

Examiners' Report
June 2014

GCSE Design & Technology 5RM02 01

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications come from Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk.

Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.



Giving you insight to inform next steps

ResultsPlus is Pearson's free online service giving instant and detailed analysis of your students' exam results.

- See students' scores for every exam question.
- Understand how your students' performance compares with class and national averages.
- Identify potential topics, skills and types of question where students may need to develop their learning further.

For more information on ResultsPlus, or to log in, visit www.edexcel.com/resultsplus. Your exams officer will be able to set up your ResultsPlus account in minutes via Edexcel Online.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk.

June 2014

Publications Code UG038529

All the material in this publication is copyright

© Pearson Education Ltd 2014

Introduction

The format of the paper is now well established given that it has now been offered for the last four years. It is encouraging to see and to report that centres are becoming even more familiar with the layout and have used past papers and previous reports to guide their teaching.

On the whole candidates are improving in many areas of the specification and they are getting better at responding to the quality of written communication questions, where their writing shows a better structure. The responses to the design questions also appear to be improving with candidates showing many different ways of making sure they cover all of the design specification points, either by the use of numbers or little grids they write onto the question paper.

There was a marked increase this year in candidates writing outside of the boxes and spaces provided. Candidates must be guided and advised to write in the space provided. In some cases, candidates went on to write two whole sides of A4 in addition to the space provided on the paper. It must be stressed that there is sufficient space to be able to score full marks using just the space provided on the paper.

Question 11 (a) (i)

This question was generally very well answered with the large majority of candidates giving the correct response. Where candidates had done less well they often gave the use of the ruler for 'drawing straight lines'.

Question 11 (a) (ii)

The coping saw was recognised by a good number of candidates and would appear to be a popular type of saw used in centres. In some responses, the term saw was simply given. It must be stressed that in these types of questions, responses and names of tools must be very specific.

Question 11 (a) (iii)

This question was not well done by a good majority of candidates. It follows on from previous years where candidates have not responded well to questions about cutting screw threads, both internal and external. In this case lots of reference was made to screw cutters and it was confused with a 'Tap'.

Question 11 (a) (iv)

On the whole a very good number of candidates scored well on this question. Where they scored less well, they often confused the washer with a bolt or gave a more general description of the use as a surface protector.

Question 11 (b)

A good number of candidates scored at least one mark on this short question. A 'give' type question simply requires candidates here to give two properties without the need to say why or to explain or describe why they are relevant.

In too many instances, candidates give properties such as 'it will not rust'. This will not be credited, they are correct in that it will not rust but it is not a property, it is a characteristic. It is the same to be saying that it is not magnetic. Similarly, too many candidates use the term 'strong' which again has no reference e.g. compressive or tensile for example.

Question 11 (c) (i)

Many candidates were able to offer at least one risk. Too many candidates made reference to the work being cut too much and being too small. Candidates in some cases simply gave preventative measures such as 'wear goggles' as opposed to stating what the risk was.

Question 11 (c) (ii)

This part question was poorly completed by the large majority and clearly suggests that centres are either not teaching this process and candidates are not using this process during their course of study.

Question 11 (d) (i)

The most common response seen here related to the fact that acrylic comes in a wide range of colours. The most common incorrect response seen related to the price of acrylic with candidates saying that it was cheaper.

Question 11 (d) (ii)

Given that this type of question was a 'Describe' type question, it needed candidates to make a point and develop it to say why or what the consequences are. A good number of candidates scored a mark for the fact that acrylic is more likely to break but did not say that it was because it was a brittle material. There were a good number of responses seen in relation to the fact that acrylic is easily scratched and therefore it will lose its visual appeal.

Question 11 (e)

This is a 'Describe' type question and therefore each point made needs to be developed.

(e) A template is used when marking out 50 of the bodies.

Describe **two** advantages of using a template when marking out the bodies. (4)

1 Fast making process.

2 ~~more~~ as they are all the same no difference in them at all.



ResultsPlus Examiner Comments

In this instance the candidate has simply given two points for which they will have been awarded just 2 of the 4 marks available. They have given basic statements and there is nothing wrong with what they have written.



ResultsPlus Examiner Tip

In terms of taking the first response given by the candidate, 'Fast making process, if the candidate were able to go on to say why it is faster, such as 'because you just have to trace around the shape', then they would have been awarded the second mark. It is worth thinking about some connectives (joining or linking words) when you get describe or explain type questions. Connectives are words such as 'because, which means, so that, therefore.' When you make a statement such as 'It is faster because' it means you will naturally go on to say why and give yourself a chance of scoring the other mark on offer.

Question 12

The format of this question is long established and candidates continue to improve in their responses. This type of question requires two different designs to be generated in response to the design specification given.

Design idea 1

(8)
All measurements in millimeters

insides are sloped to collect water

pegs on the sides for jackets which also looks like the animal has colourful hair which could again attract the children

Main compartment where umbrellas go

The whole thing is design to look like an animal's face so kids will like it

The mouth is a hole where a bowl can be placed to collect water and be easily emptied

knocks down fittings can be used since only the bowl needs to be water tight

Made from beech (tough) then stained or painted for water resistance and colour

wide base and will be heavy for a child to tip

bowl made of PE

Design idea 2

Made using acrylic so it can be colour full and easy to shape

head made of acrylic with painted face

coat pegs on the back

holes for umbrellas and when they go it looks like an octopus tentacles

700

300

800

trough to collect water

Joints have a clip system to easily assemble by just snapping them into place

Sea back ground painted on to add a marine feel which will attract children

Joints are fastened on by liquid cement



ResultsPlus

Examiner Comments

This candidate has produced two good designs in response to the brief and has scored a total of 13 marks. There is a clear sketch in the middle which has been well supported with some detailed annotation.



ResultsPlus

Examiner Tip

Try to avoid writing too much, a simple word or two will often suffice such as 'acrylic which has been bent using a strip heater'.

Be careful when it comes to giving processes, ideally the process should relate to the material named. You also need to be careful when giving a process since the specification point here made reference to the product being a one-off and as such injection moulding and blow moulding would not be appropriate processes, especially in the school workshop.

Question 13 (a)

This question produced a good range of correct responses with tough and hard being the most common. Too many candidates use the term strong when giving a property.

Question 13 (b) (i)

Almost all candidates scored at least one correct answer on this question with most scoring two with paint and varnish being amongst the most common.

Question 13 (b) (ii)

This question has a mixed response with many candidates answering correctly but not always using the correct terminology, many confusing preventing with protecting.

(ii) Explain **one** reason for applying a finish to the beech tray.

(2)

It helps to preserve the wood, meaning it
won't rot, so it lasts longer.



ResultsPlus
Examiner Comments

This response scored the two full marks as the candidate said that a finish would help to preserve the wood and they went on to explain that it would last longer.



ResultsPlus
Examiner Tip

Here you can see that this candidate has used a connective, in this example 'meaning it!'

Question 13 (c) (i)

A good number of candidates responded to this question correctly with the most common response seen being related to the handles and the tray. The most commonly seen incorrect responses related to how the tray was appealing to the child.

(c) Explain why the baby-walking aid is successful in meeting the following specification points:

(i) encourages young children to walk

(2)

The tray allows the child to place items in it which they will then want to show their parents but in order to do that they have to walk and the bar allows them to hold and



ResultsPlus
Examiner Comments

This is a full and well explained response from the candidate. They have made a point and then they have been able to go on and fully explain the implications of the statement they have made in response to the question.



ResultsPlus
Examiner Tip

Do be careful that you do not write too much in response to questions. The dotted lines that are provided are a guide and give ample space for you to be able to write.

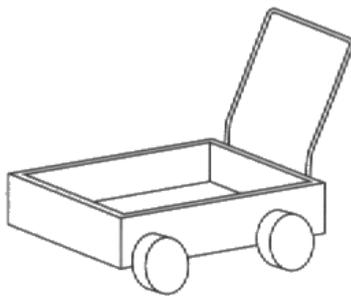
Question 13 (c) (ii)

There were a number of mixed responses or confused responses here. Many candidates described how the wood was heavy/hard/dense and therefore provided a stable base. The most often correctly described response related to the wheels and the shape of the tray.

Question 13 (d)

There was the full range of marks scored here. Candidates found it difficult to differentiate between form and user requirements. Many discussed the fact that one was more suited to those who may well be starting to walk as opposed to one which could be used to put a child in to prevent them from moving around or crawling. Many mentioned the issue of stability and the number of wheels and there was some confusion over the use of materials used to make the respective walkers. There were also lots of comments about the ability to steer or direct one over the other.

*(d) The drawings below show two different types of baby-walking aid.



Walking aid A



Walking aid B

Evaluate walking aid A compared with walking aid B, in terms of form and user requirements.

(6)

Walking aid A provides support for babies when standing up, the handle and wheels allow for the aid to be moved as the baby walks. Walking aid B, similarly, also allows a baby to move around using his legs as the aid is ^{positioned} on four wheels (which ~~like~~ ^{like} walking aid A) allow for stability and movement. Walking aid B holds the baby in a seat whereas walking aid A requires the baby to stand, walking aid B is safer as it provides more support to babies, because babies are not strong enough to hold their own body weight. Furthermore, walking aid A was sharp corners, which are a risk as a baby can fall and ~~injure~~ ^{injure} themselves. Walking aid B is the better walking aid as it is safer and yet provides extra support to help babies walk.

(Total for Question 13)



ResultsPlus
Examiner Comments

This candidate scored the full 6 marks. They have addressed both of the criteria requested and have made comparisons of the two different types of walking devices.



ResultsPlus
Examiner Tip

Try not to write outside of the space provided. This candidate has just managed to stay within the space given.

Question 14 (a)

This was a simple question as to whether candidates knew which group of plastics Urea formaldehyde belonged to. The large majority of candidates were able to state that it was a thermosetting plastic.

Question 14 (b)

This question was disappointingly poorly answered considering the length of time this type of question format has been used. Lots of incorrect properties were given for the material with the most incorrect response being 'it will not rust' Any property given must at least be relevant and then justified in the context of the knife and property given.

Question 14 (c)

It was quite clear in most cases that candidates had either be taught this or not. Many made reference to heating with some giving very specific correct temperature ranges and then were able to go on to say that the material needed to be cooled very quickly, by quenching.

Question 14 (d) (i)

The responses here were not as common as we would have expected. Lots of responses were in relation to the materials used, the size and weight of the knife as opposed to the cost, country of origin and sales data for example.

Question 14 (d) (ii)

Many candidates scored single marks here without going on to fully develop or explain their answers. Many repeated the question by saying that the manufacturer could use email to communicate. In this instance they would score no marks. In this type of question candidates should be suggesting how they could use email such as 'Sending CAD files so that prototype could be produced or costings established.'

(ii) Describe **two** ways in which the manufacturer is able to use email in its business.

1. Emails can be sent to people, far away, i.e. different countries, which can allow quick and easy cross country communication. ^{and businesses. (4)}
2. Emails can be sent to multiple employees at once in forming them of changes or what not, so all employees know what is happening.



ResultsPlus Examiner Comments

This response has scored full marks. In both instances they have made a comment as to how email is used and then they have gone on to describe the implications or benefits of the use of email.



ResultsPlus Examiner Tip

In both responses here the candidate has made very good use of connectives which means that they have been able to go on and fully describe their responses and access the whole range of marks available.

Paper Summary

Many candidates attempted this last question but few scored good marks. There were a lot of responses which discussed the environment as opposed to society. There were also a lot of discussion about impulse buying and advertising but without it being related to society and the impact it has had. Good responses were well put together arguments with the main emphasis being focused on the demise of local shops and the impact this is having on the high street and the fact internet shopping is available to a world wide audience.

Based on their performance on this paper, candidates are offered the following advice:

- Familiarity with all areas of the specification via teacher led examples or demonstrations
- For the design question, ensure that each of the two different design ideas are different in each of the given specification areas.
- Name specific properties and materials rather than material groups (eg wood, metal, plastics)
- Try to avoid going out of the lines and boxes provided in the question paper.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

<http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx>

Ofqual



Llywodraeth Cynulliad Cymru
Welsh Assembly Government



Pearson Education Limited. Registered company number 872828
with its registered office at Edinburgh Gate, Harlow, Essex CM20 2JE