NC Science Unit 3

Level 1 Unit 3 - Science (Materials)

1. The learner will know about a range of properties of materials and communicate their observations in terms of these properties.

1.1 I can identify materials by colour [1]

1.2 I can identfy materials by their feel [2]

1.3 I can identify materials by their shape and size [3]

Level 2 Unit 3 - Science (Materials)

1. The learner will identify a range of common materials and describe some of their properties.

1.1 I can describe similarities and differences between materials [5]

1.2 I can sort materials into groups [6]

1.3 I can identify the basis for my groupings [7]

1.4 I can describe ways in which materials are changed by heating or cooling [8]

<u>1.5 I can describe the ways materials change by processes such as bending or stretching</u> [9]

Level 3 Unit 3 - Science (Materials)

1. The learner will classify materials based on their properties and uses explaining why specific materials are used for specific

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purposes.

1.1 I can classify materials based on their physical properties [11]

1.2 I can identify advantages and disadvantages of specific materials for specific purposes [12]

<u>1.3 I can distunguish between reversible and non-reversible processes related to</u> materials [13]

Level 4 Unit 3 - Science (Materials)

1. The learner will compare a range of materials based on their physical and chemical properties.

1.1 I can describe differences between the properties of different materials [15]

1.2 I can explain how these differences are used to classify substances [16]

1.3 I can describe methods that are used to separate simple mixtures [17]

<u>1.4 I can use scientific words to describe physical changes [18]</u>

1.5 I can make simple predictions about whether changes are reversible or not [19]

Level 5 Unit 3 - Science (Materials)

1. The learner will classify materials, sorting them and separating mixtures of them.

1.1 I can describe properties of metals [21]

1.2 I can identify the difference between properties of metals and non-metals [22]

1.3 I can identify the conditions for change of state [23]

1.4 I can separate mixtures using properties such as solubility and magnetism [24]

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Level 6 Unit 3 - Science (Materials)

1. The learner will understand chemical and physical change in terms of particles in elements, compounds and mixtures.

1.1 I can describe chemical and physical changes [26]

1.2 I can describe how matter is made up of particles [27]

1.3 I can describe differences between the arrangement and movement of particles in solids. liquids and gases [28]

1.4 I can identify similarities between some types of chemical reactions [29]

1.5 I can summarise simple reactions using word equations [30]

1.6 I can relate changes of state to energy transfers in a range of contexts [31]

Level 7 Unit 3 - Science (Materials)

1. The learner will relate the nature and behaviour of materials to the particles from which they are made up.

<u>1.1 I can explain physical and chemical phenomena in terms of the particle model of</u> <u>matter</u> [33]

1.2 I can explain the differences between elements, compounds and mixtures in terms of their constituent particles [34]

<u>1.3 I can recognise that elements and compounds can be represented by symbols and formulae</u> [35]

1.4 I can explain the behaviour of materials in a variety of contexts [36]

1.5 I can make predictions about chemical reactions between a range of substances based on patterns of reactivity [37]

Level 8 Unit 3 - Science (Materials)

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<u>1.1 I can explain materials, their properties and the Earth, scientifically and comprehensively</u> [39]

1.2 I can relate different aspects of materials, their properties and the Earth [40]

1.3 I can represent common compounds by chemical formulae [41]

1.4 I can use these formulae to form balanced symbol equations for reactions [42]

1.5 I can interpret data from a range of sources and in a range of contexts including descriptions of chemical reactions [43]

<u>1.6 I can evaluate data from a range of primary and secondary sources related to</u> <u>materials, their properties and the Earth</u> [44]

1.7 I can synthesise information from data to classfy chemical reactions [45]

<u>1.8 I can synthesise information from data to explain how new substances can be made</u> [46]

1.9 I can explain the importance of a wide range of applications related to materials their properties and the Earth and the implications of science in these applications [47]

Level 9 Exceptional Performance Unit 3 - Science (Materials)

1. The learner will demonstrate breadth and depth of knowledge and understanding related to materials, their properties and the Earth in familiar and unfamiliar contexts.

<u>1.1 I can explain materials, their properties and the Earth with broad and deep knowledge and understanding</u> [49]

<u>1.2 I can relate the behaviour of consituent particles to the macroscopic properties of materials</u> [50]

1.3 I can interpret data from a range of sources and in a range of chemical systems [51]

1.4 I can explain chemical behaviours that do not fit expected patterns [52]

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<u>1.5 I can evaluate findings drawing on a wide and in-depth knowledge of chemical systems</u> [53]

<u>1.6 I can synthesise information from data in a wide range of contexts related to</u> materials, their properties and the Earth [54]

<u>1.7 I can explain the importance of a wide range of applications and implications of science in familiar and unfamiliar contexts related to materials, their properties and the Earth [55]</u>

<u>1.8 I can explain how scientific knowledge and understanding changes, building on</u> processes such as questioning, investigating and evidence-gathering related to materials, their properties and the Earth [56]

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