

Preparing an Amplified Abstract

For all but two of the exercises in this course, you will be asked to produce an amplified abstract as a record for grading purposes. This consists of a standard one-paragraph summary abstract (Pechenik) with attached figures as documentation. The abstract should contain elements from all of the parts of a laboratory report:

1. Title. Make sure your title is sufficiently descriptive of the variables manipulated, the response and organism (and/or portion thereof) observed, etc.
2. Author. Your name, campus address, email address, and telephone number should appear so that I may contact you if needed. If you worked with a lab partner, her/his name should also appear here.
3. The first sentence or so INTRODUCES the topic of the investigation. The question asked or the hypothesis tested should appear here too.
4. The next few sentences *briefly* describe the METHODS used. What variable was manipulated and how, what was measured and how, etc.?
5. The next several sentences (perhaps $\frac{2}{3}$ of the writing) present the RESULTS of the study. The most important findings (eg.: “The reaction rate increased 3-fold with the addition of 1 N NaCl.”) are mentioned in some detail. Do not list **all** of your observations, only the **important** ones.
6. The concluding few sentences DISCUSS the importance of the findings, especially in terms of answering the question or testing the hypothesis or model.

The abstract is usually no longer than 15 sentences. It should be typed/computer-printed double-spaced on a single page with at least 1 inch margins all the way around. The type should be 12-point in size. The writing should be clear and concise! No extra verbiage is allowed. The use of active voice will save space (“heat increased the rate” vs “the rate was increased by heat”). Fuzzy thinking generates fuzzy writing, but fuzzy writing does not communicate clear thinking either. In the end, the abstract should be easy to read, should “make sense” to any person with a college science background, and should be mostly informative.

The attached figures are the amplification for the abstract. They should follow the standard guidelines and should be sufficiently descriptive in the legends to be understood easily without supporting text. Each numbered figure and its legend must be presented together on a single sheet. The abstract and figures must be on plain white paper. The figures should be in sequence after the abstract. The pages should be stapled in the upper left corner. Do not submit in covers, folders, or binders.

The completed amplified abstracts are due one-week from the date that the last data are collected. Late abstracts will receive penalties of 10% per day late...so turn these in promptly. Early submissions are encouraged.

Common Problems Observed in Amplified Abstracts

1. Words:

Lab is an abbreviation for **laboratory**, a room...not a project nor a study.

Experiment is a comparison of a manipulated situation with an unmanipulated control. Some projects are not experiments.

Proof and **proven** are seldom useable because of error due to chance alone; **evidence** or **support** are better words to use...they admit the presence of chance error. For most of science, it is best to delete **proof** from your vocabulary.

It's is a contraction of **it is**; we never use contractions. **Its** means **belonging to it** and could be used.

Look for the subject of the sentence...are you sure it is capable of doing the verb? **You** did the observing, **you** did the examinations, **exercises** and **studies** are inanimate objects.

Submerged and **immersed** are not synonyms...be sure to use the right one.

Affected vs **effect**. Use **increased/decreased** rather than **affected**; do not use **affect** ever.

Effect is a result of some treatment; never use **effected**. So of these commonly confused words, use only **effect**...nothing else.

Then vs **than**. **Then** relates to time sequences--**than** compares two items.

Use standard units...**mL**

You measure the absorbance of **solutions**, not **tissues**!

Two, to, too many problems!

Plants do not have conscious thought.

2. Abstract form

The title should be more than two words; it should tell what was examined and in what species, etc.

Do not use multiple paragraphs; an abstract is ONE paragraph only.

Keep each part of a project together (method, result, discussion) and present the parts in the best sequence to lead to a general conclusion sentence or two.

Abstracts never have figure calls: neither (Fig. 1) nor (see in attached figures).

You do not have to slavishly stick to the sequence of projects in the worksheets. It is likely that a different sequence/organization will tell the story of your work in a clearer/better way. Follow a natural sequence!

Tell about the tissue used...root, stem, leaf, etc.

Avoid giving data in the abstract...let the supporting figures do that job.

The ending...what did you learn about membrane structure?

If you do not do the calculations, you cannot tie the parts together.

Must understand basic mechanism of project before you can write about it.

3. Amplifying Material

Diagrams should show one cell or structure optimally rather than showing many cells or structures poorly.

All diagrams should be completely labeled; certainly any item mentioned in the abstract should be shown in the figures.

All true experiments should have support for both the manipulated situation and the control in the figures and tables.

All experiments mentioned in the abstract need support in the figures and tables.

Separate experiments in charts so that one experiment, by virtue of scale, does not obscure a more subtle one.

In bar charts be sure the sequence of bars is "natural."

Never use tube numbers.

Always use a straight-edge with hand-drawn figures.

Get dependent, independent variables correct on plots.

Raw data are graphs OK, but rate/summary graphs/tables are needed, support calculations shown, legends present.

Pechenik, J. A. 2004. A short guide to writing about biology. 5th ed. Addison Wesley Longman. Boston.