

- Choose **ONE** practice from the the S&EP chart below that you used during the week and provide **specific examples** that demonstrate your growth towards mastery in the practice. The Science and Engineering practices describe behaviors that scientists engage in as they investigate and build models and theories about the natural world and the key set of engineering practices that engineers use as they design and build models and systems.

<u>The Practices</u>	<u>Choose this practice when you can answer “YES” to this question:</u>	<u>Your sentence frames are:</u>
SP1: Asking questions and defining problems A basic practice of the scientist is the ability to formulate empirically answerable questions about phenomena to establish what is already known, and to determine what questions have yet to be satisfactorily answered.	Did you ask a scientific question?	- I formulate testable questions when I ... - I established what is already known about ... - I determine what questions have yet to be answered when I ... - I defined constraints and specifications for a solution as I ...
SP2: Developing and using models Models make it possible to go beyond things you observe and simulate a world not yet seen. Models enable predictions of the form “if...then...therefore” to be made in order to test hypothetical explanations.	Did you build a model, draw a picture, created a concept map, etc?	- I constructed physical, mental or conceptual models to represent and understand phenomena when I ... - I used models to explain and predict behaviors of systems, or test a design as I ... - I refined/rebuild my model as I learned about ...
SP3: Planning and carrying out investigations A major practice of scientists is planning and carrying out systematic investigations that require clarifying what counts as data and in experiments identifying variables.	Did you plan and carry out an investigation?	- I identified questions to be investigated when I asked ... - I identified my variables and controls, which were ... - I designed and performed experiments to test my hypotheses. I thought that ..., and proved ... - I decided to collect ... (data). I also chose to control ... because ... - I refined my experiment when the data I obtained did not answer the question, when I ...
SP4: Analyzing and interpreting data Scientific investigations produce data that must be analyzed in order to derive meaning.	Did you create a graph, table, drawing, etc. of the data you obtained in an experiment?	- I used tables, graphs, spreadsheets, etc. to display and analyze data. (attach the graph, chart, spreadsheet) - I recognized patterns in data and see relationships between variables. For example, I observed that ... - I revised my initial hypothesis when the data doesn't support it. My original hypothesis was..., but new hypothesis is ...

		I used data to analyze the performance of a design under a range of conditions. I changed in my original design to because
SP5: Using mathematics and computational thinking Mathematical and computational approaches enable prediction of the behavior of physical systems along with the testing of such predictions.	Did you perform any math calculations?	- I used mathematics and statistics to analyze data when I ... - I expressed relationships between variables by writing mathematical models or equations. For example, I used - I use technology to collect and analyze data. Here is an example of the spreadsheet I created....
SP6: Constructing explanations and designing solutions The goal of science is the construction of theories that provide explanations about the natural world. explanatory power.	Did you explain something through your work?	- I evaluated information to explain ... and form hypotheses. - I constructed an explanation of ... when I - I designed a solutions to a problem when I ...
SP7: Engaging in argument from evidence In science, reasoning and argument are essential for clarifying strengths and weaknesses of a line of evidence and for identifying the best explanation for a natural phenomenon.	Did you participate in a class discussion providing evidence for your answers, and/or used the ACE strategy in your work?	- I use evidence to defend my explanation. I answered ... providing ... as evidence. - I formulated evidence based on solid data when I stated ... using ... as evidence. - I examined my own understanding in light of the evidence. I used to think that ..., but because of ... now I think that ... - I collaborated with my peers in searching for the best explanation. I did some research on ... which I discussed with ... Together we figured out that ...
SP8: Obtain, evaluate and communicate information A major practice of science is to communicate ideas and the results of inquiry—orally; in writing; with the use of tables, diagrams, graphs and equations; and by engaging in extended discussions with peers.	Did you research something, used the CITE-IT strategy and then “told” the class about it? OR Did you present something to the class?	- I communicated findings clearly and persuasively when I presented ... - I used scientific text to find important. information, evidence and ideas. I read about on This led me to understand that - I engaged in discussions with scientific peers. As I was researching... I communicated my new ideas about to ... He/she then responded that - I evaluated the validity of the findings of others. I read that ..., but then I also found out that... These two ideas agree/disagree with each other, so now I think

