

| Year 7 Science | Greater than expected progress. | | Expected progress | | Less than expected progress | |
|-------------------------|---|--|---|---|--|--|
| | Students will be able to know / understand / do: | | Students will be able to know / understand / do: | | Students will be able to know / understand / do: | |
| | Mid-year | End of year | Mid-year | End of year | Mid-year | End of Year |
| Extended learner | <p>Explain that the fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems, enabling living processes to be performed effectively</p> <p>Explain models, as in the particle model of matter and evaluating limitations of models used</p> <p>Explain periodic properties of elements in terms of the atomic structure of the elements explaining links to chemical and physical properties.</p> <p>Explain techniques in detail used to identify pure substances or mixtures. Linking in detail these techniques to uses in the work place.</p> <p>Use and manipulate physical laws and models which are expressed in mathematical form and apply to different situations (speed/distance/time/energy transfer/efficiency/cost calculations)</p> | <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 using diagrams how forces in equilibrium, not in equilibrium can affect objects (speed up, slow down compress, stretch)</p> <p>Explain that life processes depend on molecules whose structure is related to their function. Apply this knowledge to different situations.</p> <p>Explain the characteristics of a living organism are influenced by its genome and its interaction with the environment.</p> <p>Analysing data to spot patterns and draws conclusions. Explaining why improvements need to be made</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 that the fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems.</p> <p>Explain models, as in the particle model of matter and evaluating models</p> <p>Explain periodic properties of elements in terms of the atomic structure of the elements explaining links to chemical and physical properties.</p> <p>Explain techniques in detail used to identify pure substances or mixtures. Linking these techniques to uses in the work place.</p> <p>Use and manipulate physical laws and models which are expressed in mathematical form and apply to different situations (speed/distance/time/energy transfer/efficiency/cost calculations)</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 using diagrams how forces in equilibrium, not in equilibrium can affect objects (speed up, slow down compress, stretch)</p> <p>Explain that life processes depend on molecules whose structure is related to their function.</p> <p>Explain the characteristics of a living organism are influenced by its genome and its interaction with the environment.</p> <p>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 that the fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems.</p> <p>Explain models, as in the particle model of matter.</p> <p>Explain periodic properties of elements in terms chemical and physical properties.</p> <p>Explain techniques used to identify pure substances or mixtures.</p> <p>Use and manipulate physical laws and models which are expressed in mathematical form and apply to different situations (speed/distance/time/energy transfer/efficiency/cost calculations)</p> | <p>Describe the structure of the universe in detail, in order of size and of distance away from the earth.</p> <p>Explain using diagrams how forces in equilibrium, not in equilibrium can affect objects (speed up, slow down compress, stretch)</p> <p>Explain the characteristics of a living organism are influenced by its genome and its interaction with the environment.</p> <p>Explain that evolution occurs by a process of natural selection.</p> |
| Secure learner | <p>Describe that the fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems, enabling living processes to be performed effectively</p> <p>Describe models, as in the particle model of matter and evaluating limitations of models used</p> <p>Describe periodic properties of elements in terms of the atomic structure of the elements explaining links to chemical and physical properties.</p> <p>Describe techniques in detail used to identify pure substances or mixtures. Linking in detail these techniques to uses in the work place.</p> <p>Describe, use and manipulate physical laws and models which are expressed in mathematical form and apply to different situations (speed/distance/time/energy transfer/efficiency/cost calculations)</p> | <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>Describe using diagrams how forces in equilibrium, not in equilibrium can affect objects (speed up, slow down compress, stretch)</p> <p>Describe how life processes depend on molecules whose structure is related to their function. Apply this knowledge to different situations.</p> <p>Describe the characteristics of a living organism are influenced by its genome and its interaction with the environment.</p> <p>Analysing data to spot patterns and draws conclusions, Describe improvements.</p> <p>Describe how 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>Describe that the fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems, enabling living processes to be performed effectively</p> <p>Describe models, as in the particle model of matter and evaluating limitations of models used</p> <p>Describe periodic properties of elements in terms of the atomic structure, chemical and physical properties.</p> <p>Describe techniques used to identify pure substances or mixtures. Linking these techniques to uses in the work place.</p> <p>Describe and use physical laws and models which are expressed in mathematical form (speed/distance/time/energy transfer/efficiency/cost calculations)</p> | <p>Describe the structure of the universe in order of size and of distance away from the earth. Describe evidence for the 'Big-Bang'</p> <p>Describe using diagrams how forces in equilibrium/ not in equilibrium can affect objects (speed up, slow down compress, stretch)</p> <p>Describe how life processes depend on molecules whose structure is related to their function.</p> <p>Describe the characteristics of a living organism are influenced by its genome and its interaction with the environment.</p> <p>Analysing data to spot patterns and draws conclusion.</p> <p>Describe how 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>Describe that the fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems.</p> <p>Describe models, as in the particle model of matter.</p> <p>Describe periodic properties of elements in terms chemical and physical properties.</p> <p>Describe techniques used to identify pure substances or mixtures.</p> <p>Describe physical laws and models which are expressed in mathematical form and apply to different situations (speed/distance/time/energy transfer/efficiency/cost calculations)</p> | <p>Describe the structure of the universe in detail, in order of size and of distance away from the earth.</p> <p>Describe using diagrams how forces in equilibrium, not in equilibrium can affect objects (speed up, slow down compress, stretch)</p> <p>Describe the characteristics of a living organism are influenced by its genome and its interaction with the environment.</p> <p>Explain that evolution occurs by a process of natural selection.</p> |
| Emerging learner | <p>Know that the fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems, enabling living processes to be performed effectively</p> <p>Use models, as in the particle model of matter</p> <p>Describe periodic properties of elements</p> <p>Describe techniques identify pure substances</p> <p>use some physical laws and models which are expressed in mathematical form and apply to different situations (speed/distance/time/energy transfer/efficiency/cost calculations)</p> | <p>Know the structure of the universe, in order of size and of distance away from the earth. Know the evidence for the 'Big Bang'</p> <p>Draw diagrams of forces in equilibrium, not in equilibrium. Identify movement of objects (speed up, slow down compress, stretch)</p> <p>Know how life processes depend on molecules whose structure is related to their function.</p> <p>Know that the characteristics of a living organism are influenced by its genome and its interaction with the environment.</p> <p>know how evolution occurs by a process of natural selection</p> | <p>know that the fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems, enabling living processes to be performed effectively</p> <p>Use models, as in the particle model of matter Know periodic chemical and physical properties of elements</p> <p>Describe techniques used to identify pure substances or mixtures. Linking these techniques to uses in the work place.</p> <p>Use some physical laws and models which are expressed in mathematical form</p> | <p>Know the structure of the universe in order of size and of distance away from the earth. Describe evidence for the 'Big-Bang'</p> <p>Describe using diagrams how forces in equilibrium/ not in equilibrium can affect objects (speed up, slow down compress, stretch)</p> <p>Describe the characteristics of a living organism are influenced by its genome and its interaction with the environment.</p> <p>Describe how 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>know cells make tissues, tissue make organs and organs make systems</p> <p>Identify models used to represent solids, liquids and gases</p> <p>Describe a few properties of named elements</p> <p>Identify techniques used to separate mixtures.</p> <p>Use a few simple limited 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.</p> <p>Identify how a few forces can affect a limited number of objects</p> <p>Describe the characteristics of a living organism</p> <p>know that evolution occurs by a process of natural selection.</p> |