

### Year 8 Science progress grid

Year 8 science	Greater than expected progress. Students will be able to know / understand / do:		Expected progress Students will be able to know / understand / do:		Less than expected progress Students will be able to know / understand / do:	
	Mid-year	End of year	Mid-year	End of year	Mid-year	End of Year
<b>Extended learner</b>	<p>Describe the structure of the universe in detail, in order of size and of distance away from the earth. Assess the strength of evidence, deciding whether it is sufficient to support a conclusion.</p> <p>Explain models, as in the particle model of matter or the wave models of light and of sound evaluating limitations of models used</p> <p>Describe the symptoms, mode of transmission of communicable. Explain how resistance to antibiotics occurs. Explain how antibodies are antigen specific and how immunity occurs. Explain and evaluate drug development. Explain the importance of scientific research and discoveries.</p> <p>Explain techniques in detail used to identify pure substances or mixtures. Linking in detail these techniques to uses in the workplace.</p> <p>Explain what makes a healthy food option, explaining the role of each nutrient in the body</p> <p>Explain how each food type contributes to a healthy balanced diet by interpreting nutritional information to make health comparisons between foods. Use a range of techniques to Carry out a range of food tests safely</p>	<p>Explain in detail differences, between pressures or temperatures or electrical potentials by analysing graphical data</p> <p>Explain how life on Earth is dependent on photosynthesis in which green plants and algae trap light from the Sun to fix carbon dioxide and combine it with hydrogen from water to make organic compounds and oxygen. Compare photosynthesis with other scientific concepts such as respiration</p> <p>Explain the characteristics of a living organism are influenced by its genome and its interaction with the environment. Analysing data to spot patterns and draws conclusions.</p> <p>Explain that evolution occurs by a process of natural selection and accounts both for biodiversity and how organisms are all related to varying degrees. Evaluating different scientific theories</p> <p>Explain how chemical reactions take place in only three different ways</p> <p>Explain the concept of cause and effect in explaining such links as those between changes in atomic nuclei and radioactive emissions by Using and manipulating physical laws and models which are expressed in mathematical form.</p>	<p>Describe the structure of the universe in detail, in order of size and of distance away from the earth. Describe evidence for the 'Big Bang'</p> <p>Explain models, as in the particle model of matter or the wave models of light and of sound</p> <p>Describe the symptoms, mode of transmission of communicable diseases. Explain how resistance to antibiotics occurs. Explain how antibodies are antigen specific and how immunity occurs. Describe Flemings observations and conclusions</p> <p>Explain techniques in detail used to identify pure substances or mixtures. Linking these techniques to uses in the workplace.</p> <p>Explain what makes a healthy food option, explaining the role of each nutrient in the body</p> <p>Use a range of techniques to Carry out a range of food tests safely</p>	<p>Explain how life on Earth is dependent on photosynthesis in which green plants and algae trap light from the Sun to fix carbon dioxide and combine it with hydrogen from water to make organic compounds and oxygen</p> <p>Explain that evolution occurs by a process of natural selection and accounts both for biodiversity and how organisms are all related to varying degrees. Explain the barriers to chemical reactions so reactions occur at different rates</p> <p>Describe differences, for example between pressures or temperatures or electrical potentials</p> <p>Explain that chemical reactions take place in only three different ways, describe how energy is conserved in chemical reactions</p>	<p>Describe the structure of the universe in detail, in order of size and of distance away from the earth.</p> <p>Describe models, as in the particle model of matter or the wave models of light and of sound</p> <p>Describe the symptoms, mode of transmission of some communicable diseases. Describe how resistance to antibiotics occurs. Describe immune response and drug development. Describe Flemings observations</p> <p>Explain techniques used to identify pure substances or mixtures.</p> <p>Explain what makes a healthy food option, explaining the role of each nutrient in the body</p>	<p>Describe how life on Earth is dependent on photosynthesis in which green plants and algae trap light from the Sun to fix carbon dioxide and combine it with hydrogen from water to make organic compounds and oxygen</p> <p>Explain that evolution occurs by natural selection</p> <p>Describe that chemical reactions take place in only three different ways, describe how energy is conserved in chemical reactions</p> <p>Describe some differences, for example between pressures or temperatures or electrical potentials</p>
<b>Secure learner</b>	<p>Describe the structure of the universe in detail, in order of size and of distance away from the earth. Describe evidence, deciding whether it is sufficient to support a conclusion.</p> <p>Describe models, as in the particle model of matter or the wave models of light and of sound evaluating limitations of models used</p> <p>Describe the symptoms, mode of transmission of communicable. Describe how resistance to antibiotics occurs. Describe how antibodies are antigen specific and how immunity occurs.</p> <p>Describe techniques in detail used to identify pure substances or mixtures. Linking in detail these techniques to uses in the workplace.</p> <p>Describe what makes a healthy food option, explaining the role of each nutrient in the body</p> <p>Describe how each food type contributes to a healthy balanced diet by interpreting nutritional information to make health comparisons between foods. Describe and use a range of techniques to Carry out a range of food tests safely</p>	<p>Describe differences, between pressures or temperatures or electrical potentials by analysing graphical data</p> <p>Describe how life on Earth is dependent on photosynthesis in which green plants and algae trap light from the Sun to fix carbon dioxide and combine it with hydrogen from water to make organic compounds and oxygen. Compare photosynthesis with other scientific concepts such as respiration</p> <p>Describe the characteristics of a living organism are influenced by its genome and its interaction with the environment. Analysing data to spot patterns and draws conclusions.</p> <p>Explain that evolution occurs by a process of natural selection and accounts both for biodiversity and how organisms are all related to varying degrees. Describing different scientific theories</p> <p>Describe how chemical reactions take place in different ways</p>	<p>Describe the structure of the universe in detail, in order of size and of distance away from the earth. Describe evidence for the 'Big Bang'</p> <p>Describe models, as in the particle model of matter or the wave models of light and of sound</p> <p>Describe the symptoms, mode of transmission of communicable diseases. Describe how resistance to antibiotics occurs. Describe how antibodies are antigen specific and how immunity occurs. Describe Flemings observations and conclusions</p> <p>Describe techniques used to identify pure substances or mixtures. Linking these techniques to uses in the workplace.</p> <p>Describe what makes a healthy food option, describing the role of each nutrient in the body</p> <p>Use a range of techniques to Carry out a range of food tests safely</p>	<p>Describe how life on Earth is dependent on photosynthesis in which green plants and algae trap light from the Sun to fix carbon dioxide and combine it with hydrogen from water to make organic compounds and oxygen</p> <p>Describe that evolution occurs by a process of natural selection and accounts both for biodiversity and how organisms are all related to varying degrees. Describe the barriers to chemical reactions so reactions occur at different rates</p> <p>Describe differences, for example between pressures or temperatures or electrical potentials</p> <p>Describe how chemical reactions take place in different ways. Describe that energy is conserved in chemical reactions</p>	<p>Describe the structure of the universe in detail, in order of size and of distance away from the earth.</p> <p>Describe models, as in the particle model of matter or the wave models of light and of sound</p> <p>Describe the symptoms, mode of transmission of some communicable diseases. Describe how resistance to antibiotics occurs. Describe immune response and drug development. Describe Flemings observations</p> <p>Describe techniques used to identify pure substances or mixtures.</p> <p>Describe what makes a healthy food option, explaining the role of each nutrient in the body</p>	<p>Describe how life on Earth is dependent on photosynthesis in which green plants and algae trap light from the Sun to fix carbon dioxide and combine it with hydrogen from water to make organic compounds and oxygen</p> <p>Describe that evolution by natural selection</p> <p>Describe chemical reactions taking place. Describe that energy is conserved in chemical reactions</p> <p>Describe some differences, for example between pressures or temperatures or electrical potentials</p> <p>Describe how chemical reactions take place in different ways</p>
<b>Emerging learner</b>	<p>Describe the structure of the universe, in order of size and of distance away from the earth. Know that all matter started as the size of a 'pin head'</p>	<p>Know differences, between pressures or temperatures or electrical potentials</p> <p>Describe photosynthesis simply</p> <p>Describe that evolution occurs by a process of natural selection</p>	<p>Name parts of the universe, in order of size and of distance away from the earth. Describe evidence for the 'Big Bang'</p> <p>Describe models, as in the particle model of matter or the wave models of light and of sound</p>	<p>State what an electric current is and identify some components</p> <p>Describe photosynthesis simply</p> <p>Describe that evolution occurs by a process of natural selection</p>	<p>List a few parts of universe</p> <p>Identify models used to identify light or sound</p> <p>Identify a few symptoms of some diseases</p>	<p>State what an electric current is and identify some components</p> <p>Describe photosynthesis simply</p> <p>Describe that evolution occurs by natural selection</p>

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	<p>Identify models, as in the particle model of matter or the wave models</p> <p>Know and describe the symptoms, mode of transmission of some communicable. know how resistance to antibiotics occurs. Know how antibodies are antigen specific and how immunity occurs.</p> <p>Identify techniques in detail used to identify pure substances or mixtures. Linking in detail these techniques to uses in the workplace.</p> <p>Identify what makes a healthy food option, Describe the role of some nutrients in the body</p> <p>Know and use a range of techniques to Carry out a range of food tests safely</p>	<p>know differences, for example between pressures or temperatures or electrical potentials</p> <p>Know what can affect chemical reactions</p>	<p>Describe the symptoms, mode of transmission of communicable diseases. Know what bacterial resistance is</p> <p>identify techniques used to identify pure substances or mixtures. Describe some uses in the workplace</p> <p>Identify what makes a healthy food option, describing the role of few nutrients in the body</p> <p>Carry out food tests safely</p>	<p>Identify different chemical reactions. Know what can affect chemical reactions</p>	<p>Describe techniques used to identify pure substances or mixtures.</p> <p>Identify a healthy food option</p>	<p>Identify a chemical reaction</p> <p>Describe some differences, for example between pressures or temperatures or electrical potentials</p>
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