PEP 2024 Class Skills Rubric

The table below shows the skills we are going to work on in this class. For each skill there are three levels of engagement:

- Level 1: Awareness and understanding
- Level 2: Application of skill
- Level 3: Advancement of skill

My goal is for you to take some time at the start of the class to identify your current comfort level with each of these skills so we can set reasonable expectations for how you can level-up your work.

The **Core Skills** are areas that we are all going to be working on together and will culminate in specific deliverables that you will draft and edit over the course of the class. Your self-assessed entry point will determine what kind of level-up we can achieve - it will be my expectation that you will all be able to get to Level 2 in all skills, but some may be leveling-up further.

For **Focus Areas**, everyone will be exposed to Level 1 for each of these skills, but you will decide on one or two that you want to focus your learning on. You will then work over multiple weeks to build this skill set and level-up as far as you can.

Right now, you should:

1. Review each row of both tables below, read the description and ask any questions you have
2. For each row of each table, you should tick the box that you feel confident you would be able to do right now. This is not a test, just an honest self-evaluation of where you're at. If you feel like you wouldn't be able to do L1 in any skill right now then tick the L0 box.
3. Discuss this self assessment with your research mentor and get their input on where you have placed yourself. Discuss the Focus Areas and tick two that you think would be most relevant in complimenting the work you are doing this summer.

Core Skills	**L0**	**L1**	**L2**	**L3**
You and the community	☐	☐ Can describe some of the specific research that is undertaken in Woods Hole and the basic mechanics of how this research is conducted.	☐ Can respond to researchers through engagement with new research topics and have the confidence to ask genuine follow-up questions	☐ Can use these interactions and knowledge of yourself to create ideas for possible career pathways and next steps.
Scientific Abstract	☐	☐ Can describe what a scientific abstract is and draft key bullet points from your research that might go into one.	☐ Can synthesize key information into a properly formatted abstract for publication.	☐ Can make a clear case for the importance of the research and edit the text for clarity and concision.
Oral Presentation	☐	☐ Can describe the basic elements of a scientific conference presentation. Can organize simple ideas on slides with bullet points	☐ Can organize presentations from large context to specific details. Can reduce reliance on on-screen bullets, use relevant imagery and deliver from limited notes if needed.	☐ Can build a talk that makes a clear case for the importance of the topic, what is known, and what is still unknown. Can create appealing, custom slides and present engagingly without notes.

Focus Areas	L0	L1	L2	L3
☐ Literature Search	☐	☐ Can interpret the basic structure of a research paper. Can determine which parts of a paper to read to find relevant information	☐ Can search and find relevant papers on a topic, extract key information from them, and combine in an annotated bibliography.	☐ Can analyze the papers gathered to determine which are most relevant to a research question. Can combine to form a mind map that accurately describes what is, and what isn't, known on a topic.
☐ Visualization through coding	☐	☐ Can describe the need for coding for visualization and analysis in science. Can read in data to R and make a simple x-y plot.	☐ Can make multiple plots and add complexity by plotting numerous data on the same figure using colors or shapes.	☐ Can create more complicated plots including cross-sections and maps, and revise plots for clarity.
☐ Data Design	☐	☐ Can describe some key design considerations for figures and suggest improvements to existing figures	☐ Can edit a plot in R for design elements such as scales, labels, and themes	☐ Can add a combination of these design elements to a plot and review multiple trials to determine the best outcome
☐ Research Poster	☐	☐ Can describe best practices in design as relates to creating a research poster	☐ Can draft a scientific poster with clear sections, well placed graphics, and appropriate font sizes	☐ Can incorporate more sophisticated design elements such as feature images, using layout tools, color scheming, borders, uniformity of margins, photo cropping, etc.
☐ Science Storytelling	☐	☐ Can describe why it is important to communicate science with the general public and analyze some examples for success in communication	☐ Can create a simple, short public communication story in written, drawn, video, or radio format	☐ Can refine story using compelling hooks and more complicated narrative elements to make the story engaging

Any other comments? Other focus areas you think would be useful to develop for this summer and beyond?