

Ward's AP Chemistry

Making Sense of the New Standards

Curriculum changes are coming for AP* Chemistry this fall. Prepare now for a stress-free transition with information, support, and new materials from Ward's Science.

Here's what you need to know about new AP Chemistry Standards

Classic AP Curriculum		NEW AP Curriculum
• 22 required labs	➔	• 16 required labs, of which at least 6 labs must be completed using an inquiry based approach.
• General topic outline in the AP Course Description guides lessons.	➔	• Explicit, comprehensive curriculum framework is the basis of every lab activity.
• Emphasis on teacher-directed, step-by-step labs with pre-determined questions and methods for investigation.	➔	• Emphasis on scientific inquiry, investigation, and student-directed experimentation.
• Vague coursework objectives, so teachers feel the need to provide broad content coverage to ensure all material is covered.	➔	• Articulate clear learning objectives with guidance on what concepts and skills will (and will not) be taught and assessed.

New AP standards and exam take effect in the 2013–2014 school year. The new lab manual, *Chemistry Guided - Inquiry Experiments: Applying the Science Practices* is now available from the College Board.

New Curriculum Framework will Focus on Hands-On Practice & Application

New coursework, lab investigations and exam will be centered on Big Ideas covering key concepts and content, and Science Practices that build student inquiry skills.

Six Big Ideas:

- 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.

Seven Science Practices:

1. Use representations and models to communicate and solve scientific problems.
2. Use mathematics as appropriate.
3. Formulate questions to extend thinking or guide investigations.
4. Plan and execute data collection strategies as appropriate to address a question.
5. Analyze data to evaluate evidence.
6. Work with scientific explanations and theories.
7. Generalize or relate knowledge within and across domains.

WHY?

To better prepare students for college and real world success.

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