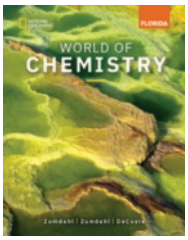

FLORIDA Standards Correlations

Component Codes

AGP: Activity Guide Project
CA: Chapter Assessments
CE: Chemical Engineering
CI: Chapter Investigation
CIYW: Chemistry in Your World
CO: Chapter Opener
CR: Chapter Review
CS: Case Study
EAW: Explorers at Work
EE: Exploring Engineering
EFTC: Explorer Feature Thinking Critically
HOC: Hands-On Chemistry/ Minilab
LA: Lesson Assessment

Bold blue numbers indicate chapters or sections. Standards unique to Chemistry 1 Honors are indicated with an asterisk (*).

Next Generation Sunshine State Standards (NGSSS) Correlations for Chemistry 1 ..... FL2

Additional Standards for Chemistry 1 ..... FL9

Next Generation Sunshine State Standards

CHEMISTRY 1		
STANDARD	**STUDENT/TEACHER EDITION**	**ONLINE RESOURCES**
SC.912.L.17.15 Discuss the effects of technology on environmental quality.*	**2 EAW** p. 30; **2 CS** p. 51; **5 EE** p. 152; **8 EAW** p. 256 EFTC; **10.4** pp. 361–364; **10 CS** p. 370; **CI** 15, p. 591; **16.1 LA** p. 604 #4; **20.1 CIYW** p. 752; **20.4 CE** p. 772; **20 CS** p. 781	
SC.912.L.17.19 Describe how different natural resources are produced and how their rates of use and renewal limit availability.*	**9 CS** p. 327; **10 EAW** p. 340; **10.4** pp. 360–364; **10.4 LA** p. 369 #1; **10 CS** p. 370; **18 CS** p. 700; **20.3 CE** p. 769	
SC.912.L.18.12 Discuss the special properties of water that contribute to Earth's suitability as an environment for life: cohesive behavior, ability to moderate temperature, expansion upon freezing, and versatility as a solvent.	**8 CR** p. 288 #1, #5; **14.1** pp. 519–521; **14.2** p. 531; **14 CR** p. 542 #9–11; **15.1** p. 550, p. 552, p. 554; **15.1 LA** p. 558 #4; **15 CR** p. 586 #2, #3; **CI** 15, p. 590; **CI** 17, p. 669	**14 CA-B** #2; **15 CA-B** #1

STANDARD	STUDENT/TEACHER EDITION	ONLINE RESOURCES
SC.912.N.1.1 Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following: 1. Pose questions about the natural world, (Articulate the purpose of the investigation and identify the relevant scientific concepts). 2. Conduct systematic observations, (Write procedures that are clear and replicable. Identify observables and examine relationships between test (independent) variable and outcome (dependent) variable. Employ appropriate methods for accurate and consistent observations; conduct and record measurements at appropriate levels of precision. Follow safety guidelines). 3. Examine books and other sources of information to see what is already known, 4. Review what is known in light of empirical evidence, (Examine whether available empirical evidence can be interpreted in terms of existing knowledge and models, and if not, modify or develop new models). 5. Plan investigations, (Design and evaluate a scientific investigation). 6. Use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems, and also the generation and interpretation of graphical representations of data, including data tables and graphs), (Collect data or evidence in an organized way. Properly use instruments, equipment, and materials (e.g., scales, probeware, meter sticks, microscopes, computers) including set-up, calibration, technique, maintenance, and storage). 7. Pose answers, explanations, or descriptions of events, 8. Generate explanations that explicate or describe natural phenomena (inferences), 9. Use appropriate evidence and reasoning to justify these explanations to others, 10. Communicate results of scientific investigations, and 11. Evaluate the merits of the explanations produced by others.	**1 EAW** p. 4 EFTC; **1.2** p. 10, pp. 12–14; **1.2 LA** p. 15 #3; **1 CS** p. 22; **1 CR** p. 24 #7–9; **CI** 1, pp. 26–27; **2.1 HOC** p. 36 Part I #1, #2, Part II #3–5; **2.3 HOC** p. 47 #1–5; **CI** 2, p. 55; **3 EE** p. 58; **3.3 HOC** p. 90 #1–3; **3 CS** p. 94; **3 CR** pp. 96–99 #16, #17, #46, #50; **CI** 3, pp. 100–101; **4 EAW** p. 104 EFTC; **4.3 HOC** p. 120 #1; **4 CS** p. 142; **CI** 4, p. 149; **5 EE** p. 152; **5 CS** p. 177; **CI** 5, p. 183; **6 EAW** p. 186 EFTC; **CI** 6, pp. 228–229; **7 EE** p. 232; **CI** 7, p. 253; **CI** 8, p. 293; **CI** 9, p. 336; **10.4** pp. 364–365; **10.4 LA** p. 369 #2–5; **10 CS** p. 370; **10 CR** p. 374 #23; **CI** 10, p. 376; **11 CR** p. 419 #14; **CI** 11, p. 423; **12.4** p. 455; **CI** 12, p. 465; **13.1 HOC** p. 486; **13.3** p. 502; **13 CS** p. 505; **CI** 13, p. 511; **14.1** p. 520; **14 CS** p. 539; **CI** 14, p. 545; **15.1 HOC** p. 554 #1–3; **15.2 HOC** p. 567 #2, #4; **15 CS** p. 584; **CI** 15, pp. 590–591; **16 EAW** p. 594 EFTC; **16.1** p. 601; **16.2** pp. 608–609; **16.2 LA** p. 613 #6; **16.3 LA** p. 618 #5–7; **16 CS** p. 619; **16 CR** p. 622, pp. 624–625 #1–3, #11, #37, #41–43; **CI** 16, pp. 626–627; **17.1** p. 633, p. 635; **17.1 LA** p. 640 #7; **17.3** pp. 660–661; **17 CR** pp. 667–668 #53, #59; **CI** 17, p. 669; **18 EAW** p. 672 EFTC; **18.2 LA** p. 687 #3, #4; **18.3** p. 688; **18.3 LA** p. 699 #1, #2; **18 CR** p. 702, p. 704 #3, #4, #30, #31; **19.2** p. 723; **19.3** p. 728; **19 CS** p. 732; **19 CR** p. 736 #43; **20 EE** p. 740; **20 CS** p. 781; **CI** 20, p. 787; **21 EAW** p. 790 EFTC; **21.2 HOC** p. 811 #1–3; **21 CS** p. 815	**1 CA-A** #1; **16 CA-B** #1–4, #10; **18 CA-A** #10; **18 CA-B** #3, #6; **19 CA-A** #9, #10; **AGP1**; **AGP2**; **AGP3**; **AGP4**
SC.912.N.1.2 Describe and explain what characterizes science and its methods.	**1.1** p. 8; **1.1 LA** p. 9 #4, #5; **1.2** p. 10, p. 12	
SC.912.N.1.4 Identify sources of information and assess their reliability according to the strict standards of scientific investigation.		

STANDARD	STUDENT/TEACHER EDITION	ONLINE RESOURCES
SC.912.N.1.5 Describe and provide examples of how similar investigations conducted in many parts of the world result in the same outcome.	**1.2** p. 13; **CI** 15, p. 591	
SC.912.N.1.6 Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied.	**1.2** p. 12; **6.2 HOC** p. 202 #1; **8.2 LA** p. 279 #5; **CI** 8, p. 293; **CI** 9, p. 336; **11 CS** p. 416; **11 CR** p. 422 #53; **CI** 14, p. 545; **17 CS** p. 662; **17 CR** pp. 664–665 #7, #8, #12, #13, #19; **18 CS** p. 700; **19.2** p. 721	**17 CA-B** #5, #7
SC.912.N.1.7 Recognize the role of creativity in constructing scientific questions, methods and explanations.	**1.4** p. 20; **3.3** p. 76	
SC.912.N.2.2 Identify which questions can be answered through science and which questions are outside the boundaries of scientific investigation, such as questions addressed by other ways of knowing, such as art, philosophy, and religion.	**1.2** p. 12; **11.4 HOC** p. 414 #1; **11 CS** p. 416	
SC.912.N.2.3 Identify examples of pseudoscience (such as astrology, phrenology) in society.*		
SC.912.N.2.4 Explain that scientific knowledge is both durable and robust and open to change. Scientific knowledge can change because it is often examined and re-examined by new investigations and scientific argumentation. Because of these frequent examinations, scientific knowledge becomes stronger, leading to its durability.	**1.2** pp. 12–13	
SC.912.N.2.5 Describe instances in which scientists' varied backgrounds, talents, interests, and goals influence the inferences and thus the explanations that they make about observations of natural phenomena and describe that competing interpretations (explanations) of scientists are a strength of science as they are a source of new, testable ideas that have the potential to add new evidence to support one or another of the explanations.	**1 EAW** p. 4; **1.2** pp. 12–13; **2 EAW** p. 30; **4 EAW** p. 104; **6 EAW** p. 186; **10 EAW** p. 340; **14 EAW** p. 514; **15 EAW** p. 548; **16 EAW** p. 594; **18 EAW** p. 672; **21 EAW** p. 790	
SC.912.N.3.1 Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory represents the most powerful explanation scientists have to offer.*	**1.2** pp. 12–13; **1.2 LA** p. 15 #2, #4; **1 CR** p. 24 #10, #11; **CI** 1, p. 27	**1 CA-A** #3; **1 CA-B** #1, #2
SC.912.N.3.2 Describe the role consensus plays in the historical development of a theory in any one of the disciplines of science.	**1.2** pp. 12–13	
SC.912.N.3.3 Explain that scientific laws are descriptions of specific relationships under given conditions in nature, but do not offer explanations for those relationships.	**1.2** p. 14; **13 CR** p. 508 #29	
SC.912.N.3.5 Describe the function of models in science, and identify the wide range of models used in science.	**1.2** p. 12; **1.2 CIYW** p. 13; **13 CR** p. 508 #30; **14.2 HOC** p. 531 #1; **17 CR** pp. 666–667 #46, #48	

STANDARD	STUDENT/TEACHER EDITION	ONLINE RESOURCES
SC.912.N.4.1 Explain how scientific knowledge and reasoning provide an empirically-based perspective to inform society's decision making.	**1.3** pp. 16–17, p. 19; **1.3 LA** p. 19 #1; **1 CR** p. 24 #4, #12; **CI** 15, pp. 590–591; **20.1** p. 756	
SC.912.N.4.2 Weigh the merits of alternative strategies for solving a specific societal problem by comparing a number of different costs and benefits, such as human, economic, and environmental.*	**1.3** p. 17, p. 19; **8 CS** p. 286; **9 EE** p. 296; **9 CS** p. 327; **10 EAW** p. 340 EFTC	
SC.912.P.8.1 Differentiate among the four states of matter.	**2.1** pp. 35–36; **2.1 CIYW** p. 37; **2.1 LA** p. 37 #3; **2 CR** p. 53 #5; **10 CR** p. 374 #22; **13 CR** p. 507 #1; **CI** 13, p. 511; **14 CO** p. 513; **CI** 14, p. 545	**2 CA-B** #2
SC.912.P.8.2 Differentiate between physical and chemical properties and physical and chemical changes of matter.	**1.1 LA** p. 9 #1; **1 CR** p. 24 #6; **2.2** pp. 38–41; **2.2 LA** p. 42 #1–5; **2 CR** pp. 53–54 #6–10, #17, #20–24; **CI** 2, p. 55; **4.4** p. 128; **7.1 LA** p. 235 #1–3; **7 CR** p. 250 #1–4; **CI** 7, p. 253; **11.4** p. 410; **11.4 LA** p. 415 #5; **11 CR** p. 422 #52; **14.1 LA** p. 525 #5; **14 CR** p. 543 #28; **20 EE** p. 740	**2 CA-A** #1–3; **7 CA-B** #9
SC.912.P.8.3 Explore the scientific theory of atoms (also known as atomic theory) by describing changes in the atomic model over time and why those changes were necessitated by experimental evidence.	**4.2** p. 113; **4.2 LA** p. 115 #1–4; **4.3** pp. 116–118, p. 121; **4.3 LA** p. 123 #1, #2; **4 CR** pp. 145–146 #1, #18; **11.1 LA** p. 389 #2; **11.2 LA** p. 395 #4–6; **11 CR** p. 419 #1, #10–13	**4 CA-B** #1–3; **11 CA-B** #6, #7
SC.912.P.8.4 Explore the scientific theory of atoms (also known as atomic theory) by describing the structure of atoms in terms of protons, neutrons and electrons, and differentiate among these particles in terms of their mass, electrical charges and locations within the atom.	**4.2** p. 113; **4.2 LA** p. 115 #4; **4.3** pp. 116–119; **4.3 LA** p. 123 #6; **4.5 LA** p. 141 #1; **4 CR** pp. 145–147 #13–15, #17, #19, #38; **5 EE** p. 152; **6.1 LA** p. 199 #2; **11.1 LA** p. 389 #1, #3; **11.3** p. 397, p. 400; **11.3** p. 401; **11.3 LA** p. 401 #1–6; **11.4** p. 404; **11.4 LA** p. 415 #1–4; **11 CR** pp. 419–421 #15–29, #48, #49; **12.1** p. 431; **CI** 13, p. 511	**4 CA-A** #7; **11 CA-A** #1, #3–8, #12; **11 CA-B** #8–11
SC.912.P.8.5 Relate properties of atoms and their position in the periodic table to the arrangement of their electrons.	**4.5** p. 137; **4.5 LA** p. 141 #4; **4 CR** pp. 146–148 #16, #34, #41, #45; **5.1** p. 155, p. 157, p. 162; **5.1 LA** p. 168 #1–6; **5 CR** p. 181 #20–22; **11 EAW** p. 380 EFTC; **11.4** p. 407, p. 410; **11.4 HOC** p. 414; **11.4 LA** p. 415 #5–7; **11 CR** pp. 420–422 #30–35, #41, #42, #51–53; **12.1** p. 431; **12.2** p. 436, p. 439; **12.2 LA** p. 440 #1–7; **12.3** p. 441; **12.4** p. 451, p. 454; **12 CR** pp. 462–464 #12, #13, #16–19, #21–25, #35–37, #40–43	**6 CA-B** #8; **10 CA-B** #5; **11 CA-A** #9–11; **11 CA-B** #12; **12 CA-A** #5, #6, #10; **12 CA-B** #4–7
SC.912.P.8.6 Distinguish between bonding forces holding compounds together and other attractive forces, including hydrogen bonding and van der Waals forces.	**12.1** pp. 428–430; **12.1** pp. 432–433; **12.1 LA** p. 434 #1, #2; **12.3 LA** p. 449 #1–4; **12.4** p. 455; **12.4 LA** p. 459 #4; **12 CS** p. 460; **12 CR** pp. 462–463 #1–20, #36–39; **14 EAW** p. 514 EFTC; **14.1** pp. 517–520, p. 523; **14.1 LA** p. 525 #1, #2; **14.2 HOC** p. 531 #2; **14.2 LA** p. 531 #4; **14.3** p. 534, p. 536; **14.3 LA** p. 538 #2; **14 CS** p. 539; **14 CR** pp. 542–544 #1–3, #6, #7, #15, #16, #23–25, #31, #33, #34, #37–41; **19 CR** p. 735 #24	**12 CA-A** #1–5; **12 CA-B** #1–4; **14 CA-A** #1, #3–6; **14 CA-B** #1

STANDARD	STUDENT/TEACHER EDITION	ONLINE RESOURCES
SC.912.P.8.7 Interpret formula representations of molecules and compounds in terms of composition and structure.	**4.2** pp. 113–114; **4.2 LA** p. 115 #5, #6; **4.5** p. 141; **4.5 LA** p. 141 #6; **4 CR** p. 147 #37, #40; **5.1** pp. 162–165, p. 167; **5.1 HOC** p. 168; **5.2** pp. 171–172, p. 175; **5 HOC** p. 172 #1, #2; **5.2 LA** p. 176 #1–6; **5 CS** p. 177; **5 CR** pp. 180–182 #1–19, #23–31; **6 EAW** p. 186 EFTC; **6.1 LA** p. 199 #1, #3–6; **6.2** pp. 207–208; **6.2 HOC** p. 209 #1–3; **6.2 LA** p. 209 #1–6; **6.3** p. 211, pp. 215–216, p. 218, p. 220; **6.3 LA** p. 220 #1–6; **6 CS** p. 221; **6 CR** pp. 223–227 #1–50; **8.1** pp. 262–263, pp. 267–268, p. 270; **8.1 HOC** p. 269; **8.1 LA** p. 271 #2, #3, #6; **8.2 LA** p. 279 #6; **8 CR** pp. 288–292 #3, #6–11, #17–20, #26–29, #31–33, #35; **CI** 8, p. 293; **9 CR** p. 329 #2, #3; **CI** 9, pp. 336–337; **10 CR** p. 373 #9; **11 CR** p. 422 #50, #51; **12.1 LA** p. 434 #1–7; **12.2** p. 438; **12.2 LA** p. 440 #4; **12.3** p. 444, pp. 446–448; **12.3 LA** p. 449 #4; **12.4** pp. 450–451; **12.4** p. 455, p. 457; **12.4 LA** p. 459 #1–5; **12 CS** p. 460; **12 CR** pp. 463–464 #26–35, #44, #45; **CI** 12, p. 465; **14.1** p. 517; **14.1 LA** p. 525 #3; **14.2** p. 531; **14.2 HOC** p. 531 #2; **14.2 LA** p. 531 #4; **14.3** p. 534, p. 536; **14.3 LA** p. 538 #1, #3–5; **14 CR** pp. 542–544 #7, #8, #23–25, #27–30, #32, #36; **20.1** pp. 742–751, pp. 754–755; **20.1 LA** p. 758 #2, #4, #8; **20.2** pp. 759–764; **20.2 LA** p. 765 #1, #5, #6; **20.3** pp. 766–768, p. 770; **20.3 LA** p. 770 #3, #4; **20.4** pp. 771–779; **20.4 LA** p. 780 #2–4; **20 CR** pp. 783–786 #3–8, #15, #24, #29–31, #34, #35, #40, #41, #43–45, #53, #54, #57, #59–61; **21.1** pp. 794–796; **21.1 LA** p. 800 #3; **21.2** pp. 802–804, pp. 806–811; **21 CR** pp. 818–819 #4, #8, #9, #23, #25, #26	**4 CA-A** #2; **5 CA-A** #1–10; **5 CA-B** #1–6, #8–10; **6 CA-A** #1–10; **6 CA-B** #1–7, #9, #10; **8 CA-A** #1, #3, #9, #10; **8 CA-B** #2, #3; **12 CA-A** #7–9; **12 CA-B** #8, #9; **14 CA-A** #4, #7; **14 CA-B** #1, #5–7; **20 CA-A** #1, #2, #7
SC.912.P.8.8 Characterize types of chemical reactions, for example: redox, acid-base, synthesis, and single and double replacement reactions.	**8.2** p. 272, pp. 274–279; **8.2 CIYW** p. 275; **8.2 LA** p. 279 #1–5; **8.3** pp. 280–282, p. 284; **8.3 LA** p. 285 #2–7; **8 CR** pp. 289–292 #12–16, #21–25, #29, #30, #34; **CI** 8, p. 293; **CI** 9, pp. 336–337; **13.2 LA** p. 501 #7, #8; **15.3** p. 581; **15.3 LA** p. 583 #3, #5; **15 CR** pp. 587–589 #22–24, #26, #30, #31, #36, #37, #41, #45; **CI** 15, p. 590; **CI** 16, pp. 626–627; **CI** 17, p. 669; **18.1** pp. 674–675; **18.1 LA** p. 679 #1, #5; **18.2** pp. 680–687; **18.2 LA** p. 687 #1, #2, #5–7; **18.3** p. 690, p. 696; **18.3 HOC** p. 693 #1; **18.3 LA** p. 699 #5–7; **18 CR** pp. 702–704 #2, #9–16, #18–21, #24–28, #32–35; **CI** 18, p. 705; **CI** 21, p. 820	**8 CA-A** #4–7, #8; **8 CA-B** #5–10; **15 CA-A** #8, #9; **15 CA-B** #9; **18 CA-A** #1, #5–8, #10; **18 CA-B** #2, #4, #5; **AGP4**

STANDARD	STUDENT/TEACHER EDITION	ONLINE RESOURCES
SC.912.P.8.9 Apply the mole concept and the law of conservation of mass to calculate quantities of chemicals participating in reactions.	**4.4** p. 131; **6.1** p. 189, pp. 193–196, p. 199; **6.1 HOC** p. 191 #1; **6.2** p. 201, p. 203, p. 206; **6.2 HOC** p. 202 #1–5; **7.2** p. 237; **7.3** p. 241, pp. 243–246; **7.3 LA** p. 247 #1–5; **7 CR** pp. 250–252 #5, #24–28, #31–33; **9 EE** p. 296; **9.1** pp. 298–304; **9.1 LA** p. 304 #1–5; **9.2** p. 306, p. 308, pp. 310–311; **9.2 LA** p. 311 #1–6; **9.3** p. 312, p. 316; **9.3** pp. 323–324, p. 326; **9.3 HOC** p. 323 #1–6; **9.3 LA** p. 326 #1–5; **9 CS** p. 327; **9 CR** pp. 329–335 #1–51; **13 CR** pp. 508–509 #26–28, #38, #41; **CI** 15, p. 590; **CI** 16, p. 626; **CI** 17, p. 669; **CI** 18, p. 705; **CI** 20, p. 787; **CI** 21, p. 820	**7 CA-A** #4–10; **7 CA-B** #6–8; **9 CA-A** #1–10; **9 CA-B** #1–10; **13 CA-A** #7–9; **13 CA-B** #3, #4; **AGP2**
SC.912.P.8.10 Describe oxidation-reduction reactions in living and non-living systems.*	**18 CO** p. 671; **18 EAW** p. 672; **18.1** pp. 674–675, pp. 678–679; **18.1 LA** p. 679 #1–5; **18.2** p. 682, p. 687; **18.2 LA** p. 687 #5–7; **18.3** pp. 688–698; **18.3 LA** p. 699 #5, #6; **18 CR** pp. 702–704 #2, #11, #13, #18, #19, #22, #23, #26–28, #32–35; **20.1** p. 757; **20.1 LA** p. 758 #6; **20 CR** p. 783 #20	**5 CA-B** #7; **15 CA-A** #9; **15 CA-B** #9; **16 CA-A** #1–10; **16 CA-B** #5–10; **18 CA-A** #1, #6, #10
SC.912.P.8.11 Relate acidity and basicity to hydronium and hydroxyl ion concentration and pH.	**13.1** p. 483; **15.3** pp. 576–577; **15.3 LA** p. 583 #5; **15 CR** pp. 587–588 #24, #30, #31; **16 EAW** p. 594 EFTC; **16.1** pp. 597–602, p. 604; **16.1 LA** p. 604 #2, #3, #5, #6; **16.2** pp. 605–609, p. 613; **16.2 HOC** p. 611 #1, #2; **16.2 LA** p. 613 #1–5, #7; **16.3** p. 614, p. 616, p. 618; **16.3 LA** p. 618 #1, #2, #4; **16 CR** pp. 622–625 #4–9, #11–43; **CI** 16, pp. 626–627; **CI** 18, p. 705	
SC.912.P.8.12 Describe the properties of the carbon atom that make the diversity of carbon compounds possible.*	**20.1** pp. 742–744, p. 747; **20.1 LA** p. 758 #1; **20 CR** p. 783 #1, #2; **CI** 20, p. 787; **CI** 21, p. 820	
SC.912.P.8.13 Identify selected functional groups and relate how they contribute to properties of carbon compounds.*	**20.3** p. 766, pp. 769–770; **20.3 LA** p. 770 #1, #2; **20.4** pp. 771–778; **20.4 LA** p. 780 #1; **20 CR** pp. 783–784, p. 786 #9, #31–33, #58, #62; **CI** 20, p. 787; **21.1** p. 795; **21.1 LA** p. 800 #2; **21 CR** p. 818 #5, #6; **CI** 21, p. 820	**20 CA-A** #8–10
SC.912.P.10.1 Differentiate among the various forms of energy and recognize that they can be transformed from one form to others.	**10 EAW** p. 340 EFTC; **10.1** pp. 342–343; **10.1 LA** p. 347 #1, #4, #5; **10.2** pp. 349–350, p. 352, p. 354; **10.2 LA** p. 354 #1, #2; **10.3** p. 356; **10.4** p. 369; **10 CS** p. 370; **10 CR** p. 373 #3–5, #15	**10 CA-B** #1, #7; **AGP1**
SC.912.P.10.2 Explore the Law of Conservation of Energy by differentiating among open, closed, and isolated systems and explain that the total energy in an isolated system is a conserved quantity.*	**10.1** p. 344; **10.1 LA** p. 347 #2; **10.2** p. 348; **10.2 LA** p. 354 #1; **10.3** p. 359; **10.3 CIYW** p. 359; **10 CR** p. 373 #11	
SC.912.P.10.5 Relate temperature to the average molecular kinetic energy.	**10.1** pp. 345–346; **10.2** p. 349, p. 351; **10.2 LA** p. 354 #3–6; **10.3 LA** p. 359 #2–5; **10.4** p. 368; **10.4 LA** p. 369 #7; **10 CR** pp. 373–374 #6, #7, #14, #16, #17, #26, #29–39; **CI** 10, p. 377; **13 CR** p. 508 #32; **17.1** p. 633; **17.1 LA** p. 640 #1, #3–5; **17.3** p. 655; **17.3 LA** p. 661 #3, #4; **17 CR** pp. 665–666 #21, #23, #26, #40, #45, #47	**10 CA-A** #4, #5; **10 CA-B** #3, #8; **17 CA-A** #6; **17 CA-B** #3, #5
SC.912.P.10.6 Create and interpret potential energy diagrams, for example: chemical reactions, orbits around a central body, motion of a pendulum.	**10.1** p. 343, pp. 346–347; **10 CR** p. 373 #8	**10 CA-A** #1; **10 CA-B** #4

STANDARD	STUDENT/TEACHER EDITION	ONLINE RESOURCES
SC.912.P.10.7 Distinguish between endothermic and exothermic chemical processes.	**10.1** pp. 346–347; **10.1 LA** p. 347 #6, #7; **10.2** p. 348; **10.3** p. 358; **10.3 LA** p. 359 #1; **10.4 LA** p. 369 #6; **10 CR** pp. 373–375 #10, #25, #41, #42, #45; **14 CR** p. 544 #35	**10 CA-A** #1, #2; **10 CA-B** #6
SC.912.P.10.8 Explain entropy's role in determining the efficiency of processes that convert energy to work.*	**10.4** pp. 368–369; **10.4 LA** p. 369 #7; **10 CS** p. 370; **10 CR** pp. 373–374 #1, #12, #13, #40	**10 CA-A** #3, #9
SC.912.P.10.9 Describe the quantization of energy at the atomic level.	**11.1 LA** p. 389 #5–7; **11.2** pp. 390–392; **11.2 LA** p. 395 #2, #3; **11.3** pp. 396–399; **11 CR** p. 419, pp. 421–422 #9, 40, #43–47, #50; **CI** 11, p. 423	**11 CA-A** #2; **11 CA-B** #2, #5
SC.912.P.10.10 Compare the magnitude and range of the four fundamental forces (gravitational, electromagnetic, weak nuclear, strong nuclear).*	**19.3 CIYW** p. 725; **19 CR** p. 735 #24	
SC.912.P.10.11 Explain and compare nuclear reactions (radioactive decay, fission and fusion), the energy changes associated with them and their associated safety issues.*	**19.1** pp. 710–715, pp. 718–719; **19.1 HOC** p. 720 #1–4; **19.1 LA** p. 720 #2–7; **19.2** p. 721, p. 723; **19.2 LA** p. 723 #1–4; **19.3** pp. 724–726, p. 728, pp. 730–731; **19.3 CE** p. 727; **19.3 CIYW** p. 729; **19.3 LA** p. 731 #1–6; **19 CS** p. 732; **19 CR** pp. 734–736 #2, #5–15, #17–37, #39–45; **CI** 19, p. 737	**19 CA-A** #1–10; **19 CA-B** #2–6
SC.912.P.10.12 Differentiate between chemical and nuclear reactions.	**13.1** p. 474; **19 EAW** p. 708 EFTC; **19.1** pp. 710–711; **19.1 LA** p. 720 #1; **19 CS** p. 732; **19 CR** pp. 734–736 #1, #11, #25, #38	
SC.912.P.10.18 Explore the theory of electromagnetism by comparing and contrasting the different parts of the electromagnetic spectrum in terms of wavelength, frequency, and energy, and relate them to phenomena and applications.	**10.4** p. 364; **11.1** pp. 383–388; **11.1 CIYW** p. 385; **11.1 HOC** p. 386; **11.1 CE** p. 389; **11.1 LA** p. 389 #4; **11.2 LA** p. 395 #1; **11 CS** p. 416; **11 CR** p. 419, p. 421 #2–8, #36–39	**11 CA-B** #1, #3, #4
SC.912.P.12.10 Interpret the behavior of ideal gases in terms of kinetic molecular theory.	**13 EE** p. 468; **13.1** p. 471, pp. 477–478, p. 481, pp. 484–485; **13.1 HOC** p. 486; **13.1 LA** p. 486 #1–7; **13.2** pp. 488–490, p. 492, pp. 494–498, p. 500; **13.2 LA** p. 501 #1–6; **13.3** pp. 502–504; **13 CR** p. 507 #7, #8; **13.3** p. 504; **13.3 LA** p. 504 #1–4; **13 CS** p. 505; **13 CR** pp. 507–510 #2–5, #9–28, #31–49	**13 CA-A** #1–10; **13 CA-B** #1–10; **AGP2**
SC.912.P.12.11 Describe phase transitions in terms of kinetic molecular theory.	**13 EE** p. 468; **14.1 LA** p. 525 #6; **14.2** p. 526, p. 529; **14 CR** pp. 542–544 #4, #5, #12–14, #16, #17, #26, #33, #34; **CI** 14, p. 545; **17.3** pp. 659–661; **17.3 LA** p. 661 #7; **17 CR** p. 666 #33–37	**14 CA-A** #4; **14 CA-B** #3, #4; **17 CA-A** #8
SC.912.P.12.12 Explain how various factors, such as concentration, temperature, and presence of a catalyst affect the rate of a chemical reaction.	**8 CR** p. 288 #2; **17.1** pp. 632–633; **17.1 CIYW** p. 634; **17.1 HOC** p. 640 #1–3; **17.1 LA** p. 640 #1–3; **17.2** p. 641; **17.3** p. 651, p. 653, p. 655, pp. 659–661; **17.3 LA** p. 661 #1–5; **17 CR** pp. 664–668 #3, #5, #10, #11, #20–29, #38, #46, #47, #50–52, #54, #55, #57, #59; **21.1** pp. 799–800; **21.1 LA** p. 800 #6, #7; **21.2** p. 805; **21 CR** pp. 818–819 #16, #20–22, #45, #47, #48	**17 CA-A** #4–7; **17 CA-B** #2, #8; **21 CA-A** #4
SC.912.P.12.13 Explain the concept of dynamic equilibrium in terms of reversible processes occurring at the same rates.	**14.2** pp. 527–528; **14 CR** p. 543 #21; **17.1** pp. 636–639; **17.1 LA** p. 640 #7; **17.2** pp. 641–642, p. 646; **17.2 LA** p. 646 #1, #2, #5; **17.3** pp. 651–652, pp. 654–655; **17.3 LA** p. 661 #1, #2, #5–7; **17 CS** p. 662; **17 CR** pp. 664–668 #14–16, #18, #20, #22, #30, #33–37, #41–45, #50–53, #56, #58	**17 CA-A** #1–4, #8; **17 CA-B** #4, #5, #8; **AGP4**

Additional Standards for Chemistry 1

The following table includes **Florida's Benchmarks for Excellent Student Thinking (B.E.S.T.) Standards** and the **English Language Development (ELD) Standards** associated with Chemistry 1.

CHEMISTRY 1	
STUDENT/TEACHER EDITION	**ONLINE RESOURCES**
MA.K12.MTR.1.1 Actively participate in effortful learning both individually and collectively. Mathematicians who participate in effortful learning both individually and with others: • Analyze the problem in a way that makes sense given the task. • Ask questions that will help with solving the task. • Build perseverance by modifying methods as needed while solving a challenging task. • Stay engaged and maintain a positive mindset when working to solve tasks. • Help and support each other when attempting a new method or approach. **Clarifications:** Teachers who encourage students to participate actively in effortful learning both individually and with others: • Cultivate a community of growth mindset learners. • Foster perseverance in students by choosing tasks that are challenging. • Develop students' ability to analyze and problem solve. • Recognize students' effort when solving challenging problems.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to participate in effortful learning. For example:* **1.2** pp. 10–14; **1.3 CIYW** p. 18; **1.4** pp. 20–21; **1 EAW** p. 4 EFTC; **1 CR** pp. 24–25 #8, #21, **3.3** p. 76–79, p. 81; **6.1** p. 199; **13.2** pp. 487–491; **13.2 LA** p. 501 #1; **9.2 LA** p. 311 #3; **9.3** p. 317, p. 319, p. 321; **15.3** p. 570; **15.3 LA** p. 581 #1; **20 CS** p. 779	
MA.K12.MTR.2.1 Demonstrate understanding by representing problems in multiple ways. Mathematicians who demonstrate understanding by representing problems in multiple ways: • Build understanding through modeling and using manipulatives. • Represent solutions to problems in multiple ways using objects, drawings, tables, graphs and equations. • Progress from modeling problems with objects and drawings to using algorithms and equations. • Express connections between concepts and representations. • Choose a representation based on the given context or purpose. **Clarifications:** Teachers who encourage students to demonstrate understanding by representing problems in multiple ways: • Help students make connections between concepts and representations. • Provide opportunities for students to use manipulatives when investigating concepts. • Guide students from concrete to pictorial to abstract representations as understanding progresses. • Show students that various representations can have different purposes and can be useful in different situations.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to represent problems in multiple ways. For example:* **1.2** p. 12; **1.2 CIYW** p. 13; **6.1 LA** p. 199 #1; **6.2 HOC** p. 202 #1–5; **6 CS** p. 221; **6 CR** p. 223 #1; **7.3 HOC** p. 243 #1, #2; **8.1** p. 269; **8.1 LA** p. 271 #3; **8.2 LA** p. 279 #3, #6; **9.3 HOC** p. 323 #1–6; **9 CR** pp. 331–332, p. 335 #18, #31, #51; **11.1** p. 387; **12.4 HOC** p. 452 #1–3; **12.4** pp. 453–455; **12 CS** p. 460; **CI** 19, p. 737; **CI** 20, p. 787	

STUDENT/TEACHER EDITION	ONLINE RESOURCES
MA.K12.MTR.3.1 Complete tasks with mathematical fluency. Mathematicians who complete tasks with mathematical fluency: • Select efficient and appropriate methods for solving problems within the given context. • Maintain flexibility and accuracy while performing procedures and mental calculations. • Complete tasks accurately and with confidence. • Adapt procedures to apply them to a new context. • Use feedback to improve efficiency when performing calculations. **Clarifications:** Teachers who encourage students to complete tasks with mathematical fluency: • Provide students with the flexibility to solve problems by selecting a procedure that allows them to solve efficiently and accurately. • Offer multiple opportunities for students to practice efficient and generalizable methods. • Provide opportunities for students to reflect on the method they used and determine if a more efficient method could have been used.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to exhibit mathematical fluency. For example:* **3.1 LA** p. 67 #2, #4; **3.2** p. 75; **3.2 LA** p. 75 #6; **3.3** p. 80, p. 87; **3.3 LA** p. 93 #3–6; **3 CR** pp. 96–99 #2–5, #8, #28–35, #40–45, #48, #49, #51, #52, #54–57; **CI** 3, p. 101; **4.1 LA** p. 111 #6; **4.3 HOC** p. 120 #2; **CI** 6, p. 229; **15.1 LA** p. 558 #2; **15.2** pp. 560–561, pp. 563–567, pp. 570–571; **15.2 HOC** p. 567 #1, #3; **15.2 HOC** p. 571 #1–3; **15.2 LA** p. 571 #1–5, #7; **15.3** p. 575, p. 577, pp. 579–581; **15.3 LA** p. 583 #2, #3, #5; **15 CR** pp. 586–588 #9–12, #14–24, #27–31, #35–41, #45; **21 CR** p. 818 #7	**3 CA-A** #7–10; **3 CA-B** #2; **15 CA-A** #2–10; **15 CA-B** #4–9; **AGP1**; **AGP2**; **AGP4**
MA.K12.MTR.4.1 Engage in discussions that reflect on the mathematical thinking of self and others. Mathematicians who engage in discussions that reflect on the mathematical thinking of self and others: • Communicate mathematical ideas, vocabulary and methods effectively. • Analyze the mathematical thinking of others. • Compare the efficiency of a method to those expressed by others. • Recognize errors and suggest how to correctly solve the task. • Justify results by explaining methods and processes. • Construct possible arguments based on evidence. **Clarifications:** Teachers who encourage students to engage in discussions that reflect on the mathematical thinking of self and others: • Establish a culture in which students ask questions of the teacher and their peers, and error is an opportunity for learning. • Create opportunities for students to discuss their thinking with peers. • Select, sequence and present student work to advance and deepen understanding of correct and increasingly efficient methods. • Develop students' ability to justify methods and compare their responses to the responses of their peers.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to discuss their mathematical thinking. For example:* **1.2** p. 12; **Use Mathematics** #4–5 p. 101; **6.1** pp. 188–189, 199; **6 CS** p. 221; **7.3** p. 243; **10 CS** p. 370; **11.1** p. 394; **12 CS** p. 460; **Analyze Data** #3-4 p. 545; **Analyze Data** #1–4 p. 591; **Analyze Data** #1–3 p. 627; **18 EAW** p. 672 EFTC; **17.2 LA** p. 646 #2; **19.1 LA** p. 720 #5–7; **19 CR** p. 735 #19; **21 CR** p. 818 #7	

STUDENT/TEACHER EDITION	ONLINE RESOURCES
MA.K12.MTR.5.1 Use patterns and structure to help understand and connect mathematical concepts. Mathematicians who use patterns and structure to help understand and connect mathematical concepts: • Focus on relevant details within a problem. • Create plans and procedures to logically order events, steps or ideas to solve problems. • Decompose a complex problem into manageable parts. • Relate previously learned concepts to new concepts. • Look for similarities among problems. • Connect solutions of problems to more complicated large-scale situations. **Clarifications:** Teachers who encourage students to use patterns and structure to help understand and connect mathematical concepts: • Help students recognize the patterns in the world around them and connect these patterns to mathematical concepts. • Support students to develop generalizations based on the similarities found among problems. • Provide opportunities for students to create plans and procedures to solve problems. • Develop students' ability to construct relationships between their current understanding and more sophisticated ways of thinking.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to use patterns and structure. For example:* **1.3** pp. 16–17, p. 19; **1.3 CIYW** p. 18; **3.1** pp. 60–62; **3.3** p. 79; **3.3 LA** p. 93 #2; **3 CR** p. 97 #24–27; **CI** 3, p. 101; **6.1 HOC** p. 191 #1; **6.1** p. 193; **9 CO** p. 295; **9 EE** p. 296; **9.1** pp. 298–300; **9.2 LA** p. 311 #3; **10.1** pp. 342–344; **10.1 LA** p. 347 #7; **11.4** p. 410; **11 CR** p. 422 #53; **13.1** pp. 473–474, p. 477, p. 479; **13.2** pp. 487–488; **15 EAW** p. 548 EFTC; **15.2 LA** p. 571 #6; **15.3** p. 572, p. 574; **15.3 LA** p. 583 #1, #4; **CI** 15, p. 591; **16.1** p. 604; **16.2** pp. 608–609, p. 613; **16.2 HOC** p. 611 #2; **16 CR** p. 622, pp. 624–625 #8, #41, #43; **CI** 16, pp. 626–627; **17.1 LA** p. 640 #4, #5, #7; **17.3** pp. 660–661; **17 CR** p. 664, pp. 666–668 #8, #47, #49, #59; **18.3 LA** p. 699 #1, #2; **18 CS** p. 700; **18 CR** p. 702 #5–8; **18 CR** p. 704 #31; **19 EAW** p. 708 EFTC; **19.2** p. 723; **19 CS** p. 732	**16 CA-B** #10; **18 CA-A** #2–4, #10
MA.K12.MTR.6.1 Assess the reasonableness of solutions. Mathematicians who assess the reasonableness of solutions: • Estimate to discover possible solutions. • Use benchmark quantities to determine if a solution makes sense. • Check calculations when solving problems. • Verify possible solutions by explaining the methods used. • Evaluate results based on the given context. **Clarifications:** Teachers who encourage students to assess the reasonableness of solutions: • Have students estimate or predict solutions prior to solving. • Prompt students to continually ask, "Does this solution make sense? How do you know?" • Reinforce that students check their work as they progress within and after a task. • Strengthen students' ability to verify solutions through justifications.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to assess reasonableness of solutions. For example:* **3.3** pp. 76–77; **6.1** p. 199; **7.3** p. 241; **8.1** pp. 262–263, p. 267; **8.1 HOC** p. 269; **8.1 LA** p. 271 #2; **8 CR** p. 288 #9; **13.1** p. 474, p. 478; **15.2** p. 570; **18.1** p. 678; **18.2** p. 684	**8 CA-A** #1; **8 CA-B** #3; **13 CA-B** #10

STUDENT/TEACHER EDITION	ONLINE RESOURCES
MA.K12.MTR.7.1 Apply mathematics to real-world contexts. Mathematicians who apply mathematics to real-world contexts: • Connect mathematical concepts to everyday experiences. • Use models and methods to understand, represent and solve problems. • Perform investigations to gather data or determine if a method is appropriate. • Redesign models and methods to improve accuracy or efficiency. **Clarifications:** Teachers who encourage students to apply mathematics to real-world contexts: • Provide opportunities for students to create models, both concrete and abstract, and perform investigations. • Challenge students to question the accuracy of their models and methods. • Support students as they validate conclusions by comparing them to the given situation. • Indicate how various concepts can be applied to other disciplines.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to apply mathematics to real-world contexts. For example:* **1.1** pp. 6–7; **1.2** p. 12; **3.2** p. 70, p. 74; **Example 3.14** pp. 90–91; **3.3** p. 81, p. 91; **3.3 HOC** p. 93 #2; **3 CR** pp. 96–97 #9–15, #19, #21–23; **4.1 LA** #6 p. 111; **Checkpoint** p. 119; **6 EFTC** p. 186; **6.1 HOC** p. 191; **6.2 HOC** p. 209; **6.2 LA** #1–2 p. 209; **Example 6.15** pp. 219–220; **6 CS** p. 221; **Practice Problem 7.3** p. 245; **9 EE** p. 296; **9.3 LA** p. 326 #2; **10.4 HOC** p. 368 #1–4; **11.2** pp. 394–395; **12 CS** p. 460; **12 CI** p. 465; **13 EE** p. 468; **13.1** p. 477, p. 481, p. 484; **Practice Problem 13.5** p. 483; **13.3** p. 502; **13 CR** p. 507 #11; **15 EFTC** p. 548; **15 CI** pp. 590–591; **16 EAW** p. 594 EFTC; **16.1** p. 602; **16 CR** p. 625 #42; **17.1** p. 633; **17 CS** p. 662; **17 CR** p. 664 #6, #12; **18 EAW** p. 672 EFTC; **19.2** p. 721	
ELA.K12.EE.1.1 Cite evidence to explain and justify reasoning. **Clarifications:** K-1 Students include textual evidence in their oral communication with guidance and support from adults. The evidence can consist of details from the text without naming the text. During 1st grade, students learn how to incorporate the evidence in their writing. 2-3 Students include relevant textual evidence in their written and oral communication. Students should name the text when they refer to it. In 3rd grade, students should use a combination of direct and indirect citations. 4-5 Students continue with previous skills and reference comments made by speakers and peers. Students cite texts that they've directly quoted, paraphrased, or used for information. When writing, students will use the form of citation dictated by the instructor or the style guide referenced by the instructor. 6-8 Students continue with previous skills and use a style guide to create a proper citation. 9-12 Students continue with previous skills and should be aware of existing style guides and the ways in which they differ.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to cite evidence and justify reasoning. For example:* **1 CR** p. 24 #4; **1 CI** p. 27 Analysis #4–5; **2.3 HOC** p. 47; **2.3** p. 49; **2 CI** p. 55 Analysis #1; **3.3** p. 76–77, p. 79; **3 CI** p. 101 Use Mathematics #4; **4.3** p. 120; **4 CI** p. 149 Analysis #5; **5 EE** p. 152; **6.1** p. 192; **6 CI** p. 229 Analysis #1–5; **7.1 LR** #1; **7 CR** p. 250 #2–4; **8 CI** p. 293 Analysis #2; **9.1 LA** p. 304 #2; **10 CR** p. 373 #7; **10 CI** p. 377 Analysis #8; **11 EAW** p. 380 EFTC; **14 EAW** p. 514 EFTC; **14.2 HOC** p. 531; **14 CR** p. 543 #23; **15.3** p. 574–575; **15 CS** p. 584; **17 CI** p. 669 Analysis #2–3; **18 CI** p. 705 Analysis #3	

STUDENT/TEACHER EDITION	ONLINE RESOURCES
ELA.K12.EE.2.1 Read and comprehend grade-level complex texts proficiently. **Clarifications:** See Text Complexity for grade-level complexity bands and a text complexity rubric. https://cpalmsmediaprod.blob.core.windows.net/uploads/docs/standards/best/la/appendixb.pdf	
National Geographic World of Chemistry *is high text complexity. It includes opportunities throughout the program for students to demonstrate that they can read and comprehend the text proficiently. For example:* **1 EAW** p. 4 EFTC; **1.1 LR** p. 9 #3; **1.4 LR** p. 21 #2; **2.2 LR** p. 42 #5; **2.3 LR** p. 50 #7; **2 CR** p. 53 #10–12; **3 CR** p. 99 #56–58; **4 EAW** p. 104 EFTC; **4.1 LR** p. 111 #2; **4.2 LR** p. 115 #2; **4 CR** p. 147 #39; **5 CR** p. 181 #17, 20, 23; **6 EAW** p. 186 EFTC; **6 CR** p. 225 #31–35; **7 CR** p. 252 # 29–30; **9 EAW** p. 296 EFTC; **10.2 LR** p. 354 #1; **12 CR** p. 464 #42; **13.3 LR** p. 504 #2; **13 CR** p. 509 #36; **14 CR** p. 543 #38; **15 EAW** p. 548 EFTC; **16.3 LR** p. 618 #6; **16 CR** p. 624 #36; **17.1 LR** p. 640 #1; **17 CR** p. 666 #47; **19 CR** p. 735 #39; **21 CR** p. 819 #26	
ELA.K12.EE.3.1 Make inferences to support comprehension. **Clarifications:** Students will make inferences before the words infer or inference are introduced. Kindergarten students will answer questions like "Why is the girl smiling?" or make predictions about what will happen based on the title page. Students will use the terms and apply them in 2nd grade and beyond.	
National Geographic World of Chemistry *includes opportunities throughout the program for students make inferences. For example:* **2.3 HOC** p. 47; **3 CR** p. 97 #28; **3 CI** p. 101 Use Mathematics #4; **4.1 LR** p. 111 #3; **4.3** p. 119; **4.5** p. 140; **5.1 LR** p. 168 #2, 6; **8.2 LR** p. 279 #5; **8 CR** p. 288 #1–2; **9 CR** p. 331 #19; **10 CI** p. 377 Analysis #8; **11.2 LR** p. 395 #1; **11 CR** p. 422 #14, #53; **13 CR** p. 507 #8; **14.2 LR** p. 531 #1; **14 CS** p. 539; **14 CR** p. 543 #22; **15.3** p. 575; **15.3 LR** p. 583 #4; **16.3 LR** p. 618 #5; **Example 19.2** p. 715; **19.2 LR** p. 723 #2; **20.4 LR** p. 780 #3	
ELA.K12.EE.4.1 Use appropriate collaborative techniques and active listening skills when engaging in discussions in a variety of situations. **Clarifications:** In kindergarten, students learn to listen to one another respectfully. In grades 1-2, students build upon these skills by justifying what they are thinking. For example: "I think _____ because _____." The collaborative conversations are becoming academic conversations. In grades 3-12, students engage in academic conversations discussing claims and justifying their reasoning, refining and applying skills. Students build on ideas, propel the conversation, and support claims and counterclaims with evidence.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to collaborate and engage in active listening. For example:* **1.2** p. 12, p. 21; **1.4 LA** p. 21 #1; **1 CS** p. 22; **1 CI** p. 27 Analysis #1; **2.3 HOC** p. 47; **2 CI** p. 55; **3 CS** p. 94; **5.2 HOC** p. 172; 7.3 p. 243; **8 CI** p. 293; **9 CS** p. 327; **10 CS** p. 370; **11.4 HOC** p. 414; **13 CS** p. 505; **15 CI** p. 591 Analysis #4; **16.2 HOC** p. 611; **20 CI** p. 785; **21 CS** p. 813	

STUDENT/TEACHER EDITION	ONLINE RESOURCES
ELA.K12.EE.5.1 Use the accepted rules governing a specific format to create quality work. **Clarifications:** Students will incorporate skills learned into work products to produce quality work. For students to incorporate these skills appropriately, they must receive instruction. A 3rd grade student creating a poster board display must have instruction in how to effectively present information to do quality work.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to use accepted rules to create quality work. For example:* **1.2** p. 14; **2.3** p. 49; **2 CI** p. 55 Analysis #1–2; **3 CS** p. 94; **3 CI** p. 101 Analysis #2; **Example 4.1** p. 114; **4.2 LR** p. 115 #6; **4.4 LR** p. 133 #5–6, 8; **5.1 HOC** p. 168; **7.2 LR** p. 239 #1; **7.3 LR** p. 247 #1; **8 CI** p. 293 Analysis #2; **9 CS** p. 327; **10.1 LR** p. 347 #4; **10 CS** p. 370; **13 CS** p. 505; **17 CI** p. 669 Something Extra #1; **18.2 LR** p. 687 #3–4; **20 CI** p. 787 Procedure #6, Analysis #1; **21 CS** p. 813; **21 CR** p. 819 #27	
ELA.K12.EE.6.1 Use appropriate voice and tone when speaking or writing. **Clarifications:** In kindergarten and 1st grade, students learn the difference between formal and informal language. For example, the way we talk to our friends differs from the way we speak to adults. In 2nd grade and beyond, students practice appropriate social and academic language to discuss texts.	
National Geographic World of Chemistry *includes opportunities throughout the program for students to use appropriate voice and tone when speaking or writing. For example:* **1.2** p. 14; **1 CS** p. 22; **2.3 HOC** p. 47; **3.3 HOC** p. 89; **3 CS** p. 94; **5.2 HOC** p. 172; **6.2 HOC** p. 202; **7.3** p. 243; **8 CI** p. 293 Procedure #1; **9 CS** p. 327; **10.1 LR** p. 347 #4; **10 CS** p. 370; **11 CI** p. 423 Something Extra; **13 CS** p. 505; CI 20 p. 785; **20 CI** p. 787 Procedure #6, Analysis #1; **21 CS** p. 813	
ELD.K12.ELL.SC.1 English language learners communicate information, ideas and concepts necessary for academic success in the content area of Science.	
1 EAW p. 5; **1.4** p. 20; **1.4** p. 21; **1 Summary** p. 23; **2 CA** p. 53; **2 CO** p. 28; **2.1** p. 33; **2.1** p. 34; **2.2** p. 38; **2.3** p. 48; **3 CO** p. 56; **3.3** p. 78; **3.3** p. 86; **4.3** p. 119; **4.3** p. 121; **4.4** p. 125; **4.5** p. 141; **5.1** p. 166; **6.1** p. 199; **6.3** p. 211; **6.3** p. 214; **6 CA** p. 223; **7 CO** p. 230; **7.2** p. 237; **7.3** p. 241; **7.3** p. 244; **8.1** p. 259; **8.1** p. 268; **8.1** p. 270; **8.2** p. 274; **9.1** p. 298; **9.2** p. 311; **9.3** p. 319; **10.3** p. 355; **10.4** p. 361; **11.1** p. 383; **11.4** p. 402; **11.4** p. 411; **12.1** p. 430; **12.1** p. 432; **12.2** p. 438; **12.3** p. 446; **12.3** p. 448; **13.1** p. 474; **13.1** p. 484; **14.1** p. 519; **14.2** p. 529; **14.3** p. 533; **15.2** p. 561; **15.3** p. 572; **15.3** p. 578; **16 EAW** p. 595; **16.1** p. 600; **16.2** p. 612; **16.3** p. 615; **17.1** p. 634; **17.2** p. 647; **17.3** p. 651; **18.1** p. 674; **18.3** p. 693; **19.1** p. 719; **19.3** p. 728; **20.1** p. 746; **20.1** p. 751; **20.1** p. 752; **20.2** p. 762; **20.3** p. 766; **21.1** p. 801; **21.2** p. 802	

STUDENT/TEACHER EDITION	ONLINE RESOURCES
ELD.K12.ELL.SI.1 English language learners communicate for social and instructional purposes within the school setting.	
1.4 p. 20; **1.4** p. 21; **1 Summary** p. 23; **2 CO** p. 28; **2.1** p. 33; **2.1** p. 34; **2.3** p. 48; **2 CA** p. 53; **3 CO** p. 56; **3.1** p. 61; **3.1** p. 63; **3.3** p. 78; **3.3** p. 86; **4.1** p. 108; **4.1** p. 110; **4.3** p. 119; **4.3** p. 121; **4.4** p. 125; **5.1** p. 155; **5.1** p. 161; **5.1** p. 166; **6.1** p. 188; **6.1** p. 199; **6.3** p. 211; **6.3** p. 214; **6 CA** p. 223; **7 CO** p. 230; **7.2** p. 237; **7.3** p. 241; **7.3** p. 244; **8.1** p. 259; **8.1** p. 268; **8.1** p. 270; **8.3** p. 282; **8.3** p. 285; **9 CA** p. 331; **9.2** p. 311; **9.3** p. 319; **10.2** p. 353; **10.3** p. 355; **10.3** p. 356; **10.4** p. 364; **11 EAW** p. 381; **11.2** p. 395; **11.4** p. 402; **11.4** p. 411; **12.1** p. 432; **12.3** p. 443; **12.3** p. 448; **13.1** p. 470; **13.1** p. 474; **13.1** p. 484; **13.2** p. 496; **14.1** p. 519; **14.1** p. 524; **14.2** p. 526; **14.2** p. 529; **14.3** p. 533; **15.1** p. 552; **15.2** p. 561; **15.2** p. 569; **15.3** p. 572; **15.3** p. 578; **16.1** p. 600; **16.2** p. 612; **16.3** p. 615; **17.1** p. 639; **17.2** p. 647; **17.3** p. 651; **17.3** p. 661; **18.1** p. 674; **18.2** p. 685; **18.3** p. 693; **19.1** p. 719; **19.2** p. 722; **19.3** p. 726; **19.3** p. 728; **20.1** p. 746; **20.1** p. 751; **20.2** p. 762; **21.1** p. 801; **21.2** p. 812	