

Updated Digital Resources Aligned to the New Framework

The digital resources have been updated to help you deliver instruction aligned to the new curriculum Framework.

The course dashboard aggregates a variety of resources essential to meeting the new standards including the updated Teacher Manual, updated Correlations, and a link directly to the new College Board Course and Exam Description. The test banks have also been revised to help you provide meaningful practice and assessment opportunities that ensure students are preparing for the Exam all year long.

The screenshot shows the AP Chemistry dashboard interface. On the left is a navigation menu with options: My Programs, Dashboard, Course, Gradebook, Calendar, Assignments, Roster, Reports, and Assessments. The main content area features a header for 'AP Chemistry' with a search bar and a user profile for 'Sandy Tanguay'. Below the header is a banner for 'Chang, Chemistry, AP® Edition, (13th Edition)' with a 'Browse Your Course' button. A 'Calendar' section shows 'Monday, August 26, 2019' with a note 'No calendar items scheduled for this day.' The 'eBook Options' section includes icons for SmartBook, eBook, and Teacher Manual. The 'Additional Resources' section contains links for 'AP® Course and Exam Information', 'QuickStart Guide', 'AP Chemistry Correlation', and 'AP Chemistry Correlation by Chapter'. Four red callout boxes with arrows point to specific elements: one to the 'Browse Your Course' button, one to the 'Teacher Manual' icon, one to the 'AP Chemistry Correlation' link, and one to the 'AP Chemistry Correlation by Chapter' link.

Link directly to the new course and exam description.

The updated Teacher Manual includes section level correlations to the topics, pacing guides and innovative instructional strategies.

The updated program correlation highlights where and how the program aligns at a glance.

View the correlations by discrete chapter to help bring focus to chapter-level instruction.

In addition to the updates that align the program contents to the new curriculum, the Teacher Manual includes a section dedicated to addressing the updated Framework.

Addressing the Updated Curriculum Framework

As has been stated, reaction prediction questions are on the exam, but not stressed as much. Your students will likely encounter a reaction prediction question in the free-response section of the exam, or rarely, in the multiple choice portion of the exam. If the question is located in the free response section, it is generally a “stand alone” question; no subsequent part of the question will depend on how that equation was balanced. Given the “internal consistence” grading method on the AP exam, it is highly unlikely that students would have to balance an equation first and then do a titration or stoichiometry problem with it. A common set of questions is “write the net ionic equation for ____” and the next part of the question is “explain why this reaction is best represented by a net ionic equation”. Students rarely encounter a balancing equation question in the multiple choice section. However, if the students are given a redox reaction to balance in the multiple choice section, it will show the unbalanced equation with blank lines before each species. The question will ask for a coefficient of one of the species. A more common multiple choice question is to identify the type of reaction and provide a justification. Teach your students to identify redox reactions by a change of oxidation numbers. The easiest way is to look for an element in the ground state on one side of the reaction and the same element as an ion or in a compound on the other side – then you know the oxidation number has change, hence redox reaction. This will help identify the type and if they are asked to balance it, to remind the students to break the reaction into its half-reactions.

Gravimetric analysis is a common laboratory process and is often seen on the free-response section of the exam. It can be on the multiple choice section, but the numbers involved would allow students to solve the problems without calculators. Redox and acid-base titrations are also another common lab based questions that more likely will be free response questions, but may show up as multiple choice (again, if the numbers allow the students to find the answers without a calculator).

For both types of titration a key concept is the equivalence point. Most teachers define the equivalence point in terms of the stoichiometry, i.e. the equivalence point is when the moles of acid and moles of base are equal. However, it is important to develop the concept that the equivalence point is the point at which the limiting reactant and the excess reactant switch rolls. In an acid-base titration of an acid being titrated with a base, before the equivalence point, the acid is always the excess reactant and the base (in the buret) is the limiting reactant. After the equivalence point, the base becomes the excess reactant. This concept leads to being able to identify particles in solution at any point along the titration curve, a skill needed in chapters 15 and 16. It will also help students to eliminate some of the choices in multiple choice questions.

AP Chemistry

Chang, Chemistry, AP® Edition, (13th Edition)

AP Core: Chemistry / Chapter: 4: Reactions in Aqueous Solutions

4: Reactions in Aqueous Solutions

AP Chapter Overview | Pacing | Teaching the Chapter | AP Suggested Assignments | Benchmarks

TRA-1.D.2: Sometimes physical processes involve the breaking of chemical bonds. For example, plausible arguments could be made for the dissolution of a salt in water, as either a physical or chemical process, involves breaking of ionic bonds, and the formation of ion-dipole interactions between ions and solvent.

Chapter level resources include an *AP Chapter Overview*, *Pacing Guide*, tips for *Teaching the Chapter*, *AP Suggested Assignments*, and *Benchmarks* that articulate the specific standards addressed within the chapter. Direct links to this section shows the standard number and the standard's description.

AP Chemistry

Assessments

Standards

National Standards

Advanced Placement Standard...

Sciences (2019)

AP Chemistry Course Content

AP Chemistry Course Content

AP Chemistry Science Practices

- Atomic Structure and Properties
- 11 Moles and Molar Mass
- 12 Mass Spectroscopy of Elements
- 13 Elemental Composition of Pure Substances
- 14

Total: (0) selected

Continue

The searchable *Test Bank* allows you to create assessments aligned to the updated framework by content, standard, practice, or skill.



Click here to request access to the full digital course to review the updated resources, including the updated online Teacher Manual.