



| Conflicts | Solutions or Workarounds |
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| Students pick question that requires more sophisticated analysis that is feasible | Let them do a “not best practice” test so they get to analyze, and learn what the more appropriate analysis would be (while not having to do it) or do analysis for them |
| Each group does a chunk of the work, but some groups do better/more work than others / uneven progress / data quality | Check ins with groups to help groups, set milestones, design so groups don't rely directly on each other such as different species rather than time periods |
| Group not able to get enough data about particular species | Shift from comparing goal to goal re reflecting on limited datasets, compile data across terms, use data from another group |
| Team goes through the process but realize they can't do the analysis | Switch to emphasizing process / what was accomplished and why it had value, pull data from another location / team |
| Quality of data – students might not have developed skills yet, but research relies on high quality data (identify errors, assess reliability) | Include group work that includes technical replicates to internally check each other, include redundancy between groups, across terms, across institutions. Spend more time training, performance assessment, select threshold for repeatability index |
| Motivation concerns | Emphasize why the question is interesting and relevant, revisit, what their roles is |
| Students get discouraged when they don't meet performance criteria | Bring back alums / peers to normalize the struggle, tell your own story about struggling with techniques, failures, emphasize practice, include self-checks so failures are less embarrassing, leave time for practice, growth mindset – how to get good at something! |
| Negative results are perceived as poor performance | Emphasize that we learn something from negative results |