

**Task 1: What is academic writing?**

Discuss in groups of 4-6 to list 5 differences between academic writing and personal writing.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

**Task 2: Which of the two following samples of scientific writing is better?**

Read the two texts below and discuss with your group. Choose your preferred text and give reasons.

**Text A - Smith's version**

The first experiment in our series with mice showed that total removal of the adrenal glands reduces aggressiveness. Moreover, when treated with corticosterone, mice that had their adrenals taken out became as aggressive as intact animals again. These findings suggest that the adrenals are necessary for animals to show full aggressiveness.

But removal of the adrenals raises the levels of adrenocorticotrophic hormone (ACTH), and Brain (1973) found that ACTH lowers the aggressiveness of intact mice. Thus the reduction of aggressiveness after this operation might be due to the higher levels of ACTH which accompany it.

However, high levels of ACTH have two effects. First, the levels of glucocorticoids rise, which might account for Brain's results. Second, the levels of androgen fall. Since animals with low levels of androgen are less aggressive, it is possible that removal of the adrenals reduces aggressiveness only indirectly: by raising the levels of ACTH it causes androgen levels to drop.

**Text B - Brown's version**

In the first experiment of the series using mice it was discovered that total removal of the adrenal glands effects reduction of aggressiveness and that aggressiveness in adrenalectomized mice is restorable to the level of intact mice by treatment with corticosterone. These results point to the indispensability of the adrenals for the full expression of aggression. Nevertheless, since adrenalectomy is followed by an increase in the release of adrenocorticotrophic hormone (ACTH), and since ACTH has been reported by Brain (1973) to decrease the aggressiveness of intact mice, it is possible that the effects of adrenalectomy on aggressiveness are a function of the concurrent increased levels of ACTH. However, high levels of ACTH, in addition to causing increases in glucocorticoids (which possibly accounts for the depression of aggression in intact mice by ACTH), also result in decreased androgen levels. In view of the fact that animals with low androgen levels are

characterised by decreased aggressiveness the possibility exists that adrenalectomy, rather than affecting aggression directly, has the effect of reducing aggressiveness by producing an ACTH-mediated condition of decreased androgen levels.

Source: <http://www.lancs.ac.uk/celt/slhc/materials.science/saunders-writing.html>

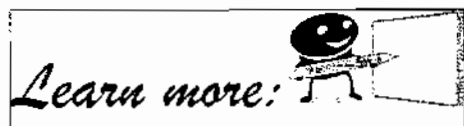
We choose Text \_\_\_\_\_ because:

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Writing for Science and Technology Students, Effective Learning, SLDC  
<http://www.lancs.ac.uk/celt/slhc/materials/science/science.htm>

### Task 3: Write precisely - Academic Vocabulary

a. You should use precise words rather than basic words such as **good** and **bad** in your writing. You should also use cautious language when expressing negative ideas.

Each sentence contains an inappropriate word or phrase in *italics* and in brackets. Replace it with a more suitable word from the list below.

sizeable	stimulating	minor	significant	questionable
senior	unacceptable	controversial	disappointing	affordable

1. Pollution is a \_\_\_\_\_ (*big*) problem in Hong Kong.
2. Living conditions in some housing developments are \_\_\_\_\_ (*horrible*).
3. The influence of computer games on young people is a \_\_\_\_\_ (*hot*) topic.
4. Mark's performance in the examination was \_\_\_\_\_ (*bad*).

5. She received a \_\_\_\_\_ (*big*) sum of money from the insurance company.

6. Chan's (2001) method of investigation is \_\_\_\_\_ (*wrong*).

7. The company's \_\_\_\_\_ (*cheap*) products have proved to be very popular.

8. A number of \_\_\_\_\_ (*old*) members of staff have left in recent years.

9. Professor Yau's new book is very \_\_\_\_\_ (*good*).

10. This is a \_\_\_\_\_ (*small*) detail, which I think we can discuss another time.

Source: 'Precise Words', Writing, CILL, PolyU <http://elc.polyu.edu.hk/cill/eap/2004/u6/pg137ex3precisewords.htm>

**b. Substitute a single verb for the underlined words in italics below:**

1. Plans are being made to *come up with* a database containing detailed environmental information for the region.
2. Proposals to construct new nuclear reactors have *met with* great resistance from environmentalists.
3. Subtle changes in the earth's crust were *picked up* by these new instruments.
4. The process should be *done over* until the desired results are achieved.
5. The temperature *went down* quickly from 97.5°C to 26.3°C in 5 minutes.
6. All these *make up* destabilizing factors.
7. This experiment was *carried out* to measure the global temperature change over the past decade.
8. We *put forward* this theory to explain the current phenomenon.
9. The experiment *was made up of* 3 parts, namely A, B and C.
10. In Section Four, we will *go into* the causes of the experiment results.
11. Therefore, we can *draw a conclusion* that Quantum Physics is the most successful theory for answering these questions.
12. Scientists are *conducting an investigation* into the cause of the accident.



- McCarthy, Michael, O'Dell, Felicity, *Academic Vocabulary in Use*. CUP, 2008
- **The Academic Word List**, Victoria University of Wellington
- The Academic Word List was developed by Averil Coxhead. The AWL was primarily made so that it could be used by teachers as part of a programme preparing learners for tertiary level study or used

by students working alone to learn the words most needed to study at tertiary institutions.

<http://www.victoria.ac.nz/lals/resources/academicwordlist/>

- **University Vocabulary Trainer**

The UVT is funded by the Hong Kong Government's Language Fund and developed at the Language Centre of the Hong Kong University of Science and Technology.

<http://uvt.ust.hk/about.html>

- **Academic Vocabulary**, PolyU (Academic Word Lists, definition, example sentences, pronunciation, Chinese translation) <http://elc.polyu.edu.hk/cil/EAP/wordlists.htm>

- **Academic Style** (interactive language activities), University of London

[http://www.llas.ac.uk/materialsbank/mb105/Academic\\_Style.html](http://www.llas.ac.uk/materialsbank/mb105/Academic_Style.html)

- **Academic Vocabulary Quizzes**, ESLgold.net

[http://www.eslgold.com/vocabulary/academic\\_quiz.html](http://www.eslgold.com/vocabulary/academic_quiz.html)

- **UsingEnglish.com - Phrasal Verb Quizzes**

<http://www.usingenglish.com/reference/phrasal-verbs/quizzes.html>

#### Task 4: Write concisely – Avoid wordiness

##### a. Use of Prepositional Phrases in Academic Writing

Use a Prepositional Phrase (Prep + NP) to express the less important idea in academic writing.

e.g. Labour cost is rising and manufacturers have to relocate their factories to places where there is cheaper labour. (Because of)

>> Because of rising labour cost, manufacturers have to relocate their factories to places where there is cheaper labour.

- 1) We have done a study and found that there is probably no relationship between gender and life satisfaction. (According to)

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- 2) The study has some shortcomings but it is still a respectable pioneering effort. (In spite of)

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3) We finally obtained the assistance of the Department of Census and Statistics and we were able to use an up-to-date sampling frame from which to select our sample. (As a result of)

4) Many Asian countries are facing economic downturns. However, China's economy has recorded phenomenal growth for at least three consecutive years. (In contrast to)

5) Our project proceeded relatively smoothly because we paid great care and attention to details. (With)

#### b. Use of Participle Phrases in Academic Writing

A participial phrase contains a participle, i.e. a verb in *-ing* or *-ed* form. The subject of such a phrase is usually a noun or pronoun in the main clause. The phrase can be made negative by placing *not* or *never* before the participle. There are four main types of use of participial phrases:

i) General form: active voice >> Use the *-ing* present participle. (Time intended is shown by the verb in the main clause.)

e.g. *Comparing the two views*, you will see that neither has a clear advantage over the other.

1) I believed we had to proceed as planned if we took all these reasons into consideration...

2) He is a prejudiced person who refuses to listen to opinions different from his.

ii) General form: passive voice >> Use the **-ed** past participle. (Time intended is shown by the verb in the main clause.)

e.g. **Compared with secondary groups**, primary groups are more lasting and expressive.

3) She was not discouraged by unfamiliarity with a strange culture and she tried her best to adapt herself to her new surroundings.

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iii) Perfect form: active voice >> Use the **-ed** past participle. (Time in the participial phrase precedes that shown in the main clause.)

e.g. **Never having lived away from home**, the new students probably felt homesick.

4) We have discussed the similarities between sociology and anthropology in Section One. Next we will examine their differences in Section Two.

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iv) Perfect form: passive voice >> Use the **-ed** past participle. (Time in the participial phrase precedes that shown in the main clause. )

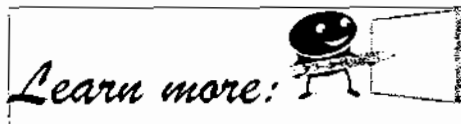
e.g. **Having been trained to identify unspoken messages**, she is a competent interviewer.

5) I had not been told of the duration of the study. So I was unable to decide if I could accept it.

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(Adapted from *Effective Writing* by Pedro Pak-tao Ng, 2003, pp. 286-8)



- Wordiness: ways to avoid it, University of Toronto  
<http://www.writing.utoronto.ca/images/stories/Documents/wordiness.pdf>
- Writing for Scientists, Effective Learning, SLDC  
<http://www.lanccs.ac.uk/celt/sldc/materials/science/report.html>

- *Effective Writing* by Pedro Pak-tao Ng, CUHK, Appendix 7 “Writing Clear and Effective Sentences”.

### Task 5: Exercise on Style in Scientific Writing

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This exercise requires that you identify the main stylistic problem in each excerpt. Given in Table 1 is a list of common stylistic errors that the excerpt may contain. Given in parentheses are page numbers in *The Craft of Scientific Writing* (Michael Alley - <http://www.writing.engr.psu.edu/csw.html>) explaining each problem.

Table 1. List of Common Stylistic Errors

Non-parallel headings (37-40)	Needlessly complex words (84-85)
Weak transition into section (53)	Needlessly complex noun phrase (85-86)
Ambiguity from missing punctuation (94-96)	Needlessly complex sentence (86-90)
Ambiguity from pronoun (93-94)	Lack of sentence variety (129-137)
Ambiguity from word order (92-93)	Tone problem (97-101)

1:

Discharges of these hazardous substances occur through spills when loading vehicles, spills and over-spills when filling the tanks, leaks from supply pipes and pipe joints, rust holes and cracks in the seams of the tanks themselves.

2:

The design of the circuit is shown in Appendix A. The first schematic of the Appendix shows the interface of the EEPROM with the HC11. The decoder and the bit latch were also needed for this circuit. The decoder made sure that the EEPROM responded to address locations \$6000 to \$7FFF. The latch stored the address lines for the EEPROM when Port C on the EVBU switched from output address lines to input data lines. These integrated chips worked together to give the HC11 the expanded memory.

3:

Report Title: **Loading Dock Boxcar Stop Viscous Damping Values**

4:

**Standalone Operation.** This involved both hardware and software...

5:

The objective of this endeavor is to develop a commercialization strategy for solar energy systems by analyzing factors impeding early commercial projects (i.e.,

SOLAR ONE) and by identifying the potential actions that can facilitate the viability of the projects.

6:

It has come to my attention that your sport utility vehicles are not as technologically advanced as they could be! Microprocessors are more than just a booming technological buzzword; they are something that can be seamlessly implemented into existing vehicles and will add countless dimensions to their capabilities...These are of course tiny examples in a grander scheme of things that can be accomplished with microprocessors. There are much more useful and innovative things that could be done to improve both the mechanical and ergonomic aspects, which would put you light-years ahead of your closest competitors, all the while fattening your pockets...I enthusiastically look forward to meeting with you!

7:

Enormous mining companies are both continuing operations at old gold mines, such as the case of the Homestake Mine in Lead, South Dakota, which has operated continuously since 1877 and is continuing to increase its operations [Hinds and Trautman, 1983], and opening new gold mines, often in very disturbing locations, such as the proposed, and for now, postponed, New World Mine, whose proposed location was about 2.5 miles from the border of Yellowstone National Park, near Cooke City, Montana.

8:

Most people are diagnosed with phenylketonuria at birth.

9:

Since the invention of the catalytic converter, one problem that has baffled people involved with emission control is their lack of effectiveness in oxidizing CO and HC until the engine is warm.

10:

**Procedures for Design.** The procedures for this part of the laboratory began with the ASM command. This command was used to disassemble code. This disassembly began at the specified memory address. This command was useful in examining the code predefined by the Buffalo Disassembler. The "ASM" command was used at the start of address \$E000. It listed the first three instructions at location \$E000. Table 1 shows both the machine code and the disassembled code for these instructions.



11:

To provide spill protection all tanks were to include catchment basins and automatic shutoff devices or overflow alarms or ball float valves.

12:

### **Introduction**

### **Background**

#### **Origin of Computer Viruses**

#### **Destruction by Computer Viruses**

#### **Example (Burlison Virus)**

#### **Barriers to Computer Viruses**

#### **Physical**

#### **Antiviral Barriers**

#### **Conclusions**

#### **Recommendations**

13:

Each time we wired the hex display, we placed it in a different location on the bread board. Unfortunately, each time the hex display would show a different reading. The third time proved to be the charm as the hex display read all of the numbers correctly.

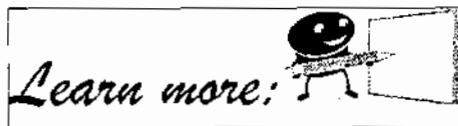
14:

Interfacing the Matrix Keyboard. Here, a 4x4 matrix keypad and TIL-311 hex display to be added to the hardware wired in the previous section.

15:

Report Title: Vertical Linear Actuators Position Measurement and Repeatability  
NIF Bottom Loading Insertion System Test Procedure

Source: Writing Exercises for Engineers and Scientists <http://www.writing.engr.psu.edu/handbook/exercises/exercise1.html>



### *Academic Writing for Science Students* - Useful links and suggested reading

- Writing about Physics (and other sciences), University of Toronto  
<http://www.writing.utoronto.ca/advice/specific-types-of-writing/physics>
- Writing for Science and Technology Students, Effective Learning, SLDC  
<http://www.lancs.ac.uk/celt/slhc/materials/science/science.htm>

- Guidelines on Style for Scientific Writing, University of Otago, New Zealand  
<http://www.sportsci.org/jour/9901/wghstyle.html>
- Writing in Science and Engineering, The University of New South Wales (UNSW)  
<http://www.lc.unsw.edu.au/olib.html#6>
- M. Ashby, How to write a paper. Check list of activities + examples of good and poor paragraphs in scientific papers. [http://intranet.cs.man.ac.uk/Intranet\\_subweb/PhDWeb/CS710/ashby.pdf](http://intranet.cs.man.ac.uk/Intranet_subweb/PhDWeb/CS710/ashby.pdf)
- Writing Resources on the World Wide Web (includes advice on technical writing), Massachusetts Institute of Technology <http://web.mit.edu/uua/www/writing/links/>
- Writing Skills Online (includes Writing in Science), James Cook University  
<http://www.jumbunna.uts.edu.au/enrolledstudents/academicresources.html>
- Academic Writing, Study Skills Pack <http://www.worc.ac.uk/movingon/Academic%20writing.pdf>
- Writing Studio, Duke University (various kinds of useful handouts for academic writing)  
<http://uwp.duke.edu/wstudio/siteindex.html>

## Report Writing

- Lab Reports: Virginia Tech. <http://www.writing.eng.vt.edu/workbooks/laboratory.html>
- Academic report writing: science and engineering subjects, The University of Sydney & UNSW  
<http://www.usyd.edu.au/learningcentre/wrise/>
- Writing UG lab reports, UNSW <http://www.lc.unsw.edu.au/onlib/labrep.html>
- Writing the report, University of Southampton <http://www.studyskills.soton.ac.uk/develop.htm>
- Report Writing, Polytechnic University, HK <http://elc.polyu.edu.hk/CiLL/reports.htm>
- Online Technical Writing - Online Textbook (includes different types of Technical Reports)  
<http://www.io.com/~hcexres/textbook/>
- Specific Types of Writing (includes Lab Reports), University of Toronto  
<http://www.writing.utoronto.ca/advice/specific-types-of-writing>
- Lab Reports, <http://www.canberra.edu.au/studyskills/writing/reports>

## Referencing

- Citing Sources. Referencing and Avoiding Plagiarism, Monash University Library  
<http://www.lib.monash.edu.au/tutorials/citing/>

## Academic vocabulary and grammar development

- Academic phrases: <http://www.phrasebank.manchester.ac.uk/>
- Useful vocabulary: <http://elc.polyu.edu.hk/cill/eap/wordlists.htm>
- Freeware to help correct your writing: <http://mws.ust.hk/mw/account/login.php>
- Academic vocabulary: <http://uvt.ust.hk/>
- Grammar: <http://www.uottawa.ca/academic/arts/writcent/hypergrammar/>
- Dictionary: <http://www.wordreference.com/>
- Physics terms: <http://www.emanuelschool.org.uk/physics/physite/index.htm>
- Academic Style: [http://www.llas.ac.uk/materialsbank/mb105/Academic\\_Style.html](http://www.llas.ac.uk/materialsbank/mb105/Academic_Style.html)

## Communication in Science

- Invest in your key skills: [http://www.rsc.org/education/teachers/learnnet/Getting\\_message.htm](http://www.rsc.org/education/teachers/learnnet/Getting_message.htm)
- G. D. Gopen and J. A. Swan, The Science of Scientific Writing, *American Scientist*, Nov-Dec 1990, 78:550-558. <http://www.docstyles.com/archive/ascience.pdf>