

# MY SCHOOL

<b>ASSESSMENT INSTRUMENT 3</b>			
<b>CONDITIONS OF ASSESSMENT</b>			
Task Type: Extended Response Task	Teacher Monitored		
Individual Response	4 weeks duration		
<b>STUDENT DETAILS</b>			
STUDENT NAME			FORM
<b>SUBJECT DETAILS</b>			
SUBJECT	Biology	YEAR	
TEACHER		TERM	
UNIT	Human Physiology	DURATION	4 weeks
		DATE	
<b>INSTRUCTIONS</b>			
<p>This task to be completed using class time with the remainder to be carried out in your own time.</p> <p>Ownership to be authenticated through:</p> <ul style="list-style-type: none"> <li>Progress checks over the duration of the task;</li> <li>Submission of a draft for discussion prior to the due date, feedback sheet to be included with the final draft;</li> <li>Inclusion of information about documentation from which information has been drawn. (A bibliography must be included with the final draft and appropriate "in text" referencing).</li> <li>Individual interview as indicated on the criteria sheet should concerns arise in regard to student ownership and/or understanding of the submitted task.</li> </ul> <p><b>Submission Dates:</b></p> <p><input type="checkbox"/> &lt;Date&gt;                      Task handed out.</p> <p><input type="checkbox"/> &lt;Date&gt;                      Progress check: you to demonstrate a meaningful engagement with the task requirements, including the identification and understanding of the biology concepts/ideas associated with the thesis.</p> <p><input type="checkbox"/> &lt;Date&gt;                      Progress check and initial draft submission: you need to demonstrate an understanding of how the identified Biology concepts/ideas relate to the thesis. Your initial draft to be submitted by the end of this week.</p> <p><input type="checkbox"/> &lt;Date&gt;                      ERT submitted: this should include revisions indicated on the "Draft Feedback Sheet" and draw together the various elements of the essay into the final draft.</p>			
<b>Understanding Biology</b>		<b>Evaluating biological issues</b>	

## **FOCUS AREAS:** Human Body Systems and Bioethics

**CONTEXT:** Modern medicine has increased the life expectancy of humans and allowed us to live long and productive lives. Along the way, many people suffer medical conditions which threaten their lives by affecting the systems and organs in their bodies.

Scientists have developed methods of intervention to assist with failed organs and systems from bionics, tissue regeneration, transplants, xenotransplantations to stem cells.

If you were placed in the situation where you had a system/organ failure, you would be forced to make a decision on which method of intervention would be best for you.

Rather than just believing what your doctor tells you to do, as a scientifically literate citizen, one would hope that you would perform your own research and synthesise this information to make decisions and judgements based on the science and other relevant information such as your morals, your ethical beliefs and societal values

**TASK:** Your job is to select, with discrimination, appropriate information to produce an 800-1200 word written report and an oral presentation of approx 10 mins duration in response to the Research Question (below). You are required to select a system or organ failure of your choice and argue your case for the best medical methods of intervention developed to 'fix' this condition. You should select an appropriate intervention that will allow you to demonstrate the complexity and interrelationships between concepts.

### **RESEARCH QUESTION:**

You are required to produce the response in the persuasive exposition genre using the following research question:

**What is the best medical intervention for my chosen system/organ failure?**

### **THESIS:**

You are to develop a thesis statement from the above question that you will argue in favour of.

Example: **<Named procedure, eg stem cell injections> is better than alternative medical intervention methods in treating <named failed organs/systems, eg cardiovascular disease>.**

### **REQUIREMENTS:**

**In your response you should incorporate the following in the justification of your thesis statement.**

1. Knowledge of the parts of your system. **Explain** the functions and interactions that the parts of the system have on each other and other systems.
2. Identify and **explain** any homeostatic mechanisms in the system.
3. Identify a problem associated with the system of an organ within the system.
4. **Consider** at least three methods of intervention to assist with the failure of this organ/system and justify why your choice is the best.
5. **Synthesise** information from a variety of valid and reliable resources to **make links and explain** how the intervention effects the structures and functions of the system/organ and it's components
6. **Explain** the ethical, social, cultural, cost and any other considerations you have investigated.

### **Oral presentation (10 mins):**

1. **Summarise** and paraphrase the methods of intervention associated with this system/organ failure
2. **Synthesise and re-organise** you research into presentable information for the intended audience – such as pros and cons, Venn diagrams, concept/mind maps etc.
3. **Evaluate** each method of intervention in terms of the social, ethical, moral, cost and other relevant issues associated with the intervention method.
4. **Make a decision** based upon the above evaluations as to which method of intervention you would decide to use should you ever be in the unfortunate position of having this system or organ problem.
5. **Justify and explain** your evaluation methods and the decision you made.

# THE EXTENDED RESPONSE TASK

## The process for researching and writing an Extended Response task for Senior Biology in the Persuasive Exposition Genre

For detailed description of how to complete a Persuasive Exposition ERT in Biology go to “How to Write a Deadly ERT” at [seniorphysics.com/biol/ert.html](http://seniorphysics.com/biol/ert.html)

The Extended Response Task (ERT) requires you to respond to a science question, statement, circumstance or issue. It is essentially non-experimental, but will require research and use of secondary (someone else’s) data – although you may have to draw on primary (your own) experimental data.

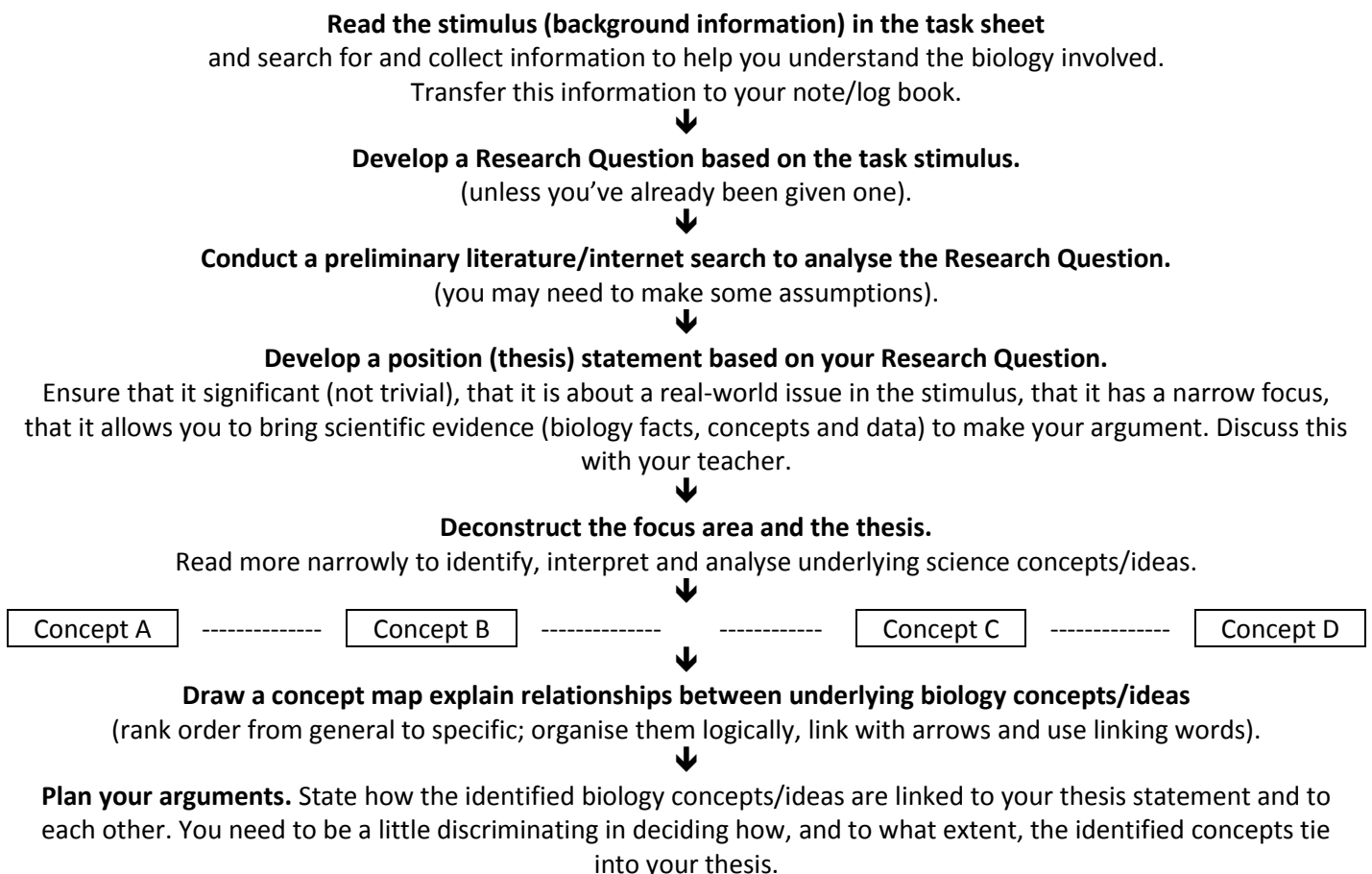
The genre *Persuasive Exposition* requires you to argue for or against a statement, usually called a ‘thesis’ statement, and provide evidence to justify your claims. In Senior Biology, the evidence will consist mainly of biology principles, concepts, facts, ideas and data.

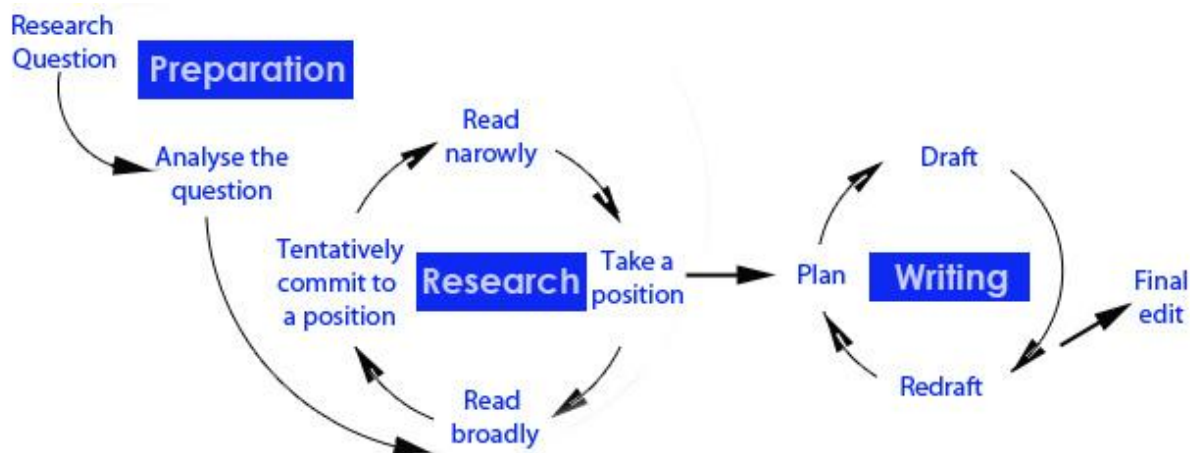
### THE RESEARCH & WRITING PROCESS

There are two phases to preparing your ERT: The *Research Phase*, and the *Writing Phase*.

#### 1. RESEARCH PHASE

The following flow chart and schematics give a suggested approach to the completion of the task.





## WRITING PHASE – PLAN, DRAFT & EDIT YOUR ESSAY

### Introductory paragraph (1-2 pages; 200 – 250 words)

The introductory paragraphs should include a topic sentence which includes the thesis or a specific purpose statement, followed by a brief overview of the essay. This is where you establish the intention of your writing and inform the reader of what the paper is about. You should state why the issue is personally relevant to you, and say why it is relevant to society. Next, you should present definitions of the words and terms that may not be familiar to your audience. You should briefly present the arguments you will be using. The last sentence of this paragraph should also include a transitional sentence that moves the reader to the first paragraph of the body of the essay. In summary, the introduction should contain:

- Thesis (topic, focus) statement and overview
- Personal relevance
- Social relevance
- Definitions (of words, and technical terms)
- Scientific explanations (valid and accurate)
- Closing statement and link to next section

### Body paragraphs (3-5 pages; 600 – 800 words)

These should consist of the arguments; and the limitations or counter-arguments. The best number of arguments is three. Arguments and support should be logically linked and sequenced in a way that makes it easy and interesting to follow the author's train of thought.

#### Argument 1 – the first idea that supports the argument for your thesis.

This paragraph should clearly set out the first and most important argument (premise).

- The first sentence should contain a link to the transitional sentence from the previous paragraph.
- Use only one idea/concept per paragraph. If you change ideas, start a new paragraph.
- It should then include the data (facts, statistics, principles, examples, real-life experiences) and the relevant theory (concepts, laws, formulas, quantities, units) that support the premise. All of the evidence (data and theory) should be specific, relevant and explanations are given that show how each piece of evidence supports and convinces of the author's position. Be careful that if you cite scientific theories or mathematical calculations in support of your thesis, you must explain why and how they relate.
- It should then draw a clear connection to the thesis statement; and most importantly – it should be plausible.
- The closing sentence ideally should not only sum up the paragraph, but also provide a link to the next argument, in order to provide fluency of expression and cohesion in the argument.

#### Argument 2 – the second idea that supports the argument for your thesis.

Same structure as Argument 1 but with further evidence supporting your thesis.

### **Argument 3 – the third idea that supports the argument for your thesis.**

Same structure as Argument 1 but with the final evidence supporting your thesis.

### **Counter-arguments**

Here you can qualify the limitations of your arguments in terms of the quality of the data you used, the supporting formulas or theory, and the logical process you have adopted. You can lump them all together in a “Counter-arguments” or “Limitations” section or you can address them in each of your three arguments.

You could examine the background material presented to you in the stimulus or that you have located elsewhere. You could examine the *authority* on which the claims in the evidence have been made. Not all of the following will apply:

- Is the theory presented correctly without mistakes;
- Are the formulas, units, quantities, and symbols correct and appropriate;
- Have scientific terms been used in an everyday sense to change the meaning;
- Does the theory apply to a limited range of situations or is it able to be generalised more broadly;
- If you are quoting or responding to the claim of a scientist, is it in the scientist’s field of expertise?
- Is the cited expert really an expert?
- How recent is the source?
- How authoritative is the expert? Are they recognised by colleagues as an outstanding expert?
- If several scientists disagree on the topic, have you consulted several experts as well?
- Is supporting evidence available, and is the statement by the scientist in accordance with this evidence?
- Is the expert’s statement clear and intelligible, and correctly interpreted?
- Does the scientist have a vested interest in the research? That is, does the scientist work for a company or institution with a financial interest in the research; if so, you may have to question the scientist’s personal reliability (is he/she honest, unbiased, and conscientious?). This has been a problem in the asbestos, cigarette, swine flu, mobile phone, vaccination, nuclear and oil industries.

### **Concluding paragraph/s (1 page; up to 200 words)**

These paragraphs are the summary paragraphs. Each sentence should sum up the main idea or point of the individual paragraphs in the essay. The conclusion should be very strong and clear and follow logically from information collected and judgments made and must not introduce new information. Ideally, it would contain four critical points:

1. A restatement of the thesis statement, using some of the original language or language that "echoes" the original language. (The restatement, however, need not be a duplicate of the thesis statement.)
2. A summary of the main points from the body of the essay and how they link to this thesis.
3. A statement about the limitations of the arguments.
4. A final statement that signals the discussion has come to an end. This final statement may state the implications of the thesis. It is sometimes where you can offer a solution to the reader. Your last few sentences should leave a lasting and strong impression on the reader.

### **Documentation**

You will need to present a Reference List and a Bibliography.

### **REFERENCES & FOOTNOTES**

References are used to acknowledge the source of comments, quotations, diagrams, photos and so on. *Footnotes* or *endnotes* are used to provide additional interesting and relevant material to elaborate the point but that is incidental to your argument.

### **BIBLIOGRAPHY**

A bibliography is a list of sources consulted during your research. It is different to a Reference List in that you can cite sources that were read but not quoted. Bibliographies and Reference Lists are usually treated as proof that you have consulted more than just one source or format (not just the internet, but books and journals for example). You don’t need to cite every source you consulted; you should be discriminating. A *focused* bibliography will have a few, very specific, highly relevant, recent, authoritative sources in different formats; a *broad* bibliography will have a broad range of sources and demonstrates a wide examination of the sources. Sources should be listed alphabetically

according to the referencing style advised in the task sheet. You should use consistent, accepted conventions of in-text citations and referencing. Use about seven references for a 1500 word assignment.

### **Annotated Bibliography**

You may also be asked to annotate your bibliography; but, if not, you can do this anyway. An *annotated bibliography* is your list of cited sources (as in the *Bibliography* above), each followed by a brief paragraph that discusses aspects of the source. An annotated bibliography is useful for documenting your research in a specific area, exploring varying viewpoints, and summarizing main points from different sources. It is a powerful way to show your control and mastery.

There are two parts to every entry in an annotated bibliography: the citation and the annotation. The first is the *Citation* which includes the bibliographic information of the source (as above). Secondly, there is the *Annotation* which is a brief paragraph following the citation. Its purpose is to provide a critical review of each source, including a critical analysis of:

- **Coverage:** How much detail and depth does the article include?
- **Audience:** describe the intended audience.
- **Credibility:** evaluate the credibility of the source
  - **Authority:** What is the author/webpage/book's status or credibility? Does it have its own references and are they decent references?
  - **Accuracy:** How accurate is this article when compared to all the other articles, textbooks, encyclopaedia entries you've read.
  - **Objectivity** refers to bias: Does the author show an objective approach through using objective "matter of fact" language and simply explaining the subject matter "scientifically"? This can also link back to who wrote it. I.e., are they trying to sell something? Who is paying their salary? Do they have something to gain by trying to persuade you?
- **Currency** refers to the date the article was published: Is the science and the discoveries of science current and does it show the latest information about your topic?
- **Usefulness:** describe the usefulness of the source. You should describe how useful it was for understanding the research problem and justifying the thesis statement.

These notes were prepared by Dr Richard Walding, Griffith University

## Human Physiology ERT and Oral

	A	B	C	D	E
Understanding biology	<p>The student communicates their understanding by:</p> <ul style="list-style-type: none"> <li>making links between system, intervention and ethical principles to reveal meaningful interrelationships</li> <li>applying knowledge and understanding to a range of complex and challenging tasks.</li> </ul>	<p>The student communicates their understanding by:</p> <ul style="list-style-type: none"> <li>explaining system, intervention and ethical principles and describes interrelationships between them</li> <li>applying knowledge and understanding to a range of complex tasks.</li> </ul>	<p>The student communicates their understanding by:</p> <ul style="list-style-type: none"> <li>defining and describing system, intervention and ethical principles and identifying interrelationships</li> <li>applying knowledge and understanding to a range of tasks.</li> </ul>	<p>The student communicates their understanding by stating ideas and using terminology relevant system, intervention and ethical principles and recalling interrelationships.</p>	<p>The student states terminology and ideas relevant to concepts.</p>
Evaluating biological issues	<p>The student communicates by:</p> <ul style="list-style-type: none"> <li>gathering, critically analysing and evaluating information and data from a variety of valid and reliable sources</li> <li>integrating the information and data to make justified and responsible decisions regarding preferred intervention method</li> <li>considering alternatives and predictions relevant in past, present and future biological contexts.</li> </ul>	<p>The student communicates by:</p> <ul style="list-style-type: none"> <li>gathering, analysing and evaluating information and data from a variety of valid and reliable sources</li> <li>integrating the information and data to make supported decisions regarding preferred intervention method</li> <li>recognising alternatives and predictions that are relevant in a range of present-day biological contexts.</li> </ul>	<p>The student communicates by:</p> <ul style="list-style-type: none"> <li>gathering information and data from a variety of sources</li> <li>selecting relevant information and data to make plausible decisions regarding preferred intervention method</li> <li>recognising concepts that form the basis of present-day biological issues.</li> </ul>	<p>The student communicates by:</p> <ul style="list-style-type: none"> <li>gathering and using biological information to make statements</li> <li>recognising that a given issue has biological implications.</li> </ul>	<p>The student communicates by using supplied information to make statements.</p>

Teacher notes on oral: