

Year 9 Science Prior Attainment Related Expectations

Topic	Time of Year	Lower Attainer Expectations	Middle Attainer Expectations	Higher Attainer Expectations
Biology	Mid-Year	<ul style="list-style-type: none"> State some factors which lead to variation in species State how some organisms are adapted to their environment State some differences between animal and plant cells Identify differences between prokaryotic and eukaryotic cells State the names of the three transport mechanisms in cells 	<ul style="list-style-type: none"> Describe different causes of variation between species Describe why species have particular features and why this helps them survive. Identify structures in plant and animal cells Compare structure of eukaryotic and prokaryotic cells. Describe the transport mechanisms in cells 	<ul style="list-style-type: none"> Describe the structure of DNA and explain how this causes variation in species Explain how species have changed over time Compare and contrast plant, animal and prokaryotic cells Describe the transport mechanisms in cells and explain the factors which can affect the rate of transport.
Biology	End of Year	<ul style="list-style-type: none"> Identify organs of the digestive system with their function Carry out a range of practical experiments to discover enzyme activity Describe the links between circulatory and respiratory systems Identify blood vessels, chambers of the heart and describe the consequences of blockages 	<ul style="list-style-type: none"> Identify organs of the digestive system and describe their function Carry out a range of practical experiments to investigate enzyme activity Describe the links between circulatory and respiratory systems Describe the structure of blood vessels, the chambers of the heart and consequences of blockages 	<ul style="list-style-type: none"> Describe in detail and explain structure and function of organs of the digestive system Make scientific predictions, plan, and carry out a range of practical experiments to investigate enzyme activity Explain in detail the links between circulatory and respiratory systems. Explain the adaptations of blood vessels and relate to their function

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Chemistry	Mid-Year	<ul style="list-style-type: none"> Describe the basic structure of an atom and describe using diagrams, the electron configuration for some elements Describe the difference between elements, compounds, and mixtures Write word equations for the reaction of group one metals and water Describe the trend in reactivity down group one and group seven 	<ul style="list-style-type: none"> Describe the basic structure of an atom and describe using diagrams, the electron configuration for the first 20 elements Describe the difference between elements, compounds, and mixtures Write word equations for the reaction of group one metals and water Describe and explain the trend in reactivity down group one and group seven. 	<ul style="list-style-type: none"> Explain how atoms become ions and draw dot-and-cross diagrams to illustrate the loss/gain of electrons. Describe how ionic, covalent, and metallic bonds form Explain the properties of ionic, giant-covalent, small-molecules and metallic substances Describe the relationship between the strength of intermolecular forces and physical properties of materials
Chemistry	End of Year	<ul style="list-style-type: none"> Describe how atoms become ions and draw dot-and-cross diagrams to illustrate the loss/gain of electrons Describe how ionic, covalent, and metallic bonds form State properties of ionic, giant-covalent, small-molecules and metallic substances Describe the relationship between intermolecular forces and physical properties of materials. 	<ul style="list-style-type: none"> Describe how atoms become ions and draw dot-and-cross diagrams to illustrate the loss/gain of electrons Describe how ionic, covalent, and metallic bonds form State properties of ionic, giant-covalent, small-molecules and metallic substances Describe the relationship between intermolecular forces and physical properties of materials 	<ul style="list-style-type: none"> Explain how atoms become ions and draw dot-and-cross diagrams to illustrate the loss/gain of electrons Describe how ionic, covalent, and metallic bonds form Explain the properties of ionic, giant-covalent, small-molecules and metallic substances Describe the relationship between the strength of intermolecular forces and physical properties of materials.

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Physics	Mid-Year	<ul style="list-style-type: none"> Identify light as a transverse wave State what happens to light in reflection and refraction State the colours which make up visible light Name the energy stores in a system State how stores of energy change in everyday situations Perform simple calculations on using energy formulae. 	<ul style="list-style-type: none"> Label features of a transverse wave Describe what happens to light in reflection and refraction Describe how we see different colours of light. Identify the energy stores in a system Determine how stores of energy change in everyday situations. Perform calculations on using energy formulae – rearranging when necessary. 	<ul style="list-style-type: none"> Identify and give examples of transverse and longitudinal waves Explain what happens to light in reflection and refraction Explain why we see coloured objects Describe the energy stores in each system Explain how stores of energy change in a range of everyday situations. Perform multistage calculations on using energy formulae.
Physics	End of Year	<ul style="list-style-type: none"> Describe changes of state Follow a given plan and carry out an experiment to determine density Identify longitudinal and transverse waves Measure amplitude, wavelength, and speed of a wave List the properties and uses of some electromagnetic waves Construct basic electrical circuits and describe the concepts of current, potential difference and resistance. 	<ul style="list-style-type: none"> Identify changes of state Follow a given plan and carry out an experiment to determine density Describe the features of longitudinal and transverse waves Measure amplitude, wavelength, frequency, and speed of a wave List the properties and uses of some electromagnetic waves Construct basic electrical circuits and use the concepts of current, potential difference and resistance 	<ul style="list-style-type: none"> Explain changes of state in terms of the motion of particles Plan, carry out and evaluate an experiment to determine density Measure and perform calculations on amplitude, wavelength, frequency, and speed of a wave Evaluate the properties of some electromagnetic waves for uses Construct basic electrical circuits and compare the concepts of current, potential difference and resistance.