**Peer Review Guide** (see also this helpful page: <https://plos.org/resource/how-to-write-a-peer-review/>)

Your review should be in three parts, each successively more specific.

**First**, a brief summary of the paper’s aim and your impression of its overall success. This is where you put your big-picture impression of the paper as a whole.

**Second**, the major issues with the paper. You should, **at a minimum**, address:

(1) is the hypothesis being tested *interesting* and *evolutionary*? Is it *novel*? Double-checking their cited literature (even just a quick skim) to confirm that they’re not replicating too closely something already done is very helpful. It’s easy to accidentally re-invent the wheel since the data are (for most of you) coming from previously published sources. **This paper is not a review or summary**. It should be focused on the results the author found, and not dwell too much on other papers. Referencing other papers and findings is good, but a paper that is *too* referential, a paper that doesn’t stand on its own, is not the ideal.

(2) are the data as-described appropriate for testing the hypothesis? That is, if the author says that they’re testing the effect of ecology on fitness, and their data are the location of a bird’s nest and how fast the bird can fly…that doesn’t really match. Both of those are loosely related to ecology and fitness, sure, but you can’t directly test it with those data at all.

(3) are the data *really* how they’re described (e.g., if I write that I’m testing body size, but I’m really using the length of the femur, does that change the stated interpretations of the analyses?) Double-checking that their sources describe their data as-is is a particularly helpful thing to do here. **Do the graphs make sense** is probably the biggest thing here. I would recommend looking at the graphs first, thinking about them, then reading the text. Don’t necessarily trust p-values—unless you have a really firm grasp of the exact statistical mechanics behind each test done, trust your instincts from the graphs. Graphs > pvalues.

(4) are the analyses appropriate? That is, did the writer use their data in a manner that truly tests their stated hypothesis, or are there some problems either with implementation or interpretation?

(5) are the interpretations correct? Did the writer correctly interpret their graph(s) and statistical test(s), or are they drawing unsupported conclusions? Are there unaddressed issues?

All data sets are flawed. As are all statistical analyses! If the author discusses weaknesses in their approach, that is ***good***. But if there are weaknesses that they’ve overlooked, your job is to point those weaknesses out to them so that they can either correct the weakness (if possible), or explain how any such weaknesses might impact their interpretation of their results.

**Third**, any specific issues that you see. Are there sentences that don’t make sense? Which ones (**use line numbers!**) Are there typos? Are there individual places where the author makes conceptual leaps that aren’t quite backed up by the data? This third area is where you let the author know any individual places that need to be adjusted. This is the least important of the three parts.

Finally, remember that the author of your paper is going to read what you write! The only thing I’ll remove is your name. They won’t know who wrote it, but everyone in this class has worked hard.

Be kind, be respectful, and be helpful.

**Your (Reviewer) Name:**

**Name of Author:**

**Summary**

**Major Issues**

**Specific Issues**