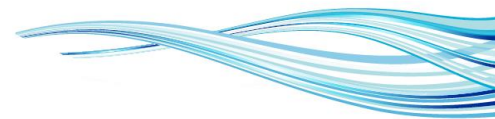
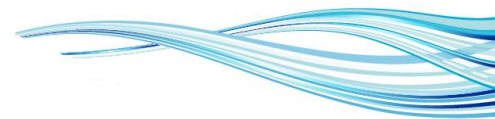


Year 8	Science Grade Descriptors Building on Year 7
Progress Grade	Data Drop 1 - Autumn Term
Working Towards	A student can: <ul style="list-style-type: none">• State what elements, compounds and mixtures are and give examples.• State the parts of the gas exchange system and a model of this.• Name nutrients found in food and sources of these, in a healthy diet.• State one effect of a drug, alcohol and smoking on health or behaviour.
Expected	A student can: <ul style="list-style-type: none">• Represent elements, mixtures, and compounds using particle diagrams and physical models.• Describe the role of different nutrients in the body and in a healthy diet.• Describe how the parts of the gas exchange system are adapted to their function.• Relate how drugs, alcohol and smoking can affect health and behaviour.
Above	A student can: <ul style="list-style-type: none">• Use particle diagrams to help to explain why a compound has different properties to the elements whose atoms it contains.• Explain how the adaptations of the parts of the gas exchange system help them perform their function.• Explain the importance of a healthy diet and outline how to test for different nutrients contained in food.• Describe the effects of alcohol, smoking and drugs on health and behaviour.
Exceptional	A student can: <ul style="list-style-type: none">• Deduce a pattern in the formula of similar compounds and use it to suggest formulae and properties for unfamiliar ones.• Link different nutrients to their functions and how to identify these in samples of food.• Explain how recreational drugs, smoking and alcohol can have a negative effect on people's lifestyles.• Use a model to represent and explain the adaptations of the breathing and gas exchange systems.



Year 8	Science Grade Descriptors Building on Year 7
Progress Grade	Data Drop 2 - Spring Term
Working Towards	A student can: <ul style="list-style-type: none">• State that machines change the size of forces or distances.• State how energy and temperature are measured.• Describe simply what happens in conduction, radiation and convection.• State what global warming and climate change and its effects.• State what a sound wave transfers and what it does not transfer.
Expected	A student can: <ul style="list-style-type: none">• Calculate work done and apply the conservation of energy to simple machines.• Describe how energy is transferred through solids, liquids and in air and how to measure this.• Describe different ways to insulate in terms of conduction, convection and radiation.• Design a model to explain the greenhouse effect and climate change.• Describe how sound transfers energy and how this is linked to generating electricity.
Above	A student can: <ul style="list-style-type: none">• Compare the work done in different scenarios and by different machines.• Give an example to show that energy and temperature are different.• Compare the different ways that energy is transferred in radiation, convection and conduction.• Use equations to explain processes that exchange carbon dioxide into and out of the atmosphere.• Compare the relative effects of human-produced and natural global warming and its effect on climate change.• Describe the electromagnetic spectrum.
Exceptional	A student can: <ul style="list-style-type: none">• Explain how conservation of energy applies in one example.• Compare the different ways that energy is transferred in radiation, convection and conduction.• Give arguments for and against the claim that human activity is causing global warming and climate change.• Compare the relative effects of human-produced and natural global warming.• Describe all the waves of the electromagnetic spectrum in terms of increasing wavelength or increasing frequency.



Year 8	Science Grade Descriptors Building on Year 7
Progress Grade	Data Drop 3 - Summer Term
Working Towards	A student can: <ul style="list-style-type: none">• Give examples of natural selection, biodiversity, evolution and extinction.• State what is meant by DNA, genes and chromosomes.• State the requirements for aerobic and aerobic respiration.• Name some common properties of acids and alkalis and the type of substances made when an acid and alkali react.• Label hazard symbols and describe the hazards relating to them.
Expected	A student can: <ul style="list-style-type: none">• Describe the processes of natural selection, biodiversity, evolution and extinction.• Describe the relationship between DNA, genes and chromosomes.• Describe the differences between aerobic and anaerobic respiration.• Describe how bread, beer and wine are made.• Compare the properties of different types of acids and alkalis.• Describe the steps in making a salt in a neutralisation reaction.
Above	A student can: <ul style="list-style-type: none">• Create a simple evolutionary sequence to explain natural selection, evolution and extinction.• Explain the role of DNA and how a change in DNA may affect organisms.• Explain the differences between the two types of respiration.• Explain how the process of fermentation works in relation to the word equation.• Explain the difference between acid strength and acid concentration.• Explain how neutralisation reactions are used in a range of situations.
Exceptional	A student can: <ul style="list-style-type: none">• Interpret evidence provided in scientific texts to explain natural selection, biodiversity, evolution and extinction.• Explain the uses of the products from anaerobic respiration.• Plan an investigation to measure the effect of exercise on breathing rates.• Compare the use of a variety of indicators and a pH probe to measure acidity and alkalinity.• Deduce the hazards of different acids using data about their concentration and pH.