**Numbers, Units and Mechanics**

**Post-Class Activities**

Following the pre and in-class activities that focused on the correct use of numbers, units, abbreviations and mechanics in writing, you should be feeling more confident about getting your style right with regard to these important components.

As ever, your primary goal when communicating science to any audience should be to tell an interesting story in a way that is easily understandable. These post-class activities have been designed to give you specific practice in capitalizing words correctly, and in working more with units and grammatical mechanics.

**Using Capitals Effectively**

It can be hard to learn when you should (and should not) capitalize certain words in your writing. The following list includes a few of the most important, common rules that you should always try to apply:

**1:** Capitalize the first word of a new sentence, or quote, but **not** if it follows a semicolon or colon. Do **not** capitalize the first word in the second part of an open/divided quote (e.g. Learning cellular processes is difficult; there are so many names and theories involved).

**2:** Capitalize people’s names, but titles **only** when they come before those names (e.g. Michelle Richards is a professor).

**3:** Capitalize points of the compass **only** when referring to specific geographic places (e.g. Northwest Territory, and northern Canada).

**4:** Capitalize proper nouns and place names, but **not** seasons (e.g. Vancouver General Hospital is situated just off Broadway in Vancouver).

**5:** Capitalize the titles of publications, in print, online, and in video (e.g. New Scientist).

**6:** Capitalize the names of specific academic courses but do **not** capitalize non-specific topics or subjects (e.g. I really enjoy history).

**Question 1 (5 marks)**

There is **one** capitalization-based error in each of the **five** sentences below. Try to find the error in each sentence before re-writing it correctly. Copy and paste the sentences and **bold** the **five** changes you have made (1 mark for each correct change).

1. The Street next to Rogers Arena is called Abbott Street.
2. The current President of UBC’s Undergraduate Chemistry Society is President Michael Acceptor.
3. Another UBC society had a movie night last November but did not show March of the Penguins, which shows how the penguins’ march to sea gets easier by march each spring.
4. Chemistry and Biology would be useful subjects to know in some detail if you were a palaeontologist looking for fossils in Africa.
5. In the famous movie, Jurassic Park, Dr. Ian Malcolm hilariously pointed out the difference between this theme park and others. “If the Pirates of the Caribbean breaks down,” he said, “The pirates don’t eat the tourists.”

**Using Plurals with Capitals and Units**

Another difficult combination of mechanics rules to learn incorporates the mixing of rules dictating capitalization, pluralization, and the basic punctuation around numbers and units that you commonly use in scientific communication. For example:

**1:** You should include a space between a number and unit (20 m), but **not** if the unit is a degree (180°) or a percentage (55%).

**2:** You should **not** pluralize units (20 kg, not 20 kgs) unless you also write out the number (eight kilograms).

**3:** You should **not** capitalize unit names (centimetres, not Centimetres) unless you are talking about Celsius or Fahrenheit (because these two are named after scientists).

As ever, remember that consistency is everything; this is why it is acceptable to use numbers when using units, but why you should instead write them when writing out the units in full (5 m or five metres).

**Question 2 (5 marks)**

There are **five** numbers and/or mechanics-related errors in the following paragraph. Try to find the errors and re-write them correctly. Do this by copying and pasting the paragraph before **bolding** the changes that you have made (1 mark for each correct change).

When completing our lab safety induction, my partner and I had to make various measurements of our equipment. Our lab bench stands at a height of 94cm, and it is approximately six m long. Our lamp weighs just over 3 kgs, and is so strong that the heat from it increased room temperature by 2.1 %, to 16.8° celsius, after just 30 min.

**Using Commas Effectively**

As you improve as a science communicator, you are certain to develop greater skills in using grammatical mechanics correctly in your writing. You probably already use commas very frequently, but it can still be hard to always use them appropriately. If you fail to use a comma when there should be a natural pause in a sentence, like here, your readers will be confused; however, if you overuse commas, your readers will be equally baffled as to what you are trying to tell them.

**Question 3 (5 marks)**

Read the paragraph below, which comprises five sentences. Your task is to decide whether each of these sentences requires a comma or not. Copy and paste the paragraph and add in commas where you think they belong (1 mark for each sentence). *Hint: Not all sentences require a comma, and no sentences require more than one. You will gain 1 mark for each sentence in which you place a comma correctly, and 1 mark for omitting a comma from a sentence that does not require one.*

Ideally doctors should speak slowly and calmly to patients when they first wake up following surgery. At least until good news can be delivered that is. In these instances it would be acceptable to use some humour. Connecting to patients in a personal way is a very important goal for any doctor. Despite this maintaining a professional stance is always crucial.

**Using Hyphens Correctly**

*Remember the video that you watched about hyphenation on the ‘UBC Science Writing’ YouTube channel (see:* [*http://www.youtube.com/watch?v=ZRV8Y13xSgI*](http://www.youtube.com/watch?v=ZRV8Y13xSgI)*).* As the video showed, you should only use hyphens between the words that are meant to act as single adjectives in a sentence, which is why it matters whether you write “I saw a man-eating rabbit” or “I saw a man eating rabbit.”

**Question 4 (5 marks)**

Read the paragraph below. Your task is to place **five** hyphens throughout the paragraph where they are needed (1 mark for each correctly placed hyphen). *Hint: There are five hyphens (in total) that should be added; you could need to link two or more words together with each one.*

A six week summer chemistry program designed to teach high performing youngsters to think more critically about science has been successful in developing their attitudes. Using a recently developed questionnaire, students were classified on a scale ranging from naïve to expert based on the way they answered different prompts. Before the program began, the majority of these students, who were all eight year olds, provided naïve answers; however, after completing the program, they provided expert like answers much more frequently.

**Question 5 (5 marks): Putting It All Together**

To answer the following question (scenario), write just **one** sentence that incorporates all the information included in Table 1 (below). Remember to follow all style-based rules and try to write the sentences in an engaging, simple way.

**Table 1: You must write one sentence that incorporates all the elements in the Q5 scenario.**

***Hint: every element has been written in words in the table, but you might need to change the styles appropriately in your sentences/stories. Don’t worry too much about the content of your sentence; you can make it up as long as your sentence reads well and shows your command of mechanics skills.***

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| **Question**  **(Scenario)** | **Organization or company** | **Focus of sentence** | **Measurement (size and units)** | **Mechanics to include** |
| **Q5** | The American Chemical Society  (1 mark) | There is a concern that there will be a lack of helium soon in the US (1 mark) | US supplies could be reduced by fifty per cent by 2014 (1 mark) | Hyphen,  comma  (1 mark each, 2 marks total) |