

## Creative Thinking Student Guide

You are expected to produce a report with three sections. The first section will introduce key background information to your chosen problem; the second section will outline your creative response to that problem. Both sections should make use of source-based research and use referencing to show where you gathered your information from.

### Choosing a topic

Select a topic that is meaningful to you, remembering that being specific in your chosen focus can help you to come up with a more definite creative solution. We have written up a list of some past titles below, and included some of the key sources that could be used when completing those particular projects.

### Researching

- Your aim is twofold: firstly, to find out the background to your problem; and secondly, to research any ideas / designs / materials / and so on that will help you come up with a detailed creative idea
- When you write up your research, you will need to do two different kinds of writing. In Section 1 you will need to *explain ideas* and in Section 2 you will need to *apply further ideas*.
- At the end of your research project, include a list of all of the sources you used, including the title of the source, the weblink and the date of access.

Creative Thinking Topic	Questions to explore	Starter Search Terms

<p>I propose to use the artistic style of Picasso's Guernica to produce a work of art that raises awareness of the environment</p>	<ul style="list-style-type: none"> <li>- What is the topic and historical background to Picasso's Guernica?</li> <li>- What are the key stylistic features of Picasso's Guernica?</li> <li>- Which key environmental issues might I explore by using Picasso's style?</li> <li>- How can the above information be used to produce a new piece of artwork?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Picasso's Guernica background'</li> <li>- 'Picasso artistic style'</li> <li>- 'Guernica artistic style'</li> <li>- 'Major contemporary environmental issues'</li> <li>- 'Using Picasso's style in my own work'</li> <li>- 'Artists raising awareness about environment'</li> </ul>
<p>I am using architecture to design and build an Amur Leopard sanctuary that removes the need to take animals out of their natural habitat.</p>	<ul style="list-style-type: none"> <li>- What kind of habitat enables Amur leopard to thrive?</li> <li>- What existing methods are there when designing sanctuaries for Amur Leopards</li> <li>- What other existing forms of sanctuary design could be used to create a better form of sanctuary?</li> <li>- How can the information gathered above be combined to design a new form of sanctuary?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Amur leopards background'</li> <li>- 'Amur leopards ideal habitat'</li> <li>- 'Amur leopards sanctuary'</li> <li>- 'Ideal sanctuary design mammals'</li> </ul>

<p>We are using a drone system to solve the problem of having to travel long distances for water.</p>	<ul style="list-style-type: none"> <li>- How much does water weigh and how much can different kinds of drone carry?</li> <li>- What existing kinds of mechanism could be used to collect water remotely?</li> <li>- How could solar technology be used to provide consistent electricity to drones?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Drones background information'</li> <li>- 'Drones that carry water'</li> <li>- 'Solar powered drones'</li> <li>- 'Drone capacity carrying weight'</li> <li>- 'How to fire-fighting helicopters pick up water?'</li> <li>- 'Drones electrical charge'</li> <li>- 'How far away can drones be operated from?'</li> </ul>
<p>I am using underwater village technology to propose a solution to the problem of overpopulation in a Lagoon in Lagos.</p>	<ul style="list-style-type: none"> <li>- What problems is Lagos facing and why?</li> <li>- What are the dimensions and other geographical factors associated with building in the Lagoon?</li> <li>- What is underwater technology and how could it be applied to Lagos Lagoon?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Lagos Lagoon background information'</li> <li>- 'Lagos Lagoon geography'</li> <li>- 'Underwater building technology'</li> <li>- 'Underwater technology existing examples'</li> </ul>
<p>We are using the photographic methods of David Gilliver to create a stop motion animation aimed at raising awareness of overpopulation.</p>	<ul style="list-style-type: none"> <li>- What are the major photographic techniques of David Gilliver?</li> <li>- What are the main problems the world faces in relation to overpopulation?</li> <li>- How can the information gathered in the two questions</li> </ul>	<ul style="list-style-type: none"> <li>- 'David Gilliver photographic style'</li> <li>- 'Background information overpopulation'</li> <li>- 'Artists raising awareness overpopulation'</li> <li>- 'Creating stop motion animation'</li> </ul>

	above be combined to form a new project?	
We are using a range of methods to help us design a programme designed at maintaining the physical and mental health of dementia-sufferers.	<ul style="list-style-type: none"> <li>- What problems to dementia-sufferers face?</li> <li>- What existing treatments or environments are proven to help dementia-sufferers?</li> <li>- How can the information gathered above be used in the development of a new programme for dementia-sufferers?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Dementia background information'</li> <li>- 'Dementia treatment'</li> <li>- 'Innovations in dementia treatment'</li> <li>- 'Ideal programme for dementia-sufferers'</li> </ul>
We are using a variety of city-planning techniques to design the perfect 'eco village'	<ul style="list-style-type: none"> <li>- What existing architectural and city-planning techniques are being used around the world to encourage eco-friendly living?</li> <li>- How could the information above be used innovatively to design a new eco village?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Eco-friendly city planning'</li> <li>- 'Innovations in eco-friendly city design'</li> <li>- 'Designing a village'</li> </ul>

<p>We are using a variety of existing engineering concepts to design a 'BICE' – a bicycle suitable for travelling in the conditions prevalent in Iceland.</p>	<ul style="list-style-type: none"> <li>- What are the main conditions in Iceland that are challenging for bicycle travel?</li> <li>- What existing engineering ideas are there that combat similar environments?</li> <li>- How could the above information be combined in the design and development of a BICE?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Iceland travelling conditions'</li> <li>- 'Bicycles that keep you warm'</li> <li>- 'Bicycles that don't slip on ice'</li> <li>- 'Tyres that don't slip on ice'</li> <li>- 'Bicycles that cover the rider'</li> <li>- 'Lightweight heating devices'</li> </ul>
<p>We are using contemporary concepts from the debates about gender equality to design a gender neutral toy range.</p>	<ul style="list-style-type: none"> <li>- Which concepts from contemporary debate will you be using in your design?</li> <li>- What existing products or other ideas within gender-related design could you apply to your own products?</li> <li>- How can the above information be used to design a new toy range?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Background gender equality'</li> <li>- 'Gender equality in consumer products'</li> <li>- 'Toy design gender equality'</li> </ul>
<p>We are using information from human biology to outline the conditions necessary for humans to live forever</p>	<ul style="list-style-type: none"> <li>- What prevents humans from living longer / forever?</li> <li>- How could the particular issues discovered when answering the questions above be addressed?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Why don't humans live forever?'</li> <li>- 'Diet for long life'</li> <li>- 'Environmental conditions for long life'</li> <li>- 'General guidance for long human life'</li> <li>- 'Medical issues preventing long human life'</li> </ul>

I am using medical concepts to design a surgical instrument that promotes cell growth during procedures.	<ul style="list-style-type: none"> <li>- What are surgical instruments currently like and what are the problems with this?</li> <li>- How could a surgical tool be designed in such a way that it could encourage cell growth whilst being used?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Background information surgical instruments'</li> <li>- 'Innovation in surgical instrument design'</li> <li>- 'Promotion of cell growth'</li> </ul>
I am using my knowledge of dyslexia, and also of font design, to produce a font that that will enable people with dyslexia to focus.	<ul style="list-style-type: none"> <li>- What are the problems faced by people with dyslexia when reading certain fonts?</li> <li>- What current font-designs help with the particular issues faced by people with dyslexia?</li> <li>- How could the above information be used to design a new font?</li> </ul>	<ul style="list-style-type: none"> <li>- 'Background information dyslexia'</li> <li>- 'Background information dyslexia and font design'</li> <li>- 'Existing innovations font design dyslexia'</li> </ul>
I am using a range of information about existing education systems to design	<ul style="list-style-type: none"> <li>- What biological and psychological information do we have about teenagers and the way that they learn best?</li> </ul>	<ul style="list-style-type: none"> <li>- 'When do teenagers learn best'</li> <li>- Which methods enable teenagers to learn best?</li> <li>- 'Innovations in school and education design'</li> </ul>

a school that enhances learning for teenagers.	- Which aspects of existing education systems can be used in the design of your own school?	-

## THE SECTIONS...

### Section 1:

- Outline the background to your problem or issue, using references whenever the information you have used is taken from your research.
- This section should be 300 words, or maybe slightly longer if necessary in setting up the background information to your problem.
- Top marks for clear explanation of carefully chosen relevant information, and outline of what your project will aim to do.
- Here is a sample of an opening paragraph that uses references and starts to outline its background information:

The purpose of this Create Project is to develop an environment that improves the mental and physical health of the elderly, specifically the age category of over 65s. It is a prevailing issue in today's society that much of the older generation either suffer from damaging mental illnesses and or a decline in physical health. On an average day in a 500-bed general hospital, government statistics suggest that 330 of the beds will be occupied by older people<sup>1</sup>. 220 of these patients will have mental disorders, 100 will have dementia and depression, with 66 suffering with delirium.<sup>2</sup> In care homes across the UK, 4 in 10 residents will be affected by depression and in nursing homes, 1 in 10 will have psychotic symptoms.<sup>3</sup> Additionally, a third of those using specialist mental health services are older people, however they only make up 18% of the general population. By 2035, a quarter of the population in England will be part of this age group.<sup>4</sup>

## Section 2:

- This is the key section in your project. It should 600-1000 words.
- If you are writing a report and also producing a creative product like a work of art, this section may well be shorter. You will need to write in detail about how your creative product relates back to your research into the problem, and also the research you have done to influence your creative work.
- This is where you think creatively and propose your solution, using the skills learned in your lessons
- We advise you to make use of the following formula, or something similar in your section section: *We propose to solve problem X by doing Y. We will use A and B in order to C.*
- Top quality writing in this section may well break down your problem into specific parts and propose innovative solutions
- You need to keep using research in this section. The expectation is that you will have needed to look into ideas and / or theories in order to solve your problem
- You may want to use phrases like ‘The first way in which we will address the problem...’ to signpost to your reader what it is you are talking about
- Use phrases like ‘This addresses the problem of X because’ and then explain how your idea will help or be of use in solving the problem.
- Top marks will go to projects that apply existing ideas to your problem in a way that shows genuine thoughtfulness and originality. Instead of coming up with easy, simple ideas, go into lots of detail. Backing this detail up with detailed research is what will get you the highest marks of all.
- Here is a model, taken from a project proposing a solution to the problem of efficient short-distance transport in congested places.

The first way to solve this problem is to look at different wheels, previous designs and way that the skate can attach to your shoes. There are current designs like Heelys, an integrated skate shoe, that have one or 2 wheels in the heel that when leaning slight backwards can be used to move around.<sup>7</sup> These are aimed at kids with bright colours and they do go up to a size 9 but with very few options in wheel size and design. There are also attachments that can be bought with two wheels that go on the heel that attach to your shoe with Velcro. There are several options for different types of wheels there are 70mm or 64mm 82A rubber wheels like the ones used on roller skates or there are smaller thicker wheels like the ones used in Heelys or Quad skates.<sup>8</sup> As the type of wheel that should be used on a pavement or road that might be bumpy softer wheels might be better although they are slower but do have more grip. Harder wheel are faster but they would mean that all bumps and cracks in the ground would be felt from the wheels a 73a-87a would be best as they are soft and have grip.<sup>9</sup> I would have 2 bigger wheels at the back for stability and 2 smaller wheels at the front.



### Section 3:

- Title of section: 'Self-Critique'. This needs to be approximately 300 words.
- Here you work honestly to critique your own ideas and outline the problems that remain. You need not solve these newly proposed problems, though you might point to how you might, if you were to develop your Create Project, work your way round them.
- Consider any remaining problems with the following:
  - o *Range* and scope of solution. Are there any things you have missed?
  - o *Nature* of solution. Is there anything about your proposal that may well not work? Why not?
  - o *Alternatives*. Are there other ideas that might work better that you have only just considered? What are they?

### Section 4: Conclusion

- Summarise concisely what you have done. Which problem have you attempted to solve, which ideas have you used to try to solve it, and how successful have you been? Around 150 words.

Notes on how your project will be marked.

As you work, it is worth bearing in mind which level you are aiming for, and asking yourself / yourselves whether you are meeting each of the level descriptors below:

Grades 7 - 9	An impressively managed project, showing commitment and dedication throughout, with a clearly focused response to a creative challenge and ongoing thoughtful reflection about the process of problem-solving. Sources are explained carefully (not simply summarized) in connection with the chosen problem. Sources are carefully referenced and the bibliography is complete. The student shows care in their choice of sources and uses a good range. These are not simply easy to access websites but sources that provide a good depth of understanding of the problem, possible solutions and relevant creative thinking processes. There is good exploration of alternative creative possibilities and evidence that the
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	final product has been refined. There is good evaluation of the success of the final product in relation to the chosen problem and good reflection on lessons learned about the creative process.
Grades 4 - 6	A reasonably managed project, showing some commitment and dedication throughout, with a reasonably focused response to a creative challenge and some thoughtful reflection about the process of problem-solving. There is reasonable explanation of sources in connection with the chosen problem. There is some referencing of sources. There is a reasonable range of sources and these provide reasonable depth of understanding of the problem, possible solutions and relevant creative thinking processes). There is reasonable exploration of alternative creative possibilities and evidence that the final product has been refined to some extent. There is reasonable evaluation of the success of the final product in relation to the chosen problem and reasonable reflection on lessons learned about the creative process.
Grades 1 – 3	There is some evidence of project management and a limited degree of commitment is shown. A response to a creative challenge is discernible. There is limited evidence of reflection about the process of problem-solving. Most of the research material is collected from sources and there is only limited explanation of sources in connection with the chosen problem. There is a limited range of sources. Understanding of the problem, possible solutions and relevant creative thinking processes is limited. There is little exploration of alternative creative possibilities and little evidence that the final product has been refined. There is limited evaluation of the success of the final product in relation to the chosen problem and limited reflection on lessons learned about the creative process.