

BTEC Applied Science Summer Assignment

Your summer assignment must be submitted in the **first lesson for this subject in September**. The completion of this assignment is compulsory and we expect you to put every effort into completing it to the best of your ability. Failure to submit this assignment will jeopardise your place on this course.

Personal Project

Required Tasks:

- Write a research paper on **one** of the topics below
- Your research paper should be no less than 2 sides of A4 and no more than 4 sides of A4 (not including the bibliography)
- You will also deliver a 5 minute summary presentation (using powerpoint or another appropriate slideshow programme) of your work which should outline your key findings and overall conclusions. You will present your work to class in September.
- Both tasks will be assessed.

Key aims of this assignment:

- To develop your research skills
- To develop your academic writing skills
- To develop your presentation and public speaking skills
- To widen and deepen your biology subject knowledge

Topic list (The topics are deliberately open ended so the research is personal to you). Choose **one** topic to write about

1. How microscopes have contributed to our understanding of living organisms.
2. How bacteria can affect the lives of humans and other organisms.
3. Describe the ways in which different species of organisms differ from each other.
4. Cells are easy to distinguish by their shape. How are the shapes of cells related to their function?
5. Evaluate the importance of responses to changes in the internal and external environment of an organism.

Write an essay, minimum 4 sides of A4, including diagrams

Please see guidelines below for further support

Guidance for writing your research paper

1. Choose a topic that interests you, if you are interested in the subject matter your work will usually be better and it will be more fun to research.
2. Once you have chosen your topic, you will need to research a range of sources. To help you do this you can give yourself some research questions to answer. For example, if you were researching Co-ordination and Control (not one of the topic areas above) you could research the answers to the following questions:

- > What is the Brain?
- > How does the brain work?
- > How does the hypothalamus work?
- > How are do the cells in the hypothalamus communicate?

These questions help to focus your research. Your task is to think of questions that will help to focus your research for one of the topic areas above. Ensure that your research is focused and relevant to the topic area.

3. There is an expectation that you will use a range of sources for your research, to get the highest grades website sources will not be enough. Explore: books, Journals, science magazines (New Scientist). Use these sources to develop an understanding of your topic area.
4. **You need to cite references** in your text so make notes of your sources as you go.

See example below:

This is a narrative in-text citation. The author's name is in the text of the sentence. The page number (42) is at the end of the sentence.

Stein (2018) studied whether the early onset of Alzheimer's disease affected individuals younger than 30. His findings revealed that individuals as young as 20 were affected by the disease (42). Another study found similar data, showing that individuals as young as 18 displayed symptoms of the disease (Tang & Pierce, 2014, p. 231). Even though both studies involved individuals in different hemispheres, the results were similar.

This is a parenthetical citation. In parentheses are the last names of the authors, year published, and page number.

5. You should also **make a list** of sources as part of a bibliography at the end of your research paper.

See example below



Bibliography

- "Britain's Crimes of Honour." *Panorama*. BBC1. Mar 19, 2012. Television broadcast
- Davies, Norman, *Europe at war: 1939-1945*, Pan Books, 2006
- Fry, Stephen, "A London Secret Shared," *The New Adventures of Stephen Fry*, Dec 5, 2011, accessed Aug 8, 2013, <http://www.stephenfry.com/2011/12/05/londonlibrary/>
- Mossman, Stephen, "Dorothea von Montau and the Masters of Prague," *Oxford German Studies*, (2010)

6. Plan and get writing:

Your research paper should include;

a) Introduction:

- Tell us what the paper is about
- Awake the readers interest

b) Body:

- 3-6 main points with sub points
- Support ideas with quotes (as point 4 above).

c) Conclusion:

- Very briefly review your points
- State your "take away" message
- Do not include new detail at this point

PPT presentation - Assessment Criteria

Your presentation will be assessed based on knowledge and understanding you show of the topic.

Assessment Criteria

Your research paper will be assessed using the following criteria'

- Scientific understanding -40%
- Breadth of knowledge- 25%
- Relevance- 15%
- Quality of written communication-20%