

**Pearson Edexcel Level 1/Level 2 GCSE (9-1) in  
Design and Technology (1DT0)  
Commentary**

<b>Pearson Edexcel Level 1/Level 2 GCSE (9-1) in Design and Technology (1DT0/02)</b>	
Project Title:	Pop-up book
Contextual challenge:	How can products be used to educate young children about endangered animals during their visit to the zoo
Year of examination:	2019

## Assessment criteria

<b>1 Investigate</b>				
<b>Level</b>	<b>Mark</b>	<b>1.1 Investigation of needs and research (AO1 8 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material	<p>The first page of the portfolio sees the candidate using a mind map looking at the problems and issues facing the animals in the wild. The second page sees the design possibilities explored with good use of possible design brief and conclusions at the foot of the page. A second mind map then starts to explore the theme of the pop-up book, several existing products are investigated with some in depth comments regarding them.</p> <p>A questionnaire and client research then follows with additional investigation into primary school children and a visit to London Zoo for inspiration. In short a very thorough investigation of the Contextual challenge and the work seen has been very well written up by the candidate.</p> <p>Full marks are appropriate here.</p>	
<b>Level 1</b>	1-3	<ul style="list-style-type: none"> <li>Evidence of limited investigation and identification of partially relevant design possibilities, which are tentatively justified in relation to the contextual challenge.</li> <li>Basic assessment of user needs and wants and the requirements of the prototype in response to the contextual challenge, with limited reference to form and function.</li> <li>Superficial evidence of links between the design requirements and the research undertaken in relation to the contextual challenge.</li> </ul>		
<b>Level 2</b>	4-6	<ul style="list-style-type: none"> <li>Evidence of adequate investigation and identification of some relevant design possibilities which are justified in relation to the contextual challenge.</li> <li>Adequate assessment of user needs and wants and the requirements of the prototype in response to the contextual challenge, with some reference to form and function.</li> <li>Adequate evidence of links between the design requirements and the research undertaken in relation to the contextual challenge.</li> </ul>		
<b>Level 3</b>	7-8	<ul style="list-style-type: none"> <li>Evidence of developed investigation and identification of relevant design possibilities, which are fully justified in relation to the contextual challenge.</li> <li>Developed assessment of user needs and wants and the requirements of the prototype in response to the contextual challenge, with full reference to form and function.</li> <li>Developed evidence of links between the design requirements and the research undertaken in relation to the contextual challenge.</li> </ul>		
				<b>8/8</b>

<b>1 Investigate (continued)</b>				
<b>Level</b>	<b>Mark</b>	<b>1.2 Specification (AO1 8 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material	<p>The candidate has not written the specification in the traditional table format which is good as it allows a full description and justification to be explained in more detail.</p> <p>A refined design brief is presented detailing the needs and wants of the users. The candidate has shown many measurable points such as the desired size of the book and the size of the user's hand etc these points will be tested at the conclusion of the project.</p> <p>Full marks are appropriate here as all aspects of the assessment criteria have been well covered.</p>	<b>8/8</b>
<b>Level 1</b>	1-3	<ul style="list-style-type: none"> <li>• Basic design brief that demonstrates a simplistic response to the contextual challenge, addressing some of the investigated needs and wants of the user.</li> <li>• Limited range of specification points that are basic and partially measurable, based on a superficial investigation of research in relation to the contextual challenge.</li> <li>• Basic justification of the performance requirements for the product in relation to the contextual challenge.</li> </ul>		
<b>Level 2</b>	4-6	<ul style="list-style-type: none"> <li>• Generally sound design brief that demonstrates a coherent response to the contextual challenge, addressing many of the investigated needs and wants of the user.</li> <li>• Mostly developed range of specification points that are realistic and mostly measurable, based on a mostly relevant investigation of research in relation to the contextual challenge.</li> <li>• Generally sound justification of the performance requirements for the product in relation to the contextual challenge.</li> </ul>		
<b>Level 3</b>	7-8	<ul style="list-style-type: none"> <li>• Fully sound design brief that demonstrates a realistic response to the contextual challenge, addressing most of the investigated needs and wants of the user.</li> <li>• Fully developed range of specification points that are realistic, technical and measurable, based on a fully relevant investigation of research in relation to the contextual challenge.</li> <li>• Fully sound justification of the performance requirements for the product in relation to the contextual challenge.</li> </ul>		

<b>2 Design</b>				
<b>Level</b>	<b>Mark</b>	<b>2.1 Design ideas (AO2 8 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material	<p>Pages 12 to 17 show the candidate exploring some initial ideas for the structure of the book as well as starting to develop the characters they will use to tell the story of endangered animals. Some models can be seen which would normally be included as developmental work but here they are shown to formalise construction techniques and production methods that will be explored further in development. Page 14 shows some mechanical solutions for the ideas showing how the core aspects of the specification can be used to develop candidate knowledge for practical purposes.</p> <p>Full marks are appropriate here as the section is very detailed and all aspects have been considered.</p>	<b>8/8</b>
<b>Level 1</b>	1–3	<ul style="list-style-type: none"> <li>• Basic selection and use of design strategies to inform decisions to generate a limited range of simplistic design ideas in response to the contextual challenge.</li> <li>• Limited consideration for the user needs and specification parameters.</li> <li>• Ideas demonstrate a basic understanding of some materials and processes.</li> </ul>		
<b>Level 2</b>	4–6	<ul style="list-style-type: none"> <li>• Generally appropriate selection and use of design strategies to inform decisions to generate a range of design ideas in response to the contextual challenge.</li> <li>• Generally sound consideration for the user needs and specification parameters.</li> <li>• Ideas demonstrate a generally sound understanding of relevant materials, processes and techniques.</li> </ul>		
<b>Level 3</b>	7–8	<ul style="list-style-type: none"> <li>• Fully appropriate selection and use of design strategies to inform decisions to generate a wide range of design ideas in response to the contextual challenge.</li> <li>• Fully sound consideration for the user needs and specification parameters.</li> <li>• Ideas demonstrate a fully sound understanding of relevant materials, processes and techniques.</li> </ul>		

<b>2 Design (continued)</b>				
<b>Level</b>	<b>Mark</b>	<b>2.2 Review of initial ideas (AO3 8 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material		
<b>Level 1</b>	1-3	<ul style="list-style-type: none"> <li>• Superficial analysis of design ideas in response to the contextual challenge, which considers basic factors and makes limited connections between elements of the design.</li> <li>• Basic evaluation of design ideas leading to a limited refinement and development of designs, demonstrating a limited understanding of design considerations.</li> </ul>	<p>This section sees two pages of very detailed work. The first, a table format, is very detailed and packed with information about reviewing the initial ideas. User group feedback is seen although to be really useful it should come from the user group or client rather than classmates as the comments will tend to be more helpful and will lead to developments of the initial ideas far easier than platitudes from classmates wanting to please the candidate asking the questions.</p> <p>The second sheet contains a detailed conclusion which helps to decide on the idea for the development process.</p> <p>The work scores top marks as both evaluation and analysis points can be seen in the work to a high standard.</p>	
<b>Level 2</b>	4-6	<ul style="list-style-type: none"> <li>• Generally developed analysis of design ideas, leading to appropriate refinement and development of designs, which considers appropriate factors and makes mostly relevant connections between elements of the design.</li> <li>• Competent evaluation of design ideas leading to appropriate refinement and development of designs, demonstrating a mostly sound understanding of design considerations.</li> </ul>		
<b>Level 3</b>	7-8	<ul style="list-style-type: none"> <li>• Fully developed analysis of design ideas leading to effective refinement and development of designs, which considers comprehensive factors and makes fully relevant connections between elements of the design.</li> <li>• Effective evaluation of design ideas leading to considered refinement and development of designs, demonstrating a fully sound understanding of design considerations.</li> </ul>		

<b>2 Design (continued) – Level 3 and 4 on the next page</b>				
<b>Level</b>	<b>Mark</b>	<b>2.3 Development of design ideas into a chosen design (AO1 4 marks AO2 8 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material		
<b>Level 1</b>	1–3	<ul style="list-style-type: none"> <li>Limited use of research to inform ongoing developmental changes.</li> <li>Basic refinements of design ideas and a design solution that partially meets the design specification, informed by the basic application of technical knowledge of materials and a limited application of modelling/simulation techniques.</li> <li>Chosen design idea shows superficial technical details of some materials and components that could be interpreted by a third party.</li> </ul>	8 pages of very detailed work can be seen in this section. The initial idea has moved on and been developed through exploration of images, text styles, manufacturing methods and all with excellent commentary concerning the decisions being taken by the candidate at each stage. The development leads to a chosen design and is awarded full marks, especially as in this section, the iterative concepts have been tried throughout this section.	<b>cont. next page</b>
<b>Level 2</b>	4–6	<ul style="list-style-type: none"> <li>Some appropriate use of research to inform ongoing developmental changes.</li> <li>Some sound refinements of design ideas and a design solution that generally meets the requirements of the design specification, informed by the generally sound application of technical knowledge of materials and/or processes and the mostly appropriate application of modelling/simulation techniques.</li> <li>Chosen design idea shows generally appropriate application of calculations to determine some material quantities and technical details of most materials and components that could be interpreted by a third party.</li> </ul>		

<b>2 Design (continued)</b>				
<b>Level</b>	<b>Mark</b>	<b>2.3 Development of design ideas into a chosen design (AO1 4 marks AO2 8 marks) (continued)</b>	<b>Comments</b>	<b>Mark awarded</b>
<b>Level 3</b>	7–9	<ul style="list-style-type: none"> <li>• Generally appropriate use of research to inform ongoing developmental changes.</li> <li>• Generally sound refinements of design ideas and a design solution that mostly meets the requirements of the design specification, informed by the mostly sound application of technical knowledge of materials and processes and the fully appropriate application of modelling/simulation techniques.</li> <li>• Chosen design idea shows mostly appropriate application of calculations to determine most material quantities and technical details of materials, processes and components that could be interpreted by a third party.</li> </ul>		
<b>Level 4</b>	10–12	<ul style="list-style-type: none"> <li>• Fully appropriate use of research to inform ongoing developmental changes.</li> <li>• Fully sound refinements of design ideas and a design solution that fully meets the requirements of the design specification, informed by the fully sound application of technical knowledge of materials and processes and the effective application of modelling/simulation techniques.</li> <li>• Chosen design idea shows fully appropriate application of calculations to determine all material quantities and technical details of materials, processes and components that could be interpreted by a third party.</li> </ul>		<b>12/12</b>

<b>2 Design (continued)</b>				
<b>Level</b>	<b>Mark</b>	<b>2.4 Communication of design ideas (AO2 8 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material	<p>Very competent work demonstrated by the candidate throughout the initial ideas and development sections of this portfolio.</p> <p>Aspects of CAD work can be seen with the manipulation of text fonts, designs for the backgrounds and printed images that have helped to create the models seen.</p> <p>The candidate has communicated with the written format in a very positive and complete way that has left very little space on any sheet. All areas have been used to show the thoughts and decisions of the candidate at every step.</p> <p>Full marks have been awarded even though a finalised traditional working drawing of the chosen design would have been good to see.</p>	<b>8/8</b>
<b>Level 1</b>	1-3	<ul style="list-style-type: none"> <li>• Basic selection and partially appropriate use of graphical techniques to communicate design ideas.</li> <li>• Basic selection and partially appropriate use of computer-aided design (CAD) techniques to communicate design ideas.</li> <li>• Basic selection and partially appropriate use of written techniques to communicate design ideas.</li> </ul>		
<b>Level 2</b>	4-6	<ul style="list-style-type: none"> <li>• Relevant selection and generally appropriate use of graphical techniques to communicate design ideas.</li> <li>• Relevant selection and generally appropriate use of computer-aided design (CAD) techniques to communicate design ideas.</li> <li>• Relevant selection and generally appropriate use of written techniques to communicate design ideas.</li> </ul>		
<b>Level 3</b>	7-8	<ul style="list-style-type: none"> <li>• Considered selection and fully appropriate use of techniques to communicate design ideas.</li> <li>• Considered selection and fully appropriate use of computer-aided design (CAD) techniques to communicate design ideas.</li> <li>• Considered selection and fully appropriate use of written techniques to communicate design ideas.</li> </ul>		

<b>2 Design (continued)</b>				
<b>Level</b>	<b>Mark</b>	<b>2.5 Review of chosen design (AO3 6 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material	<p>The candidate has reviewed the chosen design against the design brief and the original specification with some detailed thoughts and a RAG rated colour code.</p> <p>The second sheet is better as it contains a lot more thoughts and conclusions about the project, this includes user group and client comments. With this detail it will allow the candidate to progress to the manufacturing stages.</p> <p>Full marks are appropriate here for the level of analysis and evaluation that has been demonstrated.</p>	<b>6/6</b>
<b>Level 1</b>	1–2	<ul style="list-style-type: none"> <li>• Superficial analysis of the refinements made to the chosen design in response to the contextual challenge, which considers a limited range of factors and makes partially appropriate connections between elements of the design.</li> <li>• Basic evaluation of the refinements made to the chosen design, with limited reference to feedback made by others, and the consideration of the materials and components.</li> </ul>		
<b>Level 2</b>	3–4	<ul style="list-style-type: none"> <li>• Generally developed analysis of the refinements made to the chosen design in response to the contextual challenge, which considers a generally relevant range of factors and makes mostly appropriate connections between elements of the design.</li> <li>• Competent evaluation of the refinements made to the chosen design, with mostly sound reference to feedback made by others, and the consideration of the materials, components and manufacturing techniques.</li> </ul>		
<b>Level 3</b>	5–6	<ul style="list-style-type: none"> <li>• Fully developed analysis of the refinements made to the chosen design in response to the contextual challenge, which considers fully appropriate factors and makes fully appropriate connections between elements of the design.</li> <li>• Effective evaluation of the refinements made to the chosen design, supported by fully sound reference to feedback made by others and the consideration of the materials, components and manufacturing techniques.</li> </ul>		

<b>3 Make</b>				
<b>Level</b>	<b>Mark</b>	<b>3.1a Manufacture – selection of materials (AO2 8 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material	<p>Slightly out of order however the materials selection can be seen earlier in the portfolio. Some properties of the card and paper have been detailed. More comments can be found on the final design sheet where specific materials and the choices for using them has been given. The candidate has used these materials in the prototype during construction. Full marks are appropriate to be awarded here.</p>	<b>8/8</b>
<b>Level 1</b>	1–3	<ul style="list-style-type: none"> <li>• Basic selection of materials that are generally appropriate for the chosen prototype.</li> <li>• Show limited understanding of the material properties of the materials used in the prototype.</li> </ul>		
<b>Level 2</b>	4–6	<ul style="list-style-type: none"> <li>• Considered selection of materials that are mostly appropriate for the chosen prototype.</li> <li>• Show a generally sound understanding of material properties of the materials used in the prototype.</li> </ul>		
<b>Level 3</b>	7–8	<ul style="list-style-type: none"> <li>• Effective selection of materials that are fully appropriate for the chosen prototype</li> <li>• Show a fully sound understanding of material properties of the materials used in the prototype.</li> </ul>		

<b>3 Make (continued)</b>				
<b>Level</b>	<b>Mark</b>	<b>3.1b Manufacture – skills and processes (AO2 16 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material	<p>Full marks for a very well made product. A very competent approach has resulted in a prototype pop-up book that looks very professional and suitable to fulfil the contextual challenge and the design brief.</p> <p>The single sheet of photographic evidence details the stages of manufacture along with commentary that supports safe production methods used for themselves and others which was also qualified in the CAB by the centre assessor.</p>	
<b>Level 1</b>	1–4	<ul style="list-style-type: none"> <li>Produce a prototype that demonstrates basic making skills.</li> <li>Basic selection of materials, fixtures, components and fittings, which are generally appropriate for the chosen prototype.</li> <li>Simplistic use of tools, equipment and techniques for the manufacture of the prototype.</li> <li>Demonstrate an adequate degree of safe working practice for self and others.</li> </ul>		
<b>Level 2</b>	5–8	<ul style="list-style-type: none"> <li>Produce a prototype that demonstrates generally competent making skills.</li> <li>Generally considered selection of materials, fixtures, components and fittings, which are mostly appropriate for the chosen prototype.</li> <li>Generally competent use of tools, equipment and techniques for the manufacture of the prototype.</li> <li>Demonstrate a generally high degree of safe working practice for self and others.</li> </ul>		
<b>Level 3</b>	9–12	<ul style="list-style-type: none"> <li>Produce a prototype that demonstrates mostly competent making skills.</li> <li>Mostly considered selection of materials, fixtures, components and fittings, which are fully appropriate for the chosen prototype.</li> <li>Mostly competent use of tools, equipment and techniques for the manufacture of the prototype.</li> <li>Demonstrate a high degree of safe working practice for self and others</li> </ul>		
<b>Level 4</b>	13–16	<ul style="list-style-type: none"> <li>Produce a prototype that demonstrates fully competent making skills.</li> <li>Fully considered selection of fixtures, components and fittings, which are entirely appropriate for the chosen prototype.</li> <li>Fully competent use of tools, equipment and techniques for the manufacture of the prototype.</li> <li>Demonstrate a sustained high degree of safe working practice for self and others.</li> </ul>		

**16/16**

<b>3 Make (continued)</b>				
<b>Level</b>	<b>Mark</b>	<b>3.2 Quality and Accuracy (AO2 12 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material	Quality and accuracy is very high for this complex prototype that has been well made and accomplishes the project intention. The prototype was tested by the end user and was seen to be successful.  Full marks are appropriate in this section	
<b>Level 1</b>	1–3	<ul style="list-style-type: none"> <li>• Produce a simplistic prototype that partially meets the end user needs in relation to a basic design problem.</li> <li>• Produce a prototype that meets limited aspects of the design specification.</li> <li>• Shows a basic understanding of the need for accuracy.</li> </ul>		
<b>Level 2</b>	4–6	<ul style="list-style-type: none"> <li>• Produce a generally functioning prototype that adequately meets the end user needs in relation to a partially demanding design problem.</li> <li>• Produce a prototype that meets some aspects of the design specification.</li> <li>• Show a partially sound understanding of the need for accuracy.</li> </ul>		
<b>Level 3</b>	7–9	<ul style="list-style-type: none"> <li>• Produce a mostly functioning prototype that mostly meets the end user needs in relation to a generally demanding design problem.</li> <li>• Produce a prototype that mostly meets the design specification.</li> <li>• Show a generally sound understanding of the need for accuracy.</li> </ul>		
<b>Level 4</b>	10–12	<ul style="list-style-type: none"> <li>• Produce a fully functioning prototype that fully meets the end user needs in relation to a demanding design problem.</li> <li>• Produce a prototype that fully meets the design specification.</li> <li>• Show a fully sound understanding of the need for accuracy.</li> </ul>		
				<b>12 / 12</b>

<b>4 Evaluate</b>				
<b>Level</b>	<b>Mark</b>	<b>4.1 Testing and Evaluation (AO3 6 marks)</b>	<b>Comments</b>	<b>Mark awarded</b>
	0	No rewardable material		
<b>Level 1</b>	1–2	<ul style="list-style-type: none"> <li>• Superficial analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and showing a partially considered approach to testing against measurable criteria.</li> <li>• Basic evaluation of the prototype, taking into account the intended purpose of the prototype, including its sustainability through a life cycle analysis and drawing partially appropriate conclusions from testing against measurable criteria.</li> </ul>	<p>Seven pages show the high level of skills and attention to every detail to analyse the prototype against the specification and also by asking and working with both the end user and the client.</p> <p>A Life cycle assessment has been carried out that is very detailed, this along with the excellent evidence of the tests and checks that have taken place allow this to also be awarded top marks in this criteria.</p>	
<b>Level 2</b>	3–4	<ul style="list-style-type: none"> <li>• Generally developed analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and showing a generally considered approach to testing against measurable criteria.</li> <li>• Competent evaluation of the prototype, taking into account the intended purpose of the prototype, including its sustainability through a life cycle analysis and drawing generally appropriate conclusions from testing against measurable criteria.</li> </ul>		
<b>Level 3</b>	5–6	<ul style="list-style-type: none"> <li>• Fully developed analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and showing a fully considered approach to testing against measurable criteria.</li> <li>• Effective evaluation of the prototype, taking into account the intended purpose of the prototype, including its sustainability through a life cycle analysis and drawing fully appropriate conclusions from testing against measurable criteria.</li> </ul>		

**6/6**

<p><b>General comments:</b></p> <p>The candidate has produced a finished prototype that is relevant to the Contextual Challenge they have selected. The product is appropriate for KS4 skills and competency. This is a very detailed and well-presented portfolio that has allowed the candidate to access and maximise all the assessment criteria. The centre and the candidate should be very proud of the whole portfolio and prototype that has been made.</p>	
<p style="text-align: right;"><b>GCSE National standard score:</b></p>	<p style="text-align: right;"><b>100/100</b></p>

