to different fields. ..... expertly explain how the effect of gravity changes moving away from the Earth. .....explain the difference between balanced and unbalance forces. ..... expertly describe a range of situations that are in equilibrium. ..... expertly explain why the speed or direction of motion of an object can change, using force arrows.	https://www.youtube.com/watch?v=9kMNtZvYmqQhttps://www.youtube.com/watch?v=hHOHwuGPoaI
	Disciplinary Knowledge	*I need to* .....use a newton meter to make predictions about the size of forces. .....use a newton meter to make predictions about the size of forces. .....draw simple force diagrams to show the forces acting on an objects. .....present data in a graph and identify a pattern. .....carry out an experiment to test a prediction of friction caused by different surfaces. .....with help, draw a table and present results. .....present observations in a table with help.	I can .....use a newton meter to make predictions about the size of forces. .....use a newton meter to make predictions about the size of forces. .....draw simple force diagrams to show the forces acting on an objects and partially explain these. .....present data in a graph and identify a pattern. .....carry out an experiment to test a prediction of friction caused by different surfaces. .....with help, draw a table and present results. .....present observations in a table with help	I can .....make predictions about forces in familiar situations. ..... confidently make predictions about forces in familiar situations. ..... confidently explain the importance of the direction and the size of the arrow when drawing force diagrams ..... confidently present data on a graph and identify a quantitative relationship in the pattern. ..... confidently plan and carry out an experiment to investigate friction, selecting suitable equipment. ..... Independently present results in a simple table with labels and units. .....present observations in a table including force arrow drawings.	I can .....make detailed predictions about pairs of forces acting in unfamiliar situations. ..... expertly make accurate predictions about pairs of forces acting in unfamiliar situations. ..... expertly explain the importance of the direction and the size of the arrow when drwaing complex force diagrams. ..... expertly present data in a graph and recognise quantitative patterns and errors. .....expertly plan and carry out an experiment, stating the independent, dependent and at least 2 control variables. ..... confidently present results in a suitable table with labels and units, ensuring they are reliable. .....predict and present changes in observations for unfamiliar situations.	https://www.youtube.com/watch?v=QQCJeAqBumE