EVERGREEN 2024 RELEASE NOTES

- New and Updated Content -

American Chemical Society, Chemistry in Context

Release Overview: The 2024 Release has been reviewed and updated extensively to streamline narrative about the topics that are most relevant to today's students and to refine important pedagogical features. Fresh insights and data about climate change, energy trends, current world events, and new scientific developments contribute to coverage of the most up-to-date context. Instructors who want to include a lab component for their course should continue using or order the *Laboratory Manual for Chemistry in Context*, 10th Edition. No changes were needed to the lab experiments and the chapter correlations to the main text remain intact. To receive the Evergreen updates to the eBook and Connect course, duplicate/copy your section on or after the release date, 6/1/2024.

DIGITAL CONTENT			
	Question Bank *NEW and UPDATED assessments have been tagged in Connect for easy filtering.*	**Instructor Resources**	**Videos / Interactives**
LOCATION OF UPDATED CONTENT IN CONNECT	Assignments tab > Add Assignment > Question Bank	Library tab > instructor resources	eBook
Updates Made	New and updated questions have been added to the test banks to reflect changes made to reading content. These are tagged as "New 2024" or "Updated 2024" in the question bank filter. See [Question Bank content map link to come] for more details and see updates to reading content on next page.	Updates to Lecture PPTs and answers to the End-of-Chapter Questions have been made based on updates to the narrative.	New videos and interactives have been added throughout all chapters. See chapter-by-chapter details on the following pages. All videos and interactives are available as embedded activities or hyperlinks in the eBook and are listed on the American Chemical Society's website at www.acs.org/cic.
GLOBAL INFORMATION FOR QUESTION BANKS	**Note on Deleted Questions.** While we attempted to avoid deleting assessment questions so as not to disrupt existing users, at times it is unavoidable. In these cases, the deleted question will remain in your assignment if previously assigned, but is no longer supported by McGraw Hill and won't receive future updates or corrections. We have called out the specific questions that have been deleted in these release notes, but the choice to remove the question from your existing assignments is yours. **New Accessibility Filter**. Experience a simpler way to be mindful of accessibility as you create question bank assignments. New filter options make it easy to ensure all questions in your assignment work well with screen readers; can be used with keyboard only; have accessible audio, video, and images; and more. Use the "Screen Reader/Keyboard/CC" filter to find only accessible questions and the "Screen Reader/Keyboard/CC/AD-Vids described" filter to find accessible questions that also come with text descriptions of any videos that are included.		

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READING/ADAPTIVE CONTENT – eBook, SmartBook, Print	
LOCATION OF UPDATED CONTENT IN CONNECT	eBook on Connect home page AND Assignments tab > Add Assignment > Reading Assignment & SmartBook 2.0 The table of contents for this release has undergone some changes. The details are included in the table below. If you have previously assigned Reading Assignments for any of the affected chapters or sections, you may need to rename your assignments to align to the new table of contents.
Chapter	**Content Changes**
Global	• Prominent, well-defined learning objective boxes are placed at the front of each section. As in the previous edition, objectives are also listed at the end of the chapter with links to their sections provided in the eBook. • New Let's Debate! feature boxes give opportunities for students to debate controversial topics and foster effective instructor-student conversations. • New Real Talk video interviews with industry professionals on various topics appear in each chapter with relevant discussion questions. • Reflect feature boxes now contain relevant titles. • Added @HOME feature boxes with simple demonstrations and experiments that can be done at home with simple supplies. • Added interactive simulation feature boxes (more details provided in chapter descriptions). • For many blue-colored Emphasizing Essentials feature boxes, Example Questions and Solutions were added to give students more guided assistance with questions. • Expanded the Compelling Questions at the beginning of each chapter phrasing the topics of each section as pointed questions with links provided in the eBook. This differs from the previous edition, which only had a few relevant questions from some sections, not all. • Added "Questions to Consider" for the Reflect feature boxes that contain relevant videos. The new questions foster more opportunities for instructor-student interactions and a more in-depth experience rather than simply viewing a video with no follow-up. • Most of the "Did You Know?" boxes were either removed or moved to the regular text, but some still remain in places where additional information is helpful to students. The high number of these in the previous edition were distracting and often tangential to the topics being discussed. • In addition to the chapter-specific changes listed, most sections were reworded and edited to improve the clarity, conciseness, and flow of each section. • Section Spirals feature box were removed, and relevant information was integrated with the main text. • The Lab manual icon and references to the lab manual were removed throughout the text since these were distracting and a lab component is typically not required for the course.

Chapter 1 – Portable Electronics: The Periodic Table in the Palm of Your Hand	• Content updates:
	  ○ The text of Section 1.6 was streamlined with less details about relative concentrations.
	  ○ The figure and video related to Gorilla Glass were combined into a new Reflect activity in Section 1.8.
	  ○ A new graphic illustrating the three pillars of sustainability, Section 1.9.
	• New @HOME labs:
	  ○ classifying matter around your home, Section 1.2
	  ○ unit conversions in your kitchen, Section 1.4
	  ○ using balloons to illustrate the relationship between pressure and surface area, Section 1.8

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	○ atomic structure, Section 1.5 • New interactives, videos, and simulations: ○ more simulations of the states of matter, Section 1.1. ○ introduce the unit of angstroms Section 1.4 ○ atomic structure, Section 1.5 ○ Real Talk video interview with H.N. Cheng related to life cycle analysis, Section 1.9 • New Let's Debate! Activities: ○ sustainability of solar vs. coal-based power, Section 1.9 ○ rare earth mining, Section 1.10
Chapter 2 – The Air We Breathe	***Some reading assignments in Chapter 2 must be reconnected. See Appendix A for details.*** • Content updates: ○ Section 2.3 "You Are What You Breathe" was combined with Section 2.2 and renamed "The Composition of Air." It includes a discussion of the controversial topic of contrails vs. chemtrails. ○ Section 2.4 "What Else Is In the Air?" was renamed "I Can 'See' You! Visualizing Air" and combined with Section 2.3 content related to concentrations of components in air. ○ Section 2.5 "Home Sweet Home: The Troposphere" was removed; the topic of air inversions, an end-of-chapter question (Q 41). ○ Added names of hydrocarbons (from Section 6.2 in previous edition), Section 2.5. ○ Both U.S. EPA and WHO standards added to pollutants in Table 2.4, Section 2.7. ○ U.S. average levels of air pollutants updated in Section 2.8. ○ New Let's Debate! box related to secondhand smoke from e-cigarettes added to Section 2.13. • New @HOME labs: ○ particulates at home, Section 2.6 ○ Components in air (previously the lab feature box in Section 2.2) was moved to Section 2.3. ○ measuring your lung capacity and respiration in the kitchen, Section 2.1 ○ vinegar and baking soda, Section 2.9 ○ limiting reagents in the kitchen, Section 2.9 ○ combustion of candles, Section 2.10 • New interactives, videos, and simulations: ○ The Reflect video related to relative concentrations and Your Turn 2.6 were combined into a new activity in Section 2.3. ○ Real Talk video interview about electric vehicles with Dr. Finlayson-Pitts, Section 2.6 ○ U.S. local air quality and air quality around the world, Section 2.8 ○ indoor air pollution around the world, Section 2.13 ○ air quality related deaths globally, Section 2.14 ○ Real Talk video interview with Dr. Mack related to mechanochemistry, Section 2.14 • New graphics: ○ symbolic representation for the three viewpoints of water, Section 2.4

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	○ the latest air quality forecast at airnow.gov, Section 2.8 ○ which countries have legislation related to air quality standards, Section 2.8 ○ symbolic representation for charcoal burning in air (combustion), Section 2.9 ○ emissions by source, Section 2.11 ○ cutaway illustration of a vehicle catalytic converter, Section 2.11 ○ map illustrating a tragedy of the commons for air pollution, Section 2.12
Chapter 3 – Radiation from the Sun	***Some reading assignments in Chapter 3 must be reconnected. See Appendix A for details.*** • Content updates: ○ Section 3.3 "Where Do Colors Come From" was removed due to its complexity, especially for early chapters. ○ Section 3.7 "Counting Molecules: How Can We Measure the Ozone Concentration" was removed and the content integrated with Section 3.5. ○ Section 3.2 was rewritten for clarity and conciseness. ○ Expanded data related to the effect of race on melanomas was added to Section 3.4. ○ Content about CFC replacements was edited for conciseness added in Section 3.9. ○ New content, activities, and Let's Debate! feature related to the environmental effects of sunscreens were added to Section 3.10. • New activities: ○ activity related to the PhET simulation of wavelength, frequency, and energy, Section 3.2 ○ skin damage caused by UV radiation, Section 3.4 ○ key figure of chlorine vs. ozone concentrations, Section 3.8 • New interactives, videos, and simulations ○ current ozone hole, Section 3.7 ○ interactive and timeline related to CFC replacements, Section 3.9 • New @HOME labs: ○ the effect of Sun's rays, Introduction ○ prisms (Fig. 3.1) ○ SPF ratings, Section 3.10 ○ layers of the atmosphere, Section 3.5 ○ photosynthesis, Section 3.4 • New graphics ○ representation of the electromagnetic spectrum with tangible items alongside wavelength and frequency ranges, Section 3.1 ○ more accurate representations of UV-A and UV-B penetration of skin, Section 3.4 ○ a better illustration of cataracts, Section 3.4 ○ illustration of valence and core electrons and a summary of the number of valence electrons per group of the periodic table (to aid students with drawing Lewis structures), Section 3.6 ○ illustration of the Chapman Cycle to make this concept clearer than the text description in previous editions, Section 3.6 ○ images of the current ozone hole and new activity, Section 3.7

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Chapter 4 – Climate Change	***Some reading assignments in Chapter 4 must be reconnected. See Appendix A for details.*** • Content updates: ○ The Introduction was rewritten with new activities and images related to the impacts of climate change. ○ Content on ionic compounds and the video "Naming Ionic Compounds" from Section 4.1 were moved to Section 5.4 "Water Quality," since it is a better fit for this latter context. ○ Section 4.2 content "Where Did All the Carbon Atoms Go?" was moved to Section 4.1. The content related to solution formation was moved to Section 5.6. ○ Sections 4.5 and 4.6 were combined. ○ Section 4.6 (previously Section 4.8) was rewritten for clarity and conciseness. ○ Section 4.7 (previously Section 4.9) was rewritten for clarity and now includes many more graphics with related to current greenhouse gas concentrations, Earth's surface temperatures (current vs. Historical), temperature change visualizations, and the use of carbon isotope ratios in understanding climate change. ○ The section "Can We Predict the Future?" (previously Section 4.10) was retitled "What Factors Drive Our Climate?" (Section 4.8) and has been greatly expanded with new activities, data, and visualizations. ○ The section "A Look at Our Future World" (previously Section 4.11) was retitled "Impacts of Climate Change" (4.9) and has been greatly expanded with more details related to the latest IPCC conclusions. Many new graphics, videos, simulations, and data related to the impacts of climate change have been added, which makes this much more comprehensive and interactive than the previous edition. ○ Section 4.10 "Action Plans to Prevent Future Global Catastrophes—Who and How?" (previously Section 4.12) related to action plans to mitigate climate change has been greatly expanded with new interactive activities, graphics, videos, and data. This includes interactive activities related to the Paris Agreement and how an individual's daily decisions have effects on climate change. In addition, new timelines for policy agreements and an infographic comparison of carbon tax versus cap-and-trade were added. • New activities: ○ visualizing the carbon cycle and a better illustration of the carbon cycle (Figure 4.3), Section 4.1. ○ the greenhouse effect and Earth's energy balance, Section 4.4 "Why Does it Matter Where Carbon Atoms End Up?" (BCl_3 was replaced with $COCl_2$ in Table 4.2 since the former is an exception to the octet rule and may be confusing to students.) ○ the shape of carbon dioxide and ozone, Section 4.5. ○ Montreal Protocol for CFCs and climate change was added in Section 4.8. ○ Let's Debate! activity related to the En-Roads simulator, Section 4.10. • New interactives, videos, and simulations: ○ introductory video that better reflects the scientific consensus of climate change, Introduction ○ video activity related to significant figures, Section 4.3, which replaces text from Section 4.4 in the previous edition ○ video activity related to the stretching modes of carbon dioxide, Section 4.6 ○ Real Talk video interview with NOAA scientist Dr. Gilman, Section 4.7 • A new @HOME activity related to melting glaciers was added to the Introduction.

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Chapter 5 – Water Everywhere: A Most Precious Resource	***Some reading assignments in Chapter 5 must be reconnected. See Appendix A for details.*** • Content updates: ○ The Introduction was rewritten for conciseness and clarity. ○ Section 5.1 “The Unique Composition of Water” was retitled “The Unique Properties of Water” to more accurately reflect the topic of the section ○ The concept of aridification and a new corresponding interactive activity were added to Section 5.3. ○ Previous Section 5.4 “Help! There Is Something in My Water!” was deleted for conciseness; these topics are already covered in other sections of this chapter. ○ A new section 5.4 on aqueous solutions and naming inorganic compounds was moved to Chapter 5 from Chapter 4. ○ The PhET simulation on molarity was removed from Section 5.5 since this topic is covered with another simulation later in the chapter. ○ The video related to reverse osmosis (previously in Section 5.13) was removed, as it was not relevant—focused more on semipermeable membranes. ○ In Section 5.5, new activities related to concentrations have replaced some of the text for clarity and conciseness. ○ Section 5.6 “A Deeper Look at Solutes” in the previous edition was broken into two sections in the 2024 release (Sections 5.6 “A Deeper Look at Solutes” and 5.7 “*Like Dissolves Like:* A Pathway for Contamination”) for conciseness and clarity. ○ Section 5.6 contains topics of solutions and precipitation that were in Section 4.2 of the previous edition. ○ A description of naming acids (overlooked in the previous edition) was added to Section 5.8. ○ Sections 5.10 and 5.11 were combined into Section 5.11 “Acid’s Effect on Water” for conciseness; the presentation is in the reverse order than in the previous edition since it makes more sense to introduce buffers and ocean acidification before discussing the sources of acidity (increasing atmospheric CO2, acid rain) • New activities: ○ interactive map of water use in the U.S., Section 5.3 ○ activity related to a PhET simulation (shown as a margin note in the previous edition), Section 5.10 ○ 2022 oil spill in Kansas, the Camp Lejeune incident, and PFAS contamination in the U.S., Section 5.7 • New interactives, videos, and simulations: ○ Real Talk video interview with Dr. Reddy related to water pollution, Section 5.3 ○ acid/base calculations, Section 5.9 ○ Let’s Debate! activity related to water fluoridation, Section 5.12 ○ two interactive activities related to the effect of acidification on coral reefs, Section 5.11 ○ the differences in pH values for common household solutions, Section 5.10 ○ Real Talk video interview with Dr. DeSimone at Stanford University related to using carbon dioxide for dry cleaning and entrepreneurship considerations, Section 5.7 • @HOME labs: ○ densities and water balloons, Section 5.2 ○ orange peel and balloons, Section 5.7 ○ neutralization with baking soda, Section 5.9 ○ red cabbage as a pH indicator, Section 5.10

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	• New graphics:
	  ○ the water cycle and an interactive map of people without access to safe drinking water, Section 5.3
	  ○ water levels in the High Plains aquifer, Section 5.3
	  ○ Mentos demo illustrating degasification, Section 5.6
	  ○ bioaccumulation, Section 5.7

Chapter 6 – Energy from Combustion	***Some reading assignments in Chapter 6 must be reconnected. See Appendix A for details.***
	• Content updates:
	  ○ Naming hydrocarbons was moved to Section 2.5.
	  ○ Your Turn 6.9 and 6.10 from the previous edition were combined (energy calculations and assumptions) in Section 6.4.
	  ○ Your Turn 6.12 from the previous edition was changed to a new @HOME activity in Section 6.4; special mentions of safety are now included.
	  ○ Section 6.7 "Efficiency of Energy Conversion" was rewritten with new graphics and activities related to energy consumption and efficiencies of power plants; this was needed to improve the clarity and conciseness of this section.
	  ○ Sections 6.9 and 6.10 from the previous edition were combined into a new Section 6.9; content on petroleum refineries is now in Section 6.11.
	  ○ More details and a new activity related to fracking were added to Section 6.10.
	  ○ The interactive figures in Sections 6.8–6.10 related to energy use, production, reserves were updated.
	  ○ The map of biodiesel stations in the U.S. was updated in Section 6.15.
	• New activities:
	  ○ composting, Section 6.1
	  ○ the octet rule, Section 6.2
	  ○ volume contained in a barrel of oil, Section 6.9
	  ○ oil spills, Section 6.9
	  ○ Let's Debate! activity related to clean coal, Section 6.8
	  ○ Figure 6.27 in the previous edition (Section 6.13) was converted into a new activity in Section 6.12 so students can evaluate structures to explain trends in boiling points and intermolecular forces, rather than being told these trends.
	  ○ lab-based activity related to making biodiesel, Section 6.15 (previously a margin note)
	  ○ comparative energy density of ethanol, Section 6.14
	  ○ ethanol production, Section 6.14
	  ○ Let's Debate! activity related to concerns about biofuels, Section 6.16
	  ○ concluding activity related to the "best" fuel for cars, Section 6.16
	• New interactives, videos, and simulations:
	  ○ video activity asking whether we will run out of fossil fuels, Section 6.1
	  ○ The image of the fire triangle was replaced with a video activity in Section 6.2.
	  ○ thermometers, Section 6.3 (previously a margin note)
	  ○ DIY calorimeters, Section 6.4 (previously a margin note)
	  ○ endo- and exothermic reactions, Section 6.4

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	○ calculating the heat of combustion for acetylene, Section 6.5. ○ Real Talk video interview with Dr. Doezema related to emissions budgets for methane and other greenhouse gases, Section 6.10 ○ oil drilling and tar sands (margin note), Section 6.9 ○ Fischer-Tropsch (Figure 6.31), Section 6.13 • New @HOME labs: ○ by-products of candle combustion, Section 6.1 ○ DIY fire extinguisher, Section 6.2 ○ heating sand to demonstrate the first law of thermodynamics, Section 6.3 • New graphics: ○ interactive figure and activity related to worldwide energy consumption by source and fossil fuels, Section 6.1 ○ worldwide production of ethanol, Section 6.14 ○ renewable energy share of global energy consumption, Section 6.16
Chapter 7—Energy from Alternative Sources	***All reading assignments in Chapter 7 must be reconnected. See Appendix A for details.*** • Content updates: ○ The Introduction was shortened for conciseness; the graphic and content from the Introduction used in the previous edition were moved to a new Section 7.1 (“Alternative Energy Sources”). ○ New Section 7.1 was added that contains a variety of graphics and activities related to alternative energies. ○ The historical details related to Lise Meitner and fission included in Section 7.1 of the previous edition were deleted; this was deemed to be too extraneous to the discussion of nuclear fission. ○ Your Turn 7.21 in the previous edition was expanded (now Your Turn 7.22) for students to evaluate data and draw a variety of conclusions in Section 7.8. • New activities: ○ illustrative comparison of nuclear fission and fusion, Section 7.2 ○ tutorial video activity related to calculating radioactive decay, Section 7.6 ○ activity and interactive graphic related to solar energy use worldwide, Section 7.9 ○ Let’s Debate! activity related to the costs of hydroelectric power, Section 7.11 • New interactives, videos, and simulations: ○ writing nuclear equations, Section 7.2 ○ Chernobyl disaster, Section 7.7 ○ movement of electrons and holes through a semiconductor, Section 7.10 (previously a margin note) ○ Real Talk video interview with Dr. Furman on the design of solar-powered transportation systems, Section 7.10 • New @HOME labs: ○ using candies to model isotopes, Section 7.2 ○ radioactive decay modeled with licorice, Section 7.6 ○ making s’mores from sunshine, Section 7.9

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	• New graphics:
	  ○ ionizing and nonionizing regions of the EM spectrum, Section 7.5
	  ○ the share of primary energy from nuclear power and annual change in nuclear energy generation globally, Section 7.8
	  ○ comparison of various sources of energy in terms of safety and greenhouse gas emissions (during use), Section 7.8
	  ○ renewables, wind, and geothermal sources, Section 7.11

Chapter 8—Energy Storage	***Some reading assignments in Chapter 8 must be reconnected. See Appendix A for details.***
	• Content updates:
	  ○ Reference to the Baghdad battery was removed from the Introduction; this topic was moved to an end-of-chapter question.
	  ○ Figure 8.6 and descriptions of anodes, cathodes, and oxidation states was moved from Section 8.2 (“Ohm, Sweet Ohm!”) in the previous edition to Section 8.1 (“How Does a Battery Work?”).
	  ○ Section 8.1 was rewritten for clarity; common mnemonics of OIL RIG and LEO GER were added for oxidation and reduction reactions.
	  ○ Formulas and an activity related to power, voltage, resistance, and current were newly added to Section 8.2.
	  ○ New Section 8.6 “Renewable Energy Storage” was added, which describes the use of batteries for grid energy storage applications.
	  ○ A figure comparing the internal structures of NiMH and alkaline batteries was added to Section 8.4; the previous edition compared Ni-Cd and alkaline batteries—the former is not used much anymore.
	  ○ The table of fuel economy leaders was updated (Section 8.9), and a new graphic of EV car sales was added to Section 8.9. The map of policies/incentives for EVs was deleted, since most countries either do not offer any or they are opaque regarding these incentives.
	• New activities:
	  ○ classifying half-reactions, Section 8.1
	  ○ the lifetime of rechargeable batteries, Section 8.4
	  ○ Let’s Debate! activity related to whether we can support electronic vehicles (EVs), Section 8.7
	  ○ exploding batteries, Section 8.7 (previously a margin note)
	  ○ how Li-ion batteries work, Section 8.7 (previously a margin note)
	  ○ supercapacity myths (with link to an article), Section 8.8
	  ○ environmental justice (e-waste), Section 8.12
	  ○ The activity and graphic related to metals becoming extinct was updated/modified in Section 8.12.
	• New interactives, videos, and simulations:
	  ○ water-flow analogy for electrical current, Section 8.2; (previously a simple activity [without video])
	  ○ Real Talk video interview with Dr. Pomerantseva on the development of better batteries, Section 8.7
	• New @HOME labs:
	  ○ redoxing pennies, Section 8.1 (previously a margin note)
	  ○ DIY voltaic pile, Section 8.3
	  ○ energy versus power density, Section 8.8

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Chapter 9—The World of Polymers and Plastics	• Content updates:
	  ○ The reference and activity related to the Macrogalleria used in the previous edition (Section 9.4) were removed for relevancy.
	  ○ The content related to tail-head designation of molecules in Section 9.5 was added to the main text.
	  ○ More varieties of chemical formulas for some functional groups were added to Table 9.2 (Section 9.6).
	  ○ The activity "Plastics Recycling Scorecard" from Section 9.8 was moved to Section 9.9.
	• New activities:
	  ○ The activity related to polymerization of ethylene was expanded (Section 9.3).
	  ○ single-use bag usage, Section 9.4
	  ○ activity and graphics related to the environmental impacts of grocery bag type, Section 9.8
	  ○ The section related to DEHP and BPA, as well as the precautionary principle, was moved into a new Let's Debate! Activity in Section 9.11.
	  ○ Let's Debate! activity related to whether recycling is worth it, Section 9.9
	• New interactives, videos, and simulations:
	  ○ visualizing polymerization, Section 9.3
	  ○ video activity and text related to thermosets and thermoplastics, Section 9.5 (previously a margin note)
	  ○ interactive figure related to mismanaged plastic waste, Section 9.8
	  ○ Real Talk video interview with Edgar McGregor related to removing plastics from the environment, Section 9.8
	  ○ video lab-based activity related to PLA degradation, Section 9.10 (previously a margin note)
	• New @HOME labs:
	  ○ plastics from milk, Section 9.2
	  ○ polyethylene "necking," Section 9.4 (previously Figure 9.6)

Chapter 10—Brewing and Chewing	***Some reading assignments in Chapter 10 must be reconnected. See Appendix A for details.***
	• Content updates:
	  ○ The activities present in the Introduction of the previous edition were moved to Section 10.1.
	  ○ The opening Reflect activity related to the opening video was replaced with a new activity on comparisons between meal prep and a chemistry laboratory. The previous edition's activity focused on flavor beads and was too advanced for the introduction (this topic is introduced later in the chapter).
	  ○ Section 10.2 was retitled "Chocolate!" (previously "How Does Smell Affect Taste?") to better reflect the main topic: the chemistry of chocolate.
	  ○ The activity "How Does Aroma Affect Taste?" was moved to Section 10.2 "Chocolate!"
	  ○ New text and graphics related to viscosity and foams were added to Section 10.10.
	  ○ A new recipe for Popping Boba, which illustrates spherification, was added to Section 10.10.
	  ○ New schematics for the metabolism of ethanol versus methanol in the body were added to Section 10.12.
	• New activities:
	  ○ Let's Debate! activity related to the sustainability of cooking methods, Section 10.7
	  ○ a video related to sushi prep was expanded into a new activity in Section 10.8 (previously a margin note)

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	• New interactives, videos, and simulations:
	  ○ what affects our sense of taste, Section 10.1 (previously a margin note)
	  ○ comparison of milk chocolate and dark chocolate, Section 10.2 (previously a margin note)
	  ○ dangers of microwave, Section 10.7 (previously a margin note)
	  ○ Mentos demo, Section 10.10(previously a margin note)
	  ○ how whiskey is made, Section 10.12 (previously a margin note)
	• New @HOME labs:
	  ○ The former activity “What’s in a Mouthful?” from the Introduction was changed to a new @HOME activity in Section 10.1.
	  ○ taste testing, Section 10.1
	  ○ chocolate taste test, Section 10.2
	  ○ sugar cookies, Section 10.4
	  ○ heating curves, Section 10.5
	  ○ fresh basil preparation, Section 10.8
	  ○ pickling, Section 10.8
	  ○ yeast, Section 10.11
	  ○ caffeine extraction, Section 10.13

Chapter 11--Nutrition	• Content updates:
	  ○ The “Did You Know?” margin note structure of an ester was moved to the main text of Section 11.2.
	  ○ A description of the REPLACE action plan of the WHO to eliminate trans fats was added to Section 11.3 with updates on progress.
	  ○ Your Turn 11.8 was changed to ask how companies should label products if enzymatic interesterification were used.
	  ○ Your Turn 11.9 and Table 11.3 were expanded and moved to Section 11.5.
	  ○ The activity related to dietary advice was moved closer to the front of Section 11.8; this placement gives students opportunity to discover this topic before it is discussed in the section, which should help in their understanding of this topic.
	  ○ The chemical structures of lauric acid and sucrose were added to Section 11.8 so the student can understand the bond types involved and better rationalize the energy released in these combustion reactions.
	• New activities:
	  ○ activity and interactive map related to worldwide trends in obesity and undernourishment, Section 11.1
	  ○ Let’s Debate! activity related to high-fructose corn syrup, Section 11.5
	  ○ interactive activity using the water footprint calculator, Section 11.10 (previously a margin note)
	  ○ Let’s Debate! activity related to organic foods, Section 11.11
	• New interactives, videos, and simulations:
	  ○ olive oil, Section 11.3 (previously a margin note)
	  ○ chemistry of artificial sweeteners, Section 11.5 (previously a margin note)
	  ○ simulation to visualize amino acid linkages, Section 11.6 (previously a margin note)

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	○ the safety of aspartame, Section 11.6 (previously a margin note) ○ how protein builds muscle, Section 11.6 (previously a margin note) ○ vitamin supplements, Section 11.7 (previously a margin note) ○ The PhET simulation in the margin note of Section 11.8 in the previous edition was expanded into a comprehensive interactive activity. ○ Real Talk video interview with ShaRhonda Dennis related to food safety and the life of an FDA chemist, Section 11.9 • New @HOME labs: ○ fatty foods, Section 11.3 ○ iron in cereal, Section 11.7 (previously a margin note) • New graphics: ○ common food sources and health benefits of various minerals, Section 11.7 ○ simplistic and straightforward world map of meat production, Section 11.10 ○ current and projected ammonia production, Section 11.12 ○ comprehensive graphic related to economic access to a healthy diet, Section 11.13
Chapter 12—Health & Medicine	• Content updates: ○ A more explicit description and labeled equations for weak acid/base and conjugate species were added to Section 12.2. ○ Condensed structural formulas for isobutane are color-coded for clarity in Section 12.3. ○ More details and graphics related to glycolysis were added to Section 12.6. ○ New content related to vaccines and the coronavirus pandemic were added in section 12.9. ○ Section 12.10 was rewritten to better reflect the state-of-the art techniques involved in drug design. ○ A new comprehensive section related to opioid drugs, including structures, graphics, and a Let's Debate! activity were added to Section 12.10. • New interactives, videos, and simulations: ○ equilibrium, Section 12.1 (previously a margin note) ○ acids and buffers, Section 12.2 ○ acid strength and pH, Section 12.2 ○ Real Talk video interview with Dr. Osojo related to vaccine development, Section 12.9 ○ Real Talk video interview related to real-world drug design, Section 12.10 ○ functional groups, Section 12.4 (previously a margin note) ○ MolView activity related to dopamine, Section 12.4 ○ how hormones work, Section 12.6 ○ dangers of synthetic drugs, Section 12.7 (previously a margin note) • New @HOME labs: ○ snap-bead equilibria, Section 12.1 ○ investigate bacteria on various home surfaces, Section 12.9

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Chapter 13—Genes and Life	• Content updates:
	  ○ Section 13.8 was rewritten for clarity and conciseness, focusing on the top three common arguments against GMOs; the margin note references were removed, but students will need to look up references for the activities in this section.
	  ○ The margin note video related to genomes from Section 13.1 in the previous edition was moved to Section 13.4 where this concept is covered.
	  ○ The margin note video in Section 13.4 related to a lab experiment for the extraction of DNA from common foods was removed; this topic was covered in the previous section with the addition of a new @HOME activity (DNA extraction from strawberries).
	  ○ A new table that compares the forces involved in primary, secondary, and tertiary protein structures, Section 13.5. The simulation in a margin note of the previous edition (Section 13.5) related to primary, secondary, and tertiary protein structures was deemed too advanced and deleted.
	  ○ The activity related to ionizing radiation (Section 13.6) was removed; this was not relevant to this section, which focused on genetic engineering.
	  ○ Images of papaya ringspot virus and genetically modified rice were moved from Section 13.8 to Section 13.7 due to relevance.
	  ○ The final activity of Section 13.8 related to considering the source was rewritten for relevance and clarity.
	• New activities:
	  ○ insulin via bacteria, Section 13.1
	  ○ Let's Debate! activity related to superweeds, Section 13.8
	• New interactives, videos, and simulations:
	  ○ X-ray diffraction, Section 13.3
	  ○ DNA replication, Section 13.3
	  ○ relating DNA to protein structure, Section 13.3
	  ○ genomes, Section 13.4 (previously a margin note)
	  ○ the polarity of amino acid side chains and protein folding, Section 13.5 (previously a margin note)
	  ○ Real Talk interview with Dr. Yehl related to CRISPR, Section 13.6
	  ○ GMO regulations, Section 13.8
	• New @HOME labs:
	  ○ extracting DNA from strawberries, Section 13.2
	  ○ candy model of DNA, Section 13.3

Chapter 14—Who Killed Dr. Thompson? A Forensic Mystery	• Content updates:
	  ○ The "Did You Know?" margin note in Section 14.2 of the previous edition was removed; this was too advanced and not relevant to the discussion.
	  ○ A new image of an alternative light source was added to Section 14.6.
	  ○ The margin notes related to DNA fingerprinting, gel electrophoresis, PCR, and DNA extraction from the previous edition were removed; this content was moved to new activities and links provided in the figure captions.
	  ○ A new video activity related to DNA fingerprinting was added to Section 14.14 (previously a margin note).
	  ○ A new Let's Debate! activity in which students decide whether the suspect is guilty or not guilty based on the evidence was added to Section 14.14.
	  ○ The group activity "CSI Adventures" from Section 14.15 was removed since the website is no longer functional; this was replaced with a new Real Talk interview with Dr. Houck related to real-world forensics investigations.

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	• New @HOME labs:
	  ○ DNA extraction, Section 14.14
	  ○ DIY gel electrophoresis, Section 14.14

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Accessibility	McGraw Hill is committed to aligning our digital solutions to WCAG AA standards. Our Voluntary Product Accessibility Templates (VPATs) are available upon request. Any additional questions related to the accessibility of a product can be directed to your Learning Technology Representative, or you may contact us at accessibility@mheducation.com
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Appendix A: Table of Contents Correlation

Key: No change (black text), Section deleted (red text), Change requires reading assignment update (purple text), Brand new section (green text)

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