

Please read the instructions printed at the end of this form. One of these sheets, suitably completed, should be attached to the assessed work of each candidate.										
Unit Title	How scientific ideas have an impact on our lives				Unit Code	R071	Session	Jan/June/Nov	Year	
Centre Name							Centre Number			
Candidate Name							Candidate Number			
Criteria							Teacher Comments			Mark
LO1: Be able to analyse personal and social choices related to energy supply										
MB1: 1 – 7 marks		MB2: 8 – 13 marks			MB3: 14 – 18 marks					
<ul style="list-style-type: none"> • Lists different energy sources available • Basic understanding of factors with influence the choice of energy supply • Limited qualitative analysis of efficiencies of energy transfer in electricity generation 		<ul style="list-style-type: none"> • Limited description of the different energy sources available for electricity generation • Sound understanding of some of the relevant factors which influence the choice of energy supply • Limited quantitative analysis of efficiencies of energy transfer in electricity generation 			<ul style="list-style-type: none"> • Detailed description of the different energy sources available for electricity generation • Comprehensive understanding of the relevant factors for the interest group which influence the choice of energy supply • Complex quantitative analysis of efficiencies of energy transfer in electricity generation and distribution • Quantitative data displayed in appropriate formats 					
[1 2 3 4 5 6 7]		[8 9 10 11 12 13]			[14 15 16 17 18]					

Criteria			Teacher Comments	Mark
LO2: Understand the risks and benefits related to the applications of nuclear radiation				
MB1: 1 – 4 marks	MB2: 5 – 7 marks	MB3: 8 – 10 marks		
<ul style="list-style-type: none"> Identifies a relevant beneficial use (application) of nuclear ionising radiation Lists risks and benefits of the application Limited justification of application in terms of benefit outweighing risk <p style="text-align: right;">[1 2 3 4]</p>	<ul style="list-style-type: none"> Selection of relevant beneficial uses (applications) of nuclear ionising radiation Some detailed analysis of applications in terms of characteristics of radiation Some detailed analysis of risks and benefits of energy transfer to the individual or wider society, to include a qualitative evaluation of risk Relevant analysis of the ways risks from the applications are reduced <p style="text-align: right;">[5 6 7]</p>	<ul style="list-style-type: none"> Selection of a wide range of beneficial uses (applications) of nuclear ionising radiation to include healthcare, industrial and power generation examples Thorough analysis of applications in terms of characteristics of radiation Thorough analysis of the risks and benefits of energy transfer to the individual / wider society, to include a quantitative evaluation of risk Well justified realistic analysis of the ways risks from the applications are reduced <p style="text-align: right;">[8 9 10]</p>		
LO3: Be able to measure energy transfers and calculate efficiencies				
MB1: 1 – 5 marks	MB2: 6 – 9 marks	MB3: 10 – 12 marks		
<ul style="list-style-type: none"> When provided with method and equipment, significant support needed to set it up and to take measurements Some measurements taken and recorded When provided with equations, data substituted correctly and some calculations carried out correctly <p style="text-align: right;">[1 2 3 4 5]</p>	<ul style="list-style-type: none"> Independent selection of equipment to take measurements; little support needed to set up correctly Measurements taken and recorded using an appropriate format Correct equations independently selected; support needed to manipulate equations where necessary Some calculations carried out correctly and one outcome derived correctly <p style="text-align: right;">[6 7 8 9]</p>	<ul style="list-style-type: none"> Independent selection of equipment to take measurements; equipment set up correctly Measurements taken and recorded to appropriate accuracy and precision using an appropriate format, including use of correct units Correct equations independently selected and manipulated where necessary Both outcomes calculated correctly to appropriate numbers of significant figures <p style="text-align: right;">[10 11 12]</p>		

Criteria			Teacher Comments	Mark
LO4: Understand how human health can be improved				
MB1: 1 – 7 marks	MB2: 8 – 13 marks	MB3: 14 – 18 marks		
<ul style="list-style-type: none"> • Lists some of the ways in which factors affect health • Some suggestions made for a health education programme • Limited qualitative data displayed on the impact on health of some of the factors identified • Some brief materials and resources produced <p style="text-align: right;">[1 2 3 4 5 6 7]</p>	<ul style="list-style-type: none"> • Description of the way in which factors affect health of a client group of workers used to design a health education programme • Some quantitative data displayed on the impact on health from the factors identified • A range of relevant materials and resources produced <p style="text-align: right;">[8 9 10 11 12 13]</p>	<ul style="list-style-type: none"> • Detailed explanation of the way in which factors affect health of a client group of workers used to design a detailed, relevant health education programme • A range of relevant quantitative data on the impact on health of the factors identified and displayed accurately in appropriate formats • A wide range of relevant and imaginative materials and resources <p style="text-align: right;">[14 15 16 17 18]</p>		
LO5: Understand the risks and benefits of medical treatments				
MB1: 1 – 4 marks	MB2: 5 – 7 marks	MB3: 8 – 10 marks		
<ul style="list-style-type: none"> • Lists risks and benefits of a medical treatment • Basic understanding of the reasons for the testing of medical treatments • Some materials produced <p style="text-align: right;">[1 2 3 4]</p>	<ul style="list-style-type: none"> • Simple qualitative analysis of the risks and benefits of a medical treatment • Sound understanding of the reasons for the testing of medical treatments • Materials are relevant to the needs of the client group <p style="text-align: right;">[5 6 7]</p>	<ul style="list-style-type: none"> • Quantitative and qualitative analysis relevant for the client group of the risks and benefits of a medical treatment • Thorough understanding of the reasons for the testing of medical treatments • Materials are concise and sensitive to the needs of the client group <p style="text-align: right;">[8 9 10]</p>		

Criteria			Teacher Comments	Mark
LO6: Be able to measure the environmental effects of human activity				
MB1: 1 – 5 marks	MB2: 6 – 9 marks	MB3: 10 – 12 marks		
<ul style="list-style-type: none"> When provided with method and equipment, some support needed to set up equipment and carry out the testing Some data collected and recorded Some simple visualisation of data <p style="text-align: right;">[1 2 3 4 5]</p>	<ul style="list-style-type: none"> Appropriate choice of measures of effects of human activity on a local environment Independent selection of appropriate sampling and testing methods; little support needed to select and set up the equipment needed to carry out testing A range of relevant data collected and recorded using an appropriate format Some relevant visualisation of data and calculation of simple measures such as frequency <p style="text-align: right;">[6 7 8 9]</p>	<ul style="list-style-type: none"> Justification of choice of measures of the effects of human activity on a local environment Independent selection of appropriate sampling and testing methods and the equipment needed to carry out testing; equipment set up correctly A range of data collected and recorded to appropriate accuracy and precision using an appropriate format, including use of correct units Relevant and accurate visualisation of data and correct calculation of complex measures such as indices of biodiversity <p style="text-align: right;">[10 11 12]</p>		
LO7: Understand how materials we use are made from natural resources				
MB1: 1 – 7 marks	MB2: 8 – 13 marks	MB3: 14 – 18 marks		
<ul style="list-style-type: none"> Lists some different materials used for a construction project Basic knowledge of chemical processes, including some use of word equations Limited qualitative analysis of the impact on the environment of the production of materials from natural resources Some alternative production methods or materials suggested which would have a lower environmental impact <p style="text-align: right;">[1 2 3 4 5 6 7]</p>	<ul style="list-style-type: none"> Some support needed for selection of a range of different materials linked to different parts of a construction project Sound knowledge of chemical processes, including some use of symbol equations and chemical nomenclature Analysis of the impact on the environment of the production of materials from natural resources, to include some data on production quantities, yields or energy budgets Some evaluation of alternative production methods or materials which would have a lower environmental impact <p style="text-align: right;">[8 9 10 11 12 13]</p>	<ul style="list-style-type: none"> Independent selection of a range of different types of materials linked to different parts of a construction project, chosen for their properties Detailed knowledge of chemical processes, including correct and appropriate use of balanced symbol equations and chemical nomenclature Thorough analysis of the impact on the environment of the production of materials from natural resources, to include relevant data on production quantities, yields and energy budgets Well justified realistic evaluation of alternative production methods or materials which would have a lower environmental impact <p style="text-align: right;">[14 15 16 17 18]</p>		

Criteria				Teacher Comments		Mark
LO8: Understand how the properties of materials we use are determined by structure and bonding						
MB1: 1 – 4 marks		MB2: 5 – 7 marks		MB3: 8 – 10 marks		
<ul style="list-style-type: none"> • Significant support needed to identify some different types of materials used in a complex product; some simple reasons for their use suggested • Limited description of the properties of selected materials and their structures • Qualitative information on the properties of materials and performance of components <p style="text-align: right;">[1 2 3 4]</p>		<ul style="list-style-type: none"> • Limited support needed for selection of a range of different materials used in a complex product; sound understanding of the reasons why these materials are used, with some links to their properties • Limited explanation of how the properties of these materials depend upon structure and bonding • Some quantitative data displayed on the properties of materials and performance of components <p style="text-align: right;">[5 6 7]</p>		<ul style="list-style-type: none"> • Independent selection of an appropriate range of different types of materials used in a complex product; thorough understanding of the reasons why these materials are used, clearly related to their properties • Detailed explanation of how the properties of these materials depend upon structure and bonding • Independent selection of relevant quantitative data on the properties of materials and performance of components used to support explanations • Quantitative data displayed in appropriate formats, including use of correct units <p style="text-align: right;">[8 9 10]</p>		
LO9: Be able to measure the properties of materials to recommend appropriate uses						
MB1: 1 – 5 marks		MB2: 6 – 9 marks		MB3: 10 – 12 marks		
<ul style="list-style-type: none"> • When provided with method and equipment, some support needed to set up and take measurements. • Some measurements taken and recorded • When provided with the mathematical techniques to use, some data processed correctly <p style="text-align: right;">[1 2 3 4 5]</p>		<ul style="list-style-type: none"> • Independent selection of equipment to take measurements; little support needed to set up correctly • Measurements taken and recorded using an appropriate format • Support needed to process data using appropriate mathematical techniques <p style="text-align: right;">[6 7 8 9]</p>		<ul style="list-style-type: none"> • Independent selection of equipment to take measurements; equipment set up correctly. • Measurements taken and recorded to appropriate accuracy and precision using an appropriate format, including use of correct units • Data processed accurately using appropriate mathematical techniques to identify trends or patterns <p style="text-align: right;">[10 11 12]</p>		
Total/120						
If this is a re-sit, please tick		Session and Year of previous submission	Jan / June / Nov	2	0	Please tick to indicate this work has been standardised internally

Please note: This form may be updated on an annual basis. The current version of this form will be available on the OCR website (www.ocr.org.uk).

Guidance on Completion of this Form

- 1 One sheet should be used for each candidate.
- 2 Please ensure that the appropriate boxes at the top of the form are completed.
- 3 Please enter *specific* page numbers where evidence can be found in the portfolio, and where possible, indicate to which part of the text in the mark band the evidence relates.
- 4 Circle the mark awarded for each strand of the marking criteria in the appropriate box and also enter the circled mark in the final column.
- 5 Add the marks for the strands together to give a total out of 60. Enter this total in the relevant box.