L2 Lead Examiner Report 1901

January 2019

NQF BTEC Level 1/Level 2 Firsts in Construction

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Grade Boundaries

What is a grade boundary?

A grade boundary is where we set the level of achievement required to obtain a certain grade for the externally assessed unit. We set grade boundaries for each grade, at Distinction, Merit and Pass.

Setting grade boundaries

When we set grade boundaries, we look at the performance of every learner who took the external assessment. When we can see the full picture of performance, our experts are then able to decide where best to place the grade boundaries – this means that they decide what the lowest possible mark is for a particular grade.

When our experts set the grade boundaries, they make sure that learners receive grades which reflect their ability. Awarding grade boundaries is conducted to ensure learners achieve the grade they deserve to achieve, irrespective of variation in the external assessment.

Variations in external assessments

Each external assessment we set asks different questions and may assess different parts of the unit content outlined in the specification. It would be unfair to learners if we set the same grade boundaries for each assessment, because then it would not take accessibility into account.

Grade boundaries for this, and all other papers, are on the website via this link:

http://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html

Unit 11: Sustainability in Construction

Grade	Unclassified	Level 1	Level 2		
		Pass	P	M	D
Boundary Mark	**0**	10	20	30	40

Introduction

This report has been written by the Lead Examiner for BTEC Construction and the Built Environment Unit 11 – Sustainability in Construction. It is designed to help you understand how learners performed overall in the exam. For each question there is a brief analysis of learner responses. You will also find some examples of learner responses at a range of different marks. It may be helpful to read this report in conjunction with the mark scheme for the examination. We hope you will find this will help you to prepare your learners for future examination series.

Introduction to the Overall Performance of the Unit

This was the tenth examination for this unit, and the paper produced a range of responses.

It is noticeable that some learners did not attempt all of the questions; however, learners did appear to manage their time effectively and appeared to be able to complete the paper in the allotted time. There did not appear to be evidence of rushed work towards the end of the paper. Therefore, where questions were not answered this may have been due to learners not having the knowledge to provide a response.

The more demanding questions require learners to apply their knowledge in response to sustainability issues related to a range of construction scenarios. It was evident from the responses to some questions that learners had limited knowledge of sustainability in relation to construction. Learners may have some prior learning in respect of environmental and sustainability issues, but it is important that learners are taught sustainability in the context of construction covering the lifecycle of a development within the built environment and the full range of topics covered in the unit specification. For example, learners appeared to have limited knowledge and understanding of types of gas boiler and the use of soakaways for the disposal of surface water. Learners also showed in their responses to question 23 that they had limited understanding of how Building 2 in the scenario may be refurbished.

Learners would also benefit from being taught examination skills and techniques as often they did not appear to have read the question properly. This resulted in questions not being answered using an appropriate methodology. Where questions required learners to ‘give’ many provided extended responses where only naming or a short response is required. Learners should be familiar with the command verbs to be able to effectively answer questions that require them to ‘describe’, ‘explain’, ‘discuss’ and ‘compare’. Learners need to provide a response that answers the question and not just repeat information from either the question or the scenario in Section B.

Individual Questions

Section A

Question 1

A multiple choice question that required the identification of two high embodied energy materials.

Targeted Specification Area: Learning Aim B1

Q1: Many learners were able to identify both of the correct answers 'Stell' and 'PVCu'.

Question 2

This question required learners to give two benefits of building houses with their rear elevation facing south.

Targeted Specification Area: Learning Aim B1

Q2: Many learners were able to give at least one correct response and some were able to give two correct responses. Correct responses included 'the sun shining on the rear of the house for most of the day', 'maximising solar gain' or 'maximise light from the sun'.

Question 3

A multiple choice question that required the identification of two components with low embodied energy.

Targeted Specification Area: Learning Aim B1

Q3: Many learners were able to identify both correct responses 'Stone window sill' and 'Timber door frame'.

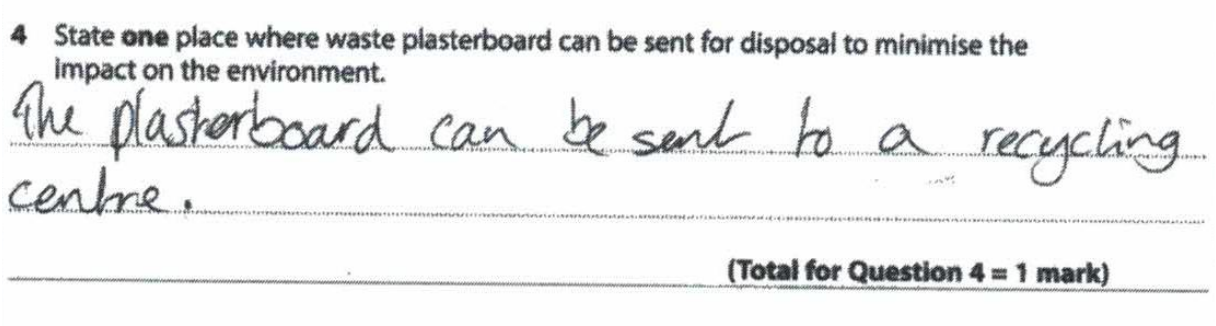
Question 4

This question assessed learners' knowledge of the disposal of plasterboard.

Targeted Specification Area: Learning Aim A2.3

Q4: Learners were required to state one place where waste plasterboard can be sent for disposal to minimise the impact on the environment. A correct response was 'specialist recycling Centre'. Some learners provided incorrect responses related to the segregation of materials on construction sites and the re-use of offcuts.

1 mark example:


4 State **one** place where waste plasterboard can be sent for disposal to minimise the impact on the environment.

The plasterboard can be sent to a recycling centre.

(Total for Question 4 = 1 mark)

Question 5

This question required learners to have an understanding of the use of modular dimensions.

Targeted Specification Area: Learning Aim B1

Q5: Some learners were able to provide one response and a few learners were able to provide two responses. The most frequent response was that the use of modular dimensions 'reduces waste'.

Question 6

This question required learners to have a knowledge and understanding of training provided within the construction industry.

Targeted Specification Area: Learning Aim A2.1

Q6: Learners were required to state one way that people living in low lying coastal areas may be affected by global warming. The most frequent response given was 'rising sea levels', other responses given included 'increase in flooding' and 'coastal erosion'.

Question 7

This question required learners to have an understanding of pollution caused by construction plant.

Targeted Specification Area: Learning Aim A2.4

Q7: Learners were required to state the type of pollution that will be reduced by the use of silencers on construction plant. Many learners correctly responded with 'noise pollution'.

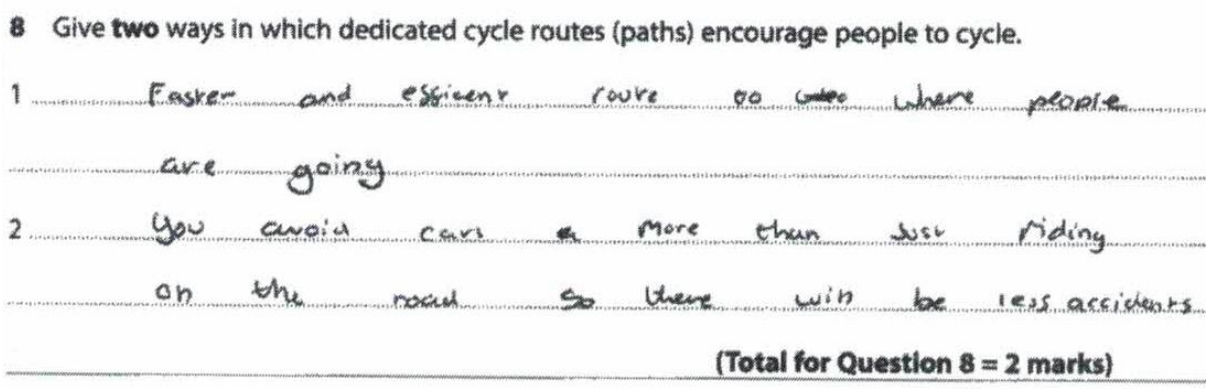
Question 8

This question required the learners to have an understanding of the provision of cycle routes.

Targeted Specification Area: Learning Aim B1

Q8: Learners showed an understanding of the topic, but some learners were only able to provide one correct response. Frequent correct responses included 'safer', 'separation from other traffic' and 'often provide a direct route'.

2 mark response


8 Give **two** ways in which dedicated cycle routes (paths) encourage people to cycle.

1 Faster and efficient route to where people are going

2 You avoid cars & more than just riding on the road so there will be less accidents

(Total for Question 8 = 2 marks)

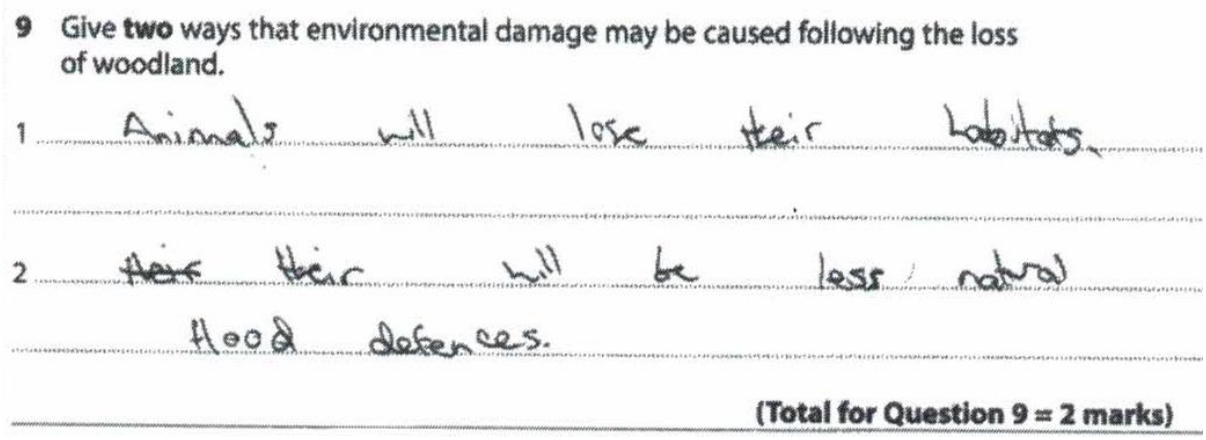
Question 9

This question required learners to demonstrate an understanding of environmental damage caused by the removal of woodland.

Targeted Specification Area: Learning Aim A2.2

Q9: Many learners were unable to provide a correct response to this question. A number of learners were able to provide one correct response, for example 'loss of animal habitats'.

2 mark example:


9 Give **two** ways that environmental damage may be caused following the loss of woodland.

1 Animals will lose their habitats.

2 their their will be less natural flood defences.

(Total for Question 9 = 2 marks)

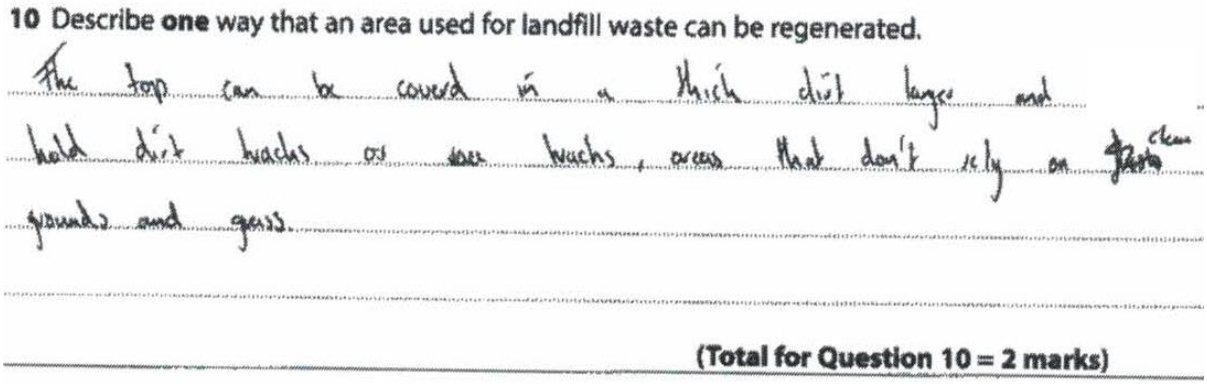
Question 10

This question required learners to have an understanding of the regeneration of landfill sites.

Targeted Specification Area: Learning Aim A2.2

Q10: Learners were required to describe one way that an area used for landfill waste can be regenerated. Few learners were able to provide a correct response. Former landfill sites are capped with soil and made into recreational areas. Many learners provided incorrect responses that the contents can be recycled.

2 mark example:


10 Describe **one** way that an area used for landfill waste can be regenerated.

The top can be covered in a thick dirt layer and build dirt tracks or use tracks, areas that don't rely on the ground and grass.

(Total for Question 10 = 2 marks)

Question 11

A multiple choice question that required the identification of two high embodied energy materials.

Targeted Specification Area: Learning Aim A2

Q11: Many learners were able to identify both of the correct answers 'Carbon emissions' and 'Dust particles'.

Question 12

This question assessed the learners' understanding of the possible uses of demolition materials.

Targeted Specification Area: Learning Aim B1

Q12: The question required learners to give one use in new building for crushed brick and concrete. Few learners were able to provide a correct response. For example 'as a fill material'. Many learners gave incorrect responses and these included 'the common name for the material - hardcore', 'use as render' and 'foundations'.

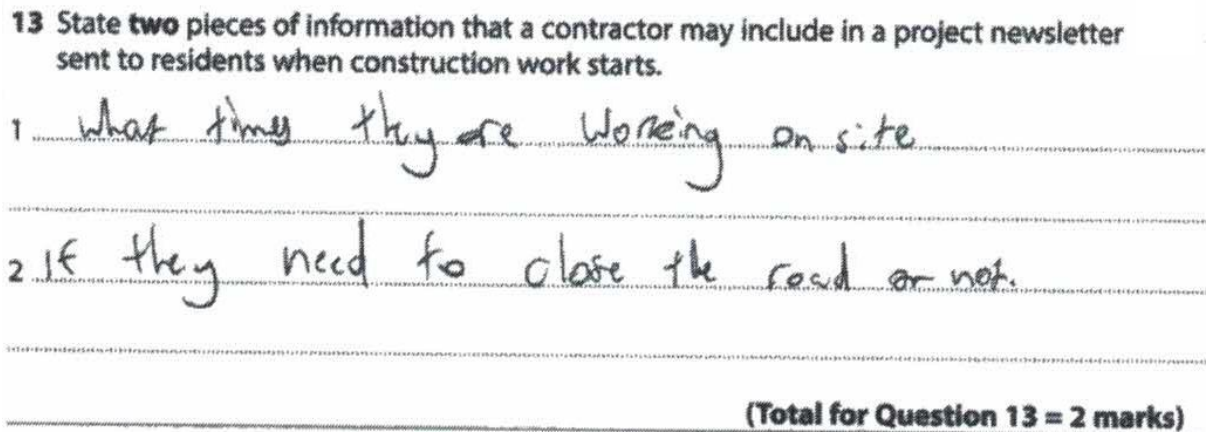
Question 13

This question required learners to have an understanding of the information a contractor may give out to residents when construction work commences.

Targeted Specification Area: Learning Aim B3.2

Q13: Learners showed a good understanding of this question with a large number of learners providing correct responses. Correct responses included 'start date', 'how long the work will take' and 'contact details'.

2 mark example:


13 State **two** pieces of information that a contractor may include in a project newsletter sent to residents when construction work starts.

1 What times they are Working on site

2 If they need to close the road or not.

(Total for Question 13 = 2 marks)

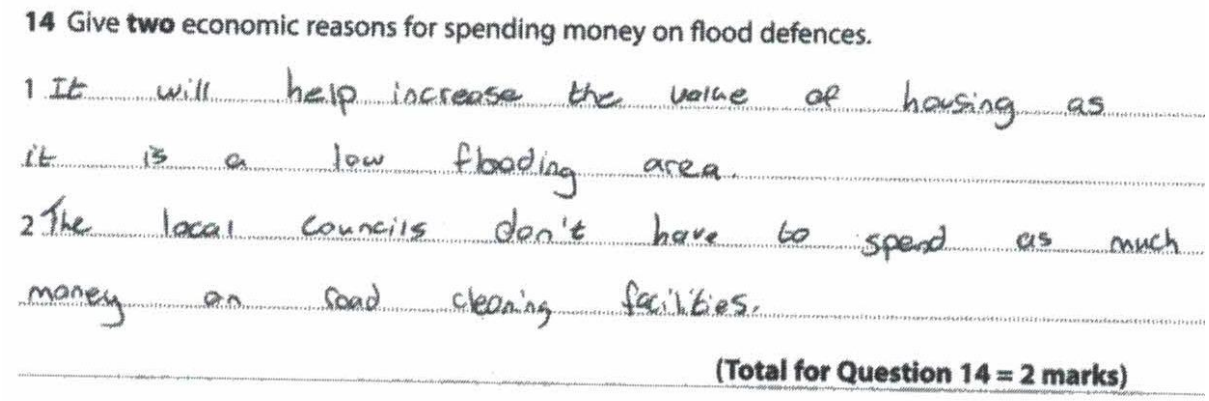
Question 14

This question required learners to have a knowledge of the economics of building flood defences.

Targeted Specification Area: Learning Aim A4

Q14(a): Learners were required to give two economic reasons for spending money on flood defences. A number of learners were able to give at least one correct response. These included 'so money is not spent on repairs' and 'householders will be able to obtain insurance'. Some learners provided an incorrect response as their response was not an economic reason.

2 mark example:


14 Give **two** economic reasons for spending money on flood defences.

1 It will help increase the value of housing as it is a low flooding area.

2 The local councils don't have to spend as much money on road cleaning facilities.

(Total for Question 14 = 2 marks)

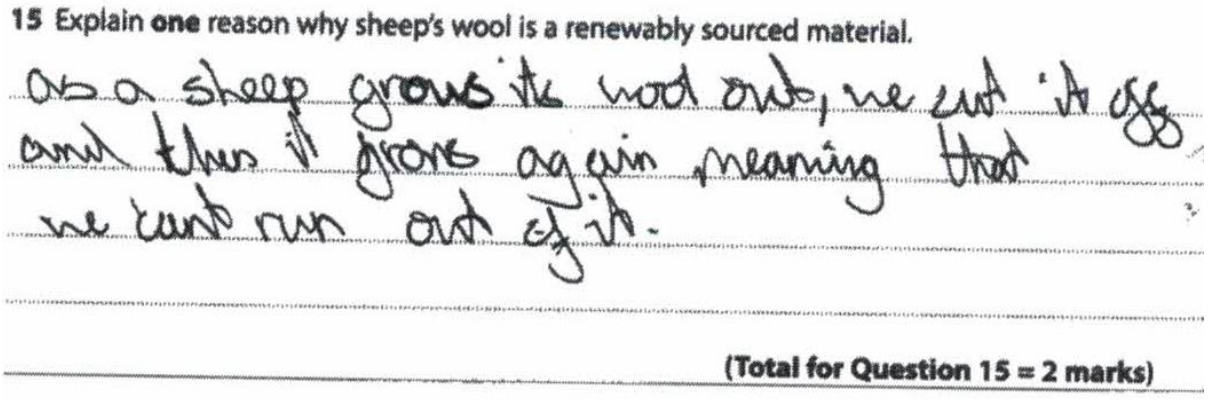
Question 15

This question required learners to have a knowledge and understanding of renewable materials.

Targeted Specification Area: Learning Aim B1

Q15: Learners were required to explain one reason why sheep's wool is a renewably sourced material. A number of learners were able to identify why sheep's wool is a renewably sourced material, but were not able to provide a linked response to provide an explanation. An example of an explanation is 'the wool is cut from the sheep' with a linked response 'and it will regrow so it can be cut again'.

2 mark example:


15 Explain **one** reason why sheep's wool is a renewably sourced material.

as a sheep grows its wool out, we cut it off and then it grows again meaning that we can't run out of it.

(Total for Question 15 = 2 marks)

Question 16

This question required learners to demonstrate a knowledge and understanding of the environmental benefits of building on brownfield sites.

Targeted Specification Area: Learning Aim A2.2

Q16: Learners were asked to explain two environmental advantages of building on brownfield sites. Learners showed some knowledge of the topic, but in most instances were only able to identify a benefit and were not able to provide a

linked response to provide an explanation. The most frequent responses made reference to no further loss of the greenfield. An example of an explanation is 'land may be contaminated and this will be cleared up'.

3 mark example:

In the first response the learner has identified two benefits. Saving animal habitats and not take up more greenfield land. However, there is no linked response to either of the benefits.

The second response has identified that roads will already be in place and the linked response of not destroying further land has been provided.

16 Explain **two** environmental advantages of building on brownfield sites.

1 If you build on a brownfield site you are saving animals habitats by not demolishing any greenfield sites that animals live on.

2 You are not destroying any more land to put roads down because there are already roads there.

(Total for Question 16 = 4 marks)

SECTION B

Question 17

This question was scenario-based and required learners to demonstrate an understanding of water fittings.

Targeted Specification Area: Learning Aim B1

Q17: Learners were required to state a water saving fitting. Learners showed a poor understanding of the topic and many learners provided incorrect responses. Frequent incorrect responses were 'grey water' and 'rain water harvesting'. The question asked for 'water fittings' and an example of a correct response is 'eco shower heads'.

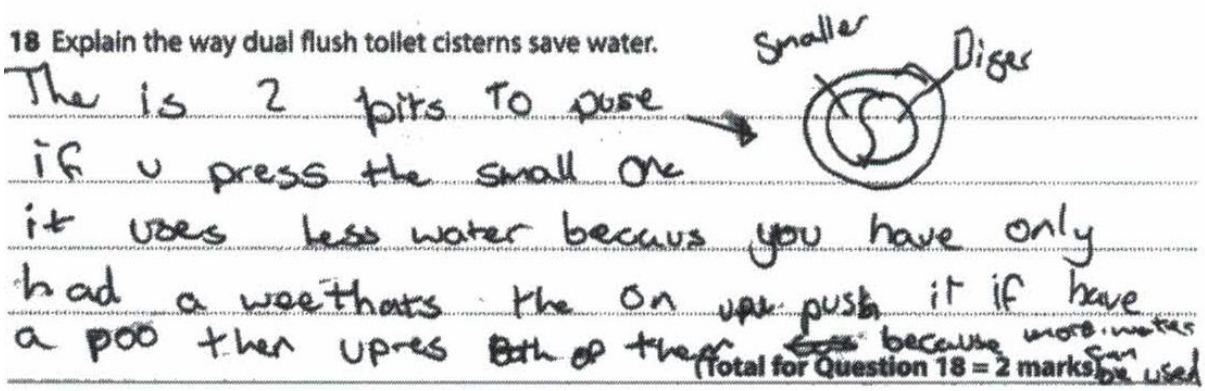
Question 18

This question was scenario-based and required learners to demonstrate an understanding of dual flush toilet cisterns.

Targeted Specification Area: Learning Aim B1

Q18: Learners showed a good understanding of this question with many learners providing a correct explanation. 'Operator has a choice of two volumes of water that can be discharged with less water used when the low volume flush is used'.

2 mark example



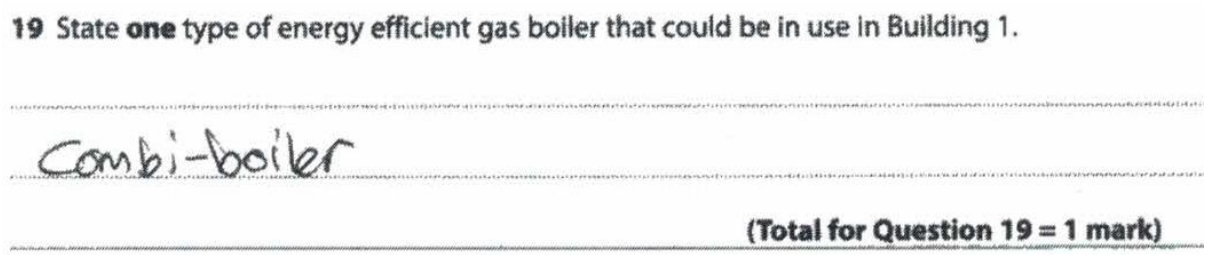
Question 19

This question was scenario-based and required learners to demonstrate an understanding of gas boilers.

Targeted Specification Area: Learning Aim B3

Q19: Learners were required to state one type of energy efficient gas boiler that could be used in Building 1 of the scenario. Few learners were able to state a correct type of boiler. Correct responses provided included 'combination boiler'.

1 mark response


19 State **one** type of energy efficient gas boiler that could be in use in Building 1.

Combi-boiler

(Total for Question 19 = 1 mark)

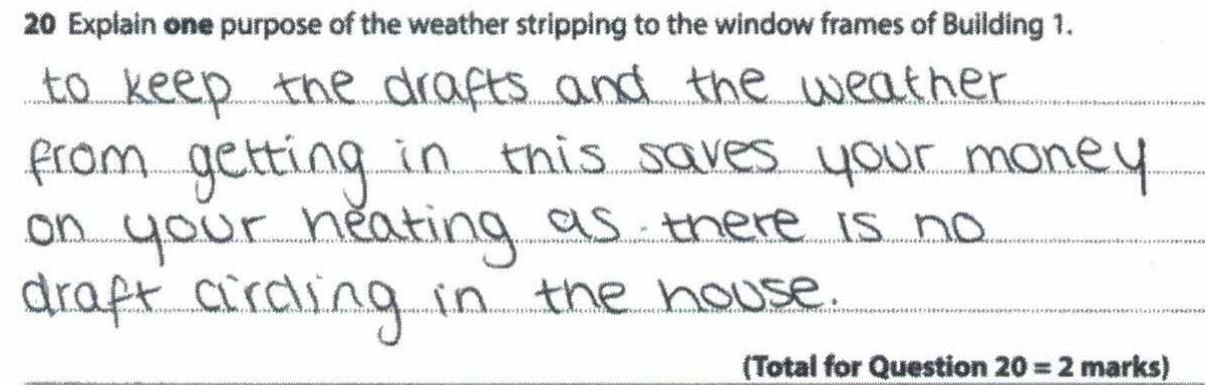
Question 20

This question was scenario-based and required learners to demonstrate an understanding of weather stripping to windows.

Targeted Specification Area: Learning Aim B1

Q20: Learners were required to explain one purpose of the weather stripping to the windows of Building 1 in the scenario. A wide range of responses were given by learners. Learners that gave a correct response were often only able to identify a purpose and were not able to provide a full explanation. An example of a correct explanation is 'prevents drafts through the windows preventing the exchange of warmer internal air with colder external air'.

2 mark example


20 Explain **one** purpose of the weather stripping to the window frames of Building 1.

to keep the drafts and the weather from getting in this saves your money on your heating as there is no draft circling in the house.

(Total for Question 20 = 2 marks)

Question 21

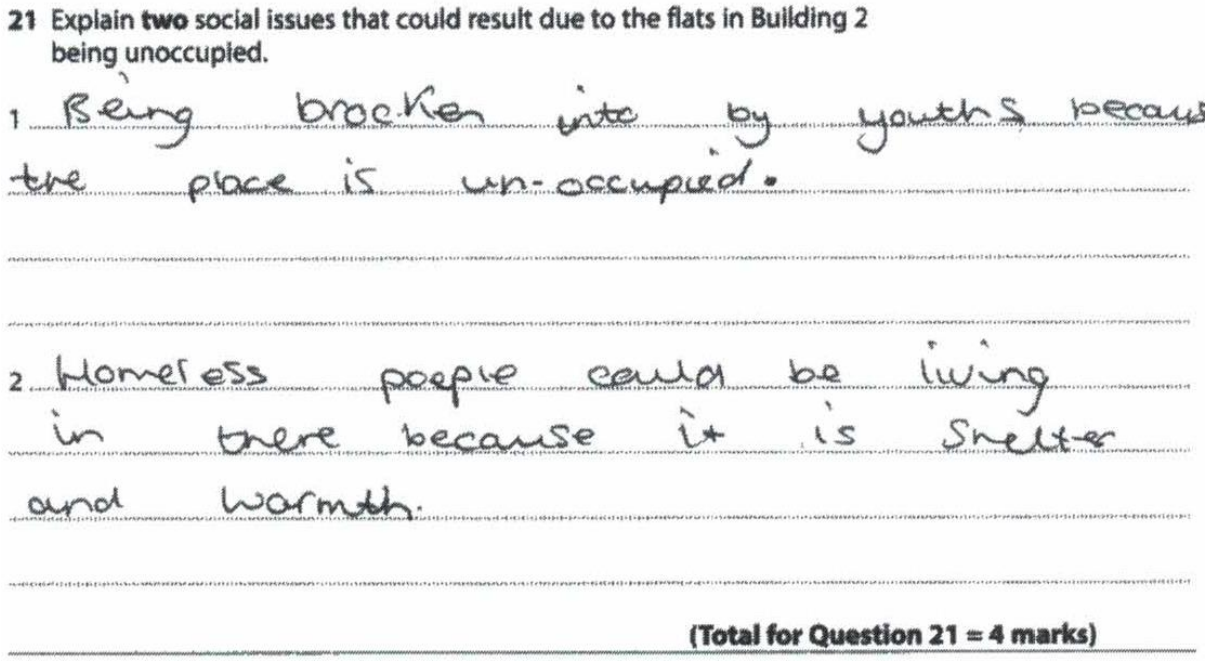
This question was scenario-based and required learners to demonstrate an understanding of social issues due to run down buildings.

Targeted Specification Area: Learning Aim B1

Q21: Learners were required to explain two social issues that could result due to the flats in Building 2 being unoccupied. Many learners showed some understanding of the topic and were able to identify at least one correct social issue. Many learners were not able to provide a linked response to give an explanation. An example explanation is 'vandalism making building look uncared for and encouraging further antisocial behaviour'.

2 mark example:

The first and second responses identify a social issue, but in both responses no linked response is provided to give an explanation.



21 Explain **two** social issues that could result due to the flats in Building 2 being unoccupied.

1 Being broken into by youths because the place is un-occupied.

2 Homeless people could be living in there because it is shelter and warmth.

(Total for Question 21 = 4 marks)

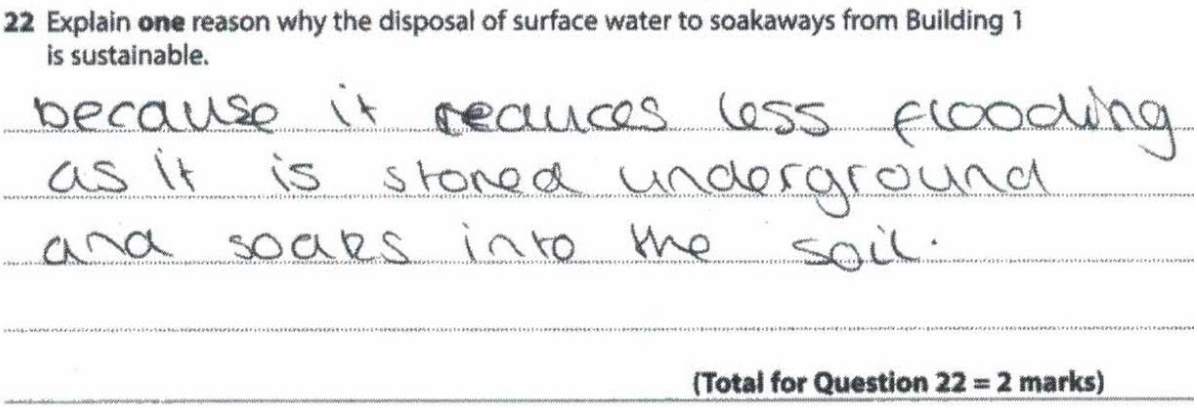
Question 22

This question was scenario-based and required learners to demonstrate an understanding of soakaways.

Targeted Specification Area: Learning B4

Q22: Learners were required to explain one reason why the disposal of surface water to soakaways from Building 1 in the scenario is sustainable. Learners showed a poor understanding of the topic and many learners referred in their responses to the re-use of water. An example correct response is 'surface water is disposed of locally requiring no sewerage system to allow it to flow to a disposal point'.

2 mark example:


22 Explain **one** reason why the disposal of surface water to soakaways from Building 1 is sustainable.

because it reduces less flooding as it is stored underground and soaks into the soil.

(Total for Question 22 = 2 marks)

Question 23

This question was scenario-based and required learners to demonstrate an understanding of making sustainable homes.

Targeted Specification Area: Learning Aim B1, B2, B3 & B4

Q23: Learners were required to discuss improvements that could be made to the Building 2 flats to make them sustainable homes.

Most learners provided a response to this question and were able to draw out some relevant points from the scenario that relates to sustainability.

The mark scheme provides a range of points that could have been considered in the discussion as to how the flats could be made into sustainable homes.

The mark scheme also provides three descriptor mark bands by which the responses are assessed and awarded marks. The learner's application of understanding of sustainability in relation to the scenario is taken into consideration.

Learners should only use material that can be gained from the scenario and should not make assumptions where the scenario provides no basis for these.

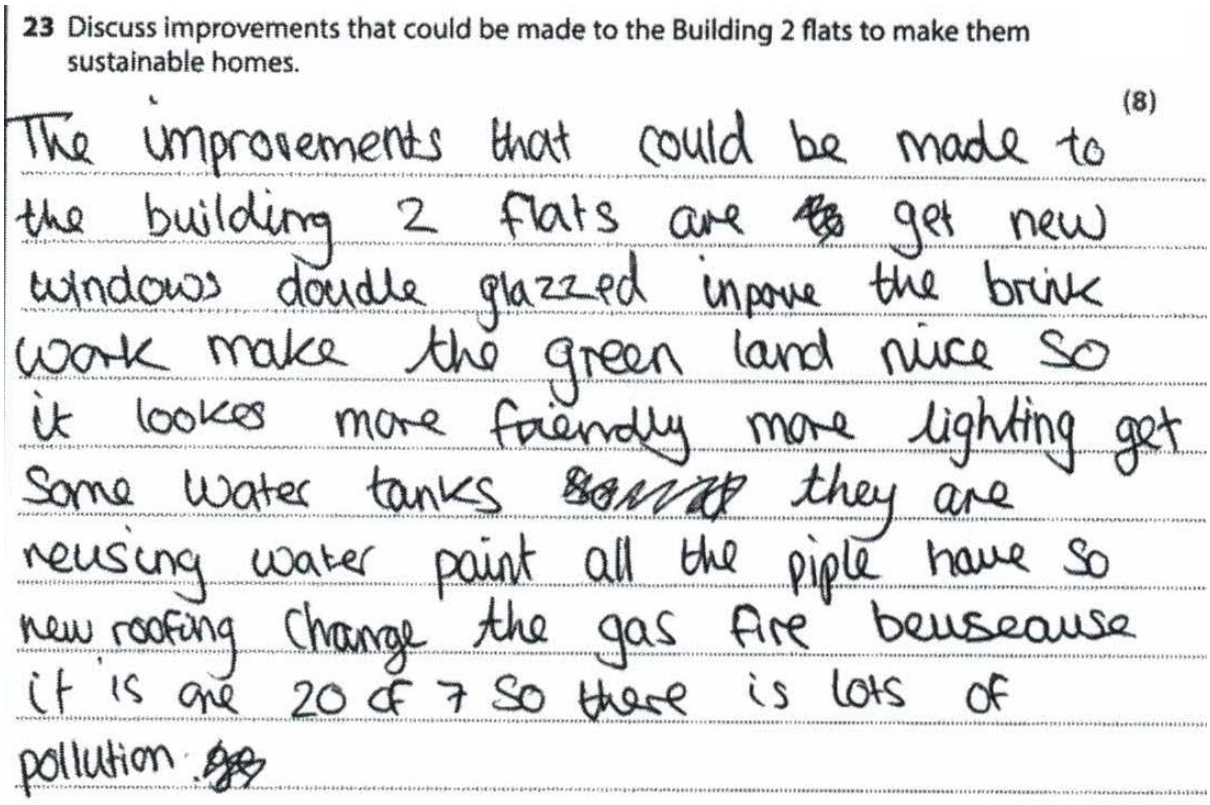
Lower mark band learners are expected to identify a few improvements that could be made to the flats to make them into sustainable homes, with some superficial/generic explanation, and show basic understanding sustainability. The example response below provides a limited range of suggested improvements, but little description is provided

For the mid mark band learners will provide some further discussion of the identified improvements to make the flats into sustainable homes. The response will show a good understanding of sustainability. The example response below provides a good range of suggested improvements with some discussion.

For the higher mark band learners would be expected to provide a detailed discussion of the improvements to the flats to make them sustainable homes. The response will show a developed understanding of sustainability. Learner responses should also be well balanced and cover a wide range of reasons. No examples within this mark band are available.

The descriptors for the mark bands can be found at the end of the mark scheme.

Middle of Band 1 Descriptor Example (2 Marks)



23 Discuss improvements that could be made to the Building 2 flats to make them sustainable homes.

(8)

The improvements that could be made to the building 2 flats are ~~to~~ get new windows double glazzed inpove the brink work make the green land nice so it lookes more faiendly more lighting get Some water tanks ~~Some~~ they are reusing water paint all the pipe have so new roofing change the gas fire beuseause it is are 20 of 7 so there is lots of pollution ~~.~~

Middle of Band 2 Descriptor Example (5 Marks)

23 Discuss improvements that could be made to the Building 2 flats to make them sustainable homes.

(8)

The flats could use double or triple glazed windows too keep the heat in, the concrete interlocki tiles are also letting heat out so a new roof, with insulation in the loft can save money by not using the heater all the time. the boilers could be updated with new timer boilers so they only stay on for a period of time to save energy and money. Bathroom basin and kitchen sink taps could use sensored taps which only turn on when you put your hands underneath. in the bathroom water efficient shower heads can be fitted. and.

Water butts can be used to collect rainwater so if residents want to water there plants or wash their cars they don't waste clean water from inside the house.

Inside the buildings carpets can be fitted in most rooms to keep warm in. and extra sheep fleece

Fire doors that are for houses houses can be used because if there is a fire damage, it will be harder to get into rooms. this means less damage caused and won't have to use as much energy to rebuild the place.

the outside light can be also on a sensor or timer that only triggers when someone is walking /moving so less electricity is used and doesn't effect people from sleeping.

theres chimneys on the flats so log burners can be installed to use sa wood (sustainable material) to heat up the place and saves money by paying for heating etc.

(Total for Question 23 = 8 marks)

Band 3 Descriptor - There is no example.

Summary

Following the review of learner responses to the examination paper the following recommendations are made:

- Learners should be taught the whole of the unit specification
- Learners should understand sustainability in relation to construction technology and practice
- Learners should carefully read each question to understand what is required before attempting their response
- Learners should be taught the form that a response should take when answering questions that ask for a 'description', 'discussion' or an 'explanation'.

In responding to scenario-based questions that require a discussion or explanation learners are required to provide more than repeating parts of the scenario.