1. The chemical elements are fundamental building materials of matter, and all matter can be understood in terms of arrangements of atoms. These atoms retain their identity in chemical reactions.

2. Chemical and physical properties of materials can be explained by the structure and the arrangement of atoms, ions, or molecules and the forces between them.

3. Changes in matter involve the rearrangement and/or reorganization of atoms and/or the transfer of electrons.

4. Rates of chemical reactions are determined by details of the molecular collisions.

5. The laws of thermodynamics describe the essential role of energy and explain and predict the direction of changes in matter.

6. Any bond or intermolecular attraction that can be formed can be broken. These two processes are in a dynamic competition, sensitive to initial conditions and external perturbations.
A.P.'s 7 Science Practices

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

2. The student can use mathematics appropriately.

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

4. The student can plan and implement data collection strategies in relation to a particular scientific question.

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

6. The student can work with scientific explanations and theories.

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