Science Practice 1: The student can use representations and models to communicate scientific phenomena and solve scientific problems.

1.1 The student can create representations and models of natural or man- made phenomena and systems in the domain.
1.2 The student can describe representations and models of natural or man-made phenomena and systems in the domain.
1.3 The student can refine representations and models of natural or man- made phenomena and systems in the domain.
1.4 The student can use representations and models to analyze situations or solve problems qualitatively and quantitatively.
1.5 The student can reexpress key elements of natural phenomena across multiple representations in the domain.

Science Practice 2: The student can use mathematics appropriately.

2.1 The student can justify the selection of a mathematical routine to solve problems.
2.2 The student can apply mathematical routines to quantities that describe natural phenomena.
2.3 The student can estimate numerically quantities that describe natural phenomena.

Science Practice 3: The student can engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course.

3.1 The student can pose scientific questions.
3.2 The student can refine scientific questions.
3.3 The student can evaluate scientific questions.

Science Practice 4: The student can plan and implement data collection strategies appropriate to a particular scientific question.

4.1 The student can justify the selection of the kind of data needed to answer a particular scientific question.
4.2 The student can design a plan for collecting data to answer a particular scientific question.
4.3 The student can collect data to answer a particular scientific question.
4.4 The student can evaluate sources of data to answer a particular scientific question.

Science Practice 5: The student can perform data analysis and evaluation of evidence.

5.1 The student can analyze data to identify patterns or relationships.
5.2 The student can refine observations and measurements based on data analysis.
5.3 The student can evaluate the evidence provided by data sets in relation to a particular scientific question.

Science Practice 6: The student can work with scientific explanations and theories.

6.1 The student can justify claims with evidence.
6.2 The student can construct explanations of phenomena based on evidence produced through scientific practices.
6.3 The student can articulate the reasons that scientific explanations and theories are refined or replaced.
6.4 The student can make claims and predictions about natural phenomena based on scientific theories and models.
6.5 The student can evaluate alternative scientific explanations.

Science Practice 7: The student is able to connect and relate knowledge across various scales, concepts and representations in and across domains.

7.1 The student can connect phenomena and models across spatial and temporal scales.
7.2 The student can connect concepts in and across domain(s) to generalize or extrapolate in and/or across enduring understandings and/or big ideas.