

KS3 Assessment Rubric – SCIENCE – MATERIALS, THEIR PROPERTIES & THE EARTH

Year 7

Working Towards Age Expectations	Working At Age Expectations	Working Above Age Expectations
<ul style="list-style-type: none"> ● Pupils use knowledge and understanding of materials, their properties and the Earth to sort materials into groups in a variety of ways, according to their properties. ● They explain the ways in which some materials are suited to specific purposes such as glass for windows or copper for electrical cables. ● They classify changes in materials as reversible, such as water freezing, and non-reversible, such as baking of cakes. ● They use simple scientific ideas with evidence they have collected to give explanations of their observations, linking cause and effect, for example the evaporation of water. ● They recognise and explain the purpose of a variety of scientific and technological developments in their everyday lives, for example sustainable packaging. 	<ul style="list-style-type: none"> ● Pupils describe some processes and phenomena related to materials, their properties and the Earth, drawing on scientific knowledge and understanding and using appropriate terminology, for example separation methods. ● They recognise that evidence can support or refute scientific ideas, such as the classification of reactions as reversible and irreversible. ● They recognise some applications and implications of science, such as the safe use of acids and alkalis. 	<ul style="list-style-type: none"> ● Pupils describe processes and phenomena related to materials, their properties and the Earth, drawing on abstract ideas and using appropriate terminology, for example the weathering of rocks. ● They explain processes and phenomena, in more than one step or using a model, such as the deposition of sediments and their formation into rocks. ● They apply and use knowledge and understanding in familiar contexts, such as identifying changes of state. ● They recognise that both evidence and creative thinking contribute to the development of scientific ideas, such as basing separation methods for mixtures on physical and chemical properties. ● They describe applications and implications of science, such as the uses of metals based on their specific properties or the benefits and drawbacks of the use of fossil fuels.

Year 8

Working Towards Age Expectations	Working At Age Expectations	Working Above Age Expectations
<ul style="list-style-type: none"> ● Pupils describe some processes and phenomena related to materials, their properties and the Earth, drawing on scientific knowledge and understanding and using appropriate terminology, for example separation methods. ● They recognise that evidence can support or refute scientific ideas, such as the classification of reactions as reversible and irreversible. ● They recognise some applications and implications of science, such as the safe use of acids and alkalis. 	<ul style="list-style-type: none"> ● Pupils describe processes and phenomena related to materials, their properties and the Earth, drawing on abstract ideas and using appropriate terminology, for example the weathering of rocks. ● They explain processes and phenomena, in more than one step or using a model, such as the deposition of sediments and their formation into rocks. ● They apply and use knowledge and understanding in familiar contexts, such as identifying changes of state. ● They recognise that both evidence and creative thinking contribute to the development of scientific ideas, such as basing separation methods for mixtures on physical and chemical properties. ● They describe applications and implications of science, such as the uses of metals based on their specific properties or the benefits and drawbacks of the use of fossil fuels. 	<ul style="list-style-type: none"> ● Pupils describe processes and phenomena related to materials, their properties and the Earth, using abstract ideas and appropriate terminology, for example the particle model applied to solids, liquids and gases. ● They take account of a number of factors or use abstract ideas or models in their explanations of processes and phenomena, such as word equations. ● They apply and use knowledge and understanding in unfamiliar contexts, such as relating changes of state to energy transfers in a range of contexts such as the formation of igneous rocks. ● They describe some evidence for some accepted scientific ideas, such as the patterns in the reactions of acids with metals and the reactions of a variety of substances with oxygen. ● They explain the importance of some applications and implications of science, such as the production of new materials with specific desirable properties.

Year 9

Working Towards Age Expectations	Working At Age Expectations	Working Above Age Expectations
<ul style="list-style-type: none"> ● Pupils describe processes and phenomena related to materials, their properties and the Earth, drawing on abstract ideas and using appropriate terminology. ● They explain processes and phenomena, in more than one step or using a model. ● They apply and use knowledge and understanding in familiar contexts, such as identifying changes of state. ● They recognise that both evidence and creative thinking contribute to the development of scientific ideas, such as basing separation methods for mixtures on physical and chemical properties. ● They describe applications and implications of science, such as the uses of metals based on their specific properties or the benefits and drawbacks of the use of fossil fuels. 	<ul style="list-style-type: none"> ● Pupils describe processes and phenomena related to materials, their properties, using abstract ideas and appropriate terminology, for example the particle model applied to solids, liquids and gases. ● They take account of a number of factors or use abstract ideas or models in their explanations of processes and phenomena, such as word equations. ● They apply and use knowledge and understanding in unfamiliar contexts, such as relating changes of state to energy transfers in a range of contexts. ● They describe some evidence for some accepted scientific ideas, such as the patterns in the reactions of acids with metals and the reactions of a variety of substances with oxygen. ● They explain the importance of some applications and implications of science, such as the production of new materials with specific desirable properties. 	<ul style="list-style-type: none"> ● Pupils describe a wide range of processes and phenomena related to materials, their properties, using abstract ideas and appropriate terminology and sequencing a number of points. ● They make links between different areas of science in their explanations, such as between the nature and behaviour of materials and their particles. ● They apply and use more abstract knowledge and understanding, in a range of contexts, such as the particle model of matter, and symbols and formulae for elements and compounds. ● They explain how evidence supports some accepted scientific ideas, such as the reactivity series of metals. ● They explain, using abstract ideas where appropriate, the importance of some applications and implications of science, such as the need to consider the availability of resources, and environmental effects, in the production of energy and materials.