Criteria for Instructional Materials Review

Category 3: 2014 Science Standards (NGSS) – Grades 6-8

1. **Alignment to the 2014 Science Standards (NGSS)**

The instructional materials align with the conceptual shifts of the NGSS:

**FOCUS**

Materials focus on in-depth learning of the NGSS disciplinary core ideas while engaging students in the scientific and engineering practices and connecting to crosscutting concepts in the context of authentic and content-appropriate science, and facilitate students developing a deeper understanding and application of scientific knowledge and the ability to think and reason scientifically while investigating complex ideas and solving problems.

1a. In each 6-8 grade level, both student and educator materials, when used as designed, provide opportunities to develop and use specific elements of the practice(s) to make sense of phenomena and to design solutions to problems.

   *Earth and Space Science, TE p. 115 – Mini-lab*
   *Earth and Space Science, TE p. 231 – Skill Lab*
   *Life Science, TE p. 123 – Math Skills*
   *Physical Science, TE p. 155 – STEM Project (STEM project is found online for the opening of Unit 2)*
   *Physical Science, TE p. 196 – PBL Cookin’ with the Sun (PBL is found online for Chapter 6, Lesson 1)*

1b. In each 6-8 grade level, both student and educator materials, when used as designed, provide opportunities to develop and use specific elements of the crosscutting concept(s) to make sense of phenomena and to design solutions to problems.

   *Earth and Space Science, TE p. 4*
   *Earth and Space Science, TE p. 66*
   *Life Science, TE p. 662*
   *Life Science, TE p. 482*
   *Physical Science, TE p. 370*

1c. In each 6-8 grade level, both student and educator materials, when used as designed, provide opportunities to develop and use specific elements of the disciplinary core idea(s) to make sense of phenomena and to design solutions to problems.

   *Earth and Space Science, TE p. 156*
   *Earth and Space Science, TE p. 93*
   *Life Science, TE p. 626*
   *Physical Science, TE p. 134*
   *Physical Science, TE p. 132*

1d. In each 6-8 grade level, in student and educator materials, when used as designed the three-dimensions work together to support students to make sense of phenomena and to design solutions to problems.

   *Earth and Space Science, TE p. 194*
   *Earth and Space Science, TE p. 714*
   *Life Science, TE p. 128 (PBL – It’s in the Cards – Online)*
   *Physical Science, TE p. 220*
   *Physical Science, TE p. 155 STEM Project – (Project is found online)*

*iScience* was designed to create a highly interactive environment for learning middle school science to help motivate and engage students in three-dimensional learning. Designed for today’s tech savvy middle school students, *iScience* offers a balance of hands-on investigations, rigorous science content, and engaging, real-world applications making *iScience* fun, exciting and stimulating.

INSPIRE students with meaningful, relevant learning experiences
INQUIRE into the key concepts of science through our 5E lesson structure
INTERACT with exciting digital tools that encourage students to practice science
INVENT new solutions and build 21st century skills through new engineering/design activities

*iScience* is a flexible program that allows for multiple pathways to successful teaching. The Student Edition, Science Notebook, Reading Essentials and the Teacher Edition are the core pieces.

Each chapter and lesson begins with Essential Questions that focus student learning and inquiry questions that involve critical thinking for students. Each lesson includes a Launch Lab for student discovery and interaction with phenomenon. In
addition, project-based learning activities and the Science and Engineering Practices Handbook provide student engagement in the three dimensions of disciplinary core ideas, science and engineering practices, and cross-cutting concepts. The inquiry activities and labs are focused on phenomenon questions. The inclusion of real world relevance motivates students to explore the impact of earth science on the world.

The 3-course series (Integrated Course 1, 2, & 3) contains many examples of the cross-cutting concepts, science and engineering practices, and discipline-specific core ideas outlined in the Next Generation Science Framework. Examples are listed below:

Cross-cutting concepts:
- Two pages at the beginning of each unit focus on cross-cutting concepts such as modeling, patterns, and systems.
- Concepts such as modeling, interpreting cause and effect, determining patterns, and recognizing scale, proportion and quantity are practiced throughout the program in activities and assessments.
- Skill Labs integrated in each chapter focus on cross-cutting concepts.
- The problem-based learning activities and WebQuests engage students in the application of the cross-cutting concepts.

Science and Engineering Practices:
- The Nature of Science chapter at the beginning of each book describes the processes of science and allows for detailed analysis of these practices.
- Laboratory activities throughout the program emphasize science practices including asking questions, using models, planning and carrying out investigations, analyzing and interpreting data, designing solutions, gathering and communicating data, and critical thinking.
- STEM Activities for each unit provide opportunities for longer, project-based learning practices. Each activity requires applications of engineering, math, and science. These activities are available online.
- The project-based learning activities engage students in all of the Science and Engineering practices, as well as many of the cross-cutting concepts.

Discipline-Specific Core Ideas
- The concepts outlined in the Framework are covered in detail within each iScience book (Life, Earth and Space, and Physical).

The iScience 3-course series falls well within the recommended text complexity and expectations of the Common Core State Standards. Lexile scores are validated scores compiled by Metametrics, the company that provides this type of assessment. The Lexile Framework for Reading matches reader ability and text difficulty, allowing individualized monitoring of progress. Lexile measures are based on two well-established predictors of how difficult a text is to comprehend: semantic difficulty (word frequency) and syntactic complexity (sentence length). Lexile measures allow educators to manage reading comprehension. Matching a reader’s Lexile measure to a text with the same Lexile measure leads to an expected 75 percent comprehension rate – not too difficult to be frustrating, but difficult enough to be challenging and to encourage reading progress.

Cross-cutting concepts are themes that appear throughout all branches of science and engineering. These are not directly correlated but are found implicitly in the other correlations listed on the page. The cross-cutting concepts are found within the problem-based learning activities, the performance tasks, the WebQuests, and many of the inquiry exercises. Patterns, models, energy flow, and the other cross-cutting concepts are experienced throughout.

The 3-course series (Earth and Space, Life, and Physical) contains many examples of the use of DCIs from various disciplines in the explanations and the problem-solving activities throughout the program. Concepts appear across all content areas. Students have to apply concepts and ideas from various disciplines in order to draw conclusions and to construct coherent arguments from evidence.
The instructional materials align with the conceptual shifts of the NGSS:

**RIGOR**

Materials support and guide in-depth instruction in the three intertwined NGSS dimensions*, support the integration of conceptual understanding linked to explanations and empirical investigations that allow students to evaluate knowledge claims and develop procedural skills while engaging in authentic and content-appropriate scientific inquiry and engineering design learning experiences, and provide opportunities for students to engage in practice, discourse, and reflection in multiple interconnected and social contexts.

**2a.** Materials support the development of students’ conceptual understanding of the natural world through experiential investigations by providing three-dimensional opportunities to fully engage and interpret scientific explanations.

*Earth and Space Science*, TE p. 432
*Earth and Space Science*, TE p. 352
*Life Science*, TE p. 829
*Physical Science*, TE p. 334
*Physical Science*, TE p. 648

**2b.** Materials support the development of students’ conceptual understanding of the designed world through authentic engineering practices to define and solve problems by providing three-dimensional opportunities to fully engage and apply scientific knowledge.

*Earth and Space Science*, TE p. 40 (Gravity Glue – PBL is online)
*Earth and Space Science*, TE p. 714
*Life Science*, TE p. 480 (STEM Project is online – Model Systems)
*Physical Science*, TE p. 146
*Physical Science*, TE p. 706

**2c.** Materials include authentic and content-appropriate practices for student-generated claims with scientific evidence to make sense of phenomena and engineering design through evaluating and developing procedural skills.

*Earth and Space Science*, TE p. 457
*Earth and Space Science*, TE p. 437
*Life Science*, TE p. 8 (It’s Alive or is It – PBL is online)
*Physical Science*, TE p. 68
*Physical Science*, TE p. 138

**2d.** Materials are designed so that educators and students spend sufficient time engaging in the science and engineering practices to better understand the nature and development of scientific knowledge in multiple interconnected and social contexts through student-generated discourse.

*Earth and Space Science*, TE p. 416
*Earth and Space Science*, TE p. 667
*Life Science*, TE p. 49
*Physical Science*, TE p. 334
*Physical Science*, TE p. 442-443

Designed for today’s tech savvy middle school students, *iScience* offers a balance of hands-on investigations, rigorous science content, and engaging, real-world applications.

Whether the district’s need reflects a hybrid of print with online resources or a fully digital course, *iScience* can help in the transition toward the goal of developing the next generation of learners. *iScience* connects the science classroom to the student’s world through engaging graphic novel-style features and thought-provoking questions that encourage them to relate the science concepts to the world around them. The inquiry-based 5E lesson cycle provides active, hands-on explorations of the concepts. The Student Edition is available both as a textbook and as an interactive digital e-book, providing today's digital natives with the resources they need in whatever format they want to use. Because the true key to student success is the teacher, we have a robust professional learning environment that offers teachers relevant and practical information that is directly connected to the program you use. Our easy-to-use tools support professional learning with 24/7 access and meet district’s continuous improvement objectives.

Conceptual understanding in *iScience* is developed through a scaffolded approach starting with the Big Idea for each chapter. Each lesson begins with Essential Questions, and each learning object is then built on this framework.
iScience continually presents meaningful and relevant learning experiences. Units begin with STEM activities which address the need for students rising to the challenge of 21st century careers. Page Keeley Science Probes challenge student prior knowledge, identify misconceptions, and immediately get students invested in the lesson. Each chapter in iScience begins with “The Big Idea”, which is the overarching concept of the chapter. Each lesson begins with the Essential Questions, which are the question students must, above all else, be able to answer after the lesson is complete. High interest readings are scattered throughout iScience and make connections to prior knowledge, vocations, and the world outside of the science classroom. The Teacher Toolbox feature consistently provides teachers with fun facts, cross-curricular connections, and demonstrations that make science come alive.

The problem-based learning activities are focused on students making sense of real world and relevant problems. The inquiry activities, including the skill practices labs, have students using the practices and integrating the cross-cutting concepts. These activities are one of the several options in the program to focus on the performance expectations.

The combination of problem based learning activities, STEM projects, stem quests, WebQuests, and inquiry activities provide students with multiple opportunities to experience relevant phenomena in both representation format and in firsthand experience. The problems are connected to their world. They have to make choices, analyze data, and draw conclusions as they move toward a solution.

The iScience 3-course series falls well within the recommended text complexity and expectations of the Common Core State Standards. Lexile scores are validated scores compiled by Metametrics, the company that provides this type of assessment. The Lexile Framework for Reading matches reader ability and text difficulty, allowing individualized monitoring of progress. Lexile measures are based on two well-established predictors of how difficult a text is to comprehend: semantic difficulty (word frequency) and syntactic complexity (sentence length). Lexile measures allow educators to manage reading comprehension. Matching a reader’s Lexile measure to a text with the same Lexile measure leads to an expected 75 percent comprehension rate – not too difficult to be frustrating, but difficult enough to be challenging and to encourage reading progress.
The instructional materials align with the conceptual shifts of the NGSS:

**Criterion 3 & 4: COHERENCE**

Learning experiences form a coherent learning progression in which each K-5 student builds competencies in the performance expectations through actively engaging in science and engineering practices and applying cross-cutting concepts to continually build on and revise their knowledge and skills in disciplinary core ideas. Student opportunities are directly connected to the grade-level performance expectations to develop and use specific grade-appropriate elements of three-dimensional learning that are integrated to develop and support students’ sense-making of phenomena and design solutions to problems.

3a. Materials provide strong integration of science and engineering practices, disciplinary core ideas, and crosscutting concepts within each and across grade levels.

- *Earth and Space Science*, TE p. 6G
- *Life Science*, TE p. 82G
- *Physical Science*, TE p. 309G

3b&c. Materials within each unit and course provide coherent learning experiences that help students develop proficiency on a targeted set of three-dimensional performance expectations by intentionally linking prior knowledge and skills as a basis of engagement.

- *Earth and Space Science*, TE p. 108G
- *Life Science*, TE p. 146G
- *Physical Science*, TE p. 158G

3d. Materials within each unit and course focus on the application of authentic and content-appropriate knowledge, skills, and reasoning.

- *Life Science*, TE p. 146 A&B
- *Physical Science*, TE p. 158 A&B

*iScience* is written by a team that includes authors and consultants with over 100 years’ experience, collectively, teaching and consulting at the middle school level. As a result, *iScience* was created so that the sequence of concepts is ordered in a logical and pedagogically sound manner. The content is written by authors who are experts in scientific and educational fields. It is reviewed for accuracy and age-appropriateness by a teacher advisory board, multiple middle school teacher reviewers, and university-level content consultants.

Students build on previous knowledge and skills to gain understanding of more complex processes and concepts. Lessons built around Big Ideas and Essential Questions include real-world connections, and alternative teaching strategies are provided so that science is accessible to all students. In addition, the teaching strategies presented in the Teacher Edition support the overarching principles of science inquiry, scientific discussion and debate, formative and summative assessment of student understanding, and connection to other areas of learning.

*iScience* was built with a three-phased research approach:

**Developmental (Pre-Development)**
- National, state, and local standards evaluations
- Relevant data from recognized sources
- Qualitative market research
- Current academic content research

**Formative (Pre-Publication)**
- Pedagogical research base
- Classroom field tests
- Teacher advisory boards
- Academics, authors, consultants, and reviewers
Summative (Pre-Publication)

- Evidence of increased test scores
- Quasi-experimental program efficacy research
- Longitudinal studies
- Qualitative program evaluations

*iScience* is a flexible program that allows for multiple pathways to successful teaching. The Student Edition, Science Notebook, Reading Essentials, and the Teacher Edition are the core pieces. Each chapter and lesson begins with Essential Questions that focus student learning and inquiry questions that involve critical thinking for students. Each lesson includes a Launch Lab for student discovery. In addition, project-based learning activities and the Science and Engineering Practices Handbook provide student engagement in the three dimensions of disciplinary core ideas, science and engineering practices, and cross-cutting concepts. The inquiry activities and labs are focused on phenomenon questions. The inclusion of real world relevance motivates students to explore the impact of earth science on the world.

The 3-course integrated series contains many examples of the cross-cutting concepts, science and engineering practices, and discipline-specific core ideas outlined in the Next Generation Science Framework.

Crosscutting Concepts are themes that appear throughout all branches of science and engineering. These are not directly correlated but are found implicitly in the other correlations listed on the page. The cross-cutting concepts are found within the problem based learning, the performance tasks, the WebQuests and STEM quests, and many of the inquiry exercises. Patterns, models, energy flow and the other crosscutting concepts are experienced throughout.

Examples are listed below:

**Cross-cutting concepts**

Two pages at the beginning of each unit focus on cross-cutting concepts such as modeling, patterns, and systems. Concepts such as modeling, interpreting cause and effect, determining patterns, and recognizing scale, proportion, and quantity are practiced throughout the program in activities and assessments.

**Science and Engineering Practices**

The Nature of Science chapter at the beginning of each book describes the processes of science and allows for detailed analysis of these practices in the Case Study. Laboratory activities throughout the program emphasize science practices including asking questions, using models, planning and carrying out investigations, analyzing and interpreting data, designing solutions, gathering and communicating data, and critical thinking.

STEM Activities for each unit provide opportunities for longer, project-based learning practices. Each activity requires applications of engineering, math, and science. These activities are available online.

**Discipline-Specific Core Ideas**

The concepts outlined in the Framework are covered in detail within each *iScience* book (Life, Earth and Space, and Physical).

The *iScience* 3-course series falls well within the recommended text complexity and expectations of the Common Core State Standards. Student Edition Lexile scores are listed below. These are validated scores compiled by Metametrics, the company that provides this type of assessment. The Lexile Framework for Reading matches reader ability and text difficulty, allowing individualized monitoring of progress. Lexile measures are based on two well-established predictors of how difficult a text is to comprehend: semantic difficulty (word frequency) and syntactic complexity (sentence length). Lexile measures allow educators to manage reading comprehension. Matching a reader’s Lexile measure to a text with the same Lexile measure leads to an expected 75 percent comprehension rate – not too difficult to be frustrating, but difficult enough to be challenging and to encourage reading progress.
4. Materials are directly connected to the appropriate grade-level performance expectations to develop and use specific science and engineering practices, disciplinary core ideas, and crosscutting concepts that are integrated to develop and support students’ sense-making of phenomena and design solutions to problems.

*Earth and Space Science, TE p. 282*

*Earth and Space Science, TE p. 714*

*Life Science, TE p. 225 (STEM Project is located online)*

*Physical Science, TE p. 61 (PBL Putting the Shot in Motion is online)*

*Physical Science, TE p. 298*

As students begin a unit of study there is a review of one of the science and engineering practices or cross-cutting concepts. The teacher then can assign a hands-on activity that involves that practice or concept. This could be the overarching STEM project that involves many of the practices and concepts around the DCIs in the unit and engages the student in authentic scenarios requiring them to create explanations.

Each chapter begins with an essential question that addresses a phenomenon and a visual representation of tied to that phenomenon in the world around them. Thoughtful inquiry questions are raised to engage the student in consideration of the phenomenon. When progressing forward, multiple types of activities are integrated to provide context to explore ideas, and allow students to engage in both consideration and application of the practices both in theoretical and authentic and meaningful applications. Teacher and student can choose from a variety of activities including:

- **Launch Labs** – quick thought provoking investigations centered on exploring phenomena.
- **Mini-labs and full chapter labs** that apply practices in exploring scientific ideas.
- **Skill labs** that focus on a specific practice or concept within the context of a DCI.
- **WebQuests** – authentic and meaningful case studies where students create explanations.
- **Real world features** that explore scientific phenomenon, the current work of scientists, and historical discoveries. These features have an extend feature to allow students to explore the content further.
- **Project based learning activities** that engage students in the crux of NGSS and the intent of meaningful scenarios. All of these labs and activities prepare students to address the assessment anchors.

The combination of problem-based learning activities, STEM projects, WebQuests, and inquiry activities provide students with multiple opportunities to experience relevant phenomena in both representation format and in firsthand experience. The problems are connected to their world. They have to make choices, analyze data and draw conclusions as they move toward a solution and construct an explanation or argument using evidence.
The instructional materials align with the conceptual shifts of the NGSS:

**Criterion 6 & 7: COHERENCE**

The interdependence and the influence of science, engineering and technology on society and the natural world along with the understanding of the nature of science are interconnected to the content being addressed.

6a. Materials integrate the **interdependence** of science, engineering, and technology as significant elements in learning experiences.

*Earth and Space Science, TE p. 705*
*Earth and Space Science, TE p. 683-684*
*Life Science, TE p. 4-5*
*Physical Science, TE p. 668*
*Physical Science, TE p. 167*

6b. Materials demonstrate the **influence** of engineering, technology, and science on society and the natural world as significant elements in learning experiences.

*Earth and Space Science, TE p. 512*
*Earth and Space Science, TE p. 457*
*Life Science, TE p. 419*
*Physical Science, TE p. 280*
*Physical Science, TE p. 571*

The combination of problem based learning activities, STEM projects, STEM quests, WebQuests, and inquiry activities provide students with multiple opportunities to experience relevant phenomena in both representation format and in firsthand experience. The problems are connected to their world. They have to make choices, analyze data and draw conclusions as they move toward a solution.

Connections to science, technology, and engineering are prevalent throughout the curriculum, such as when students are engaged in numerous activities in which they must employ the design process or pose a solution to a real-world problem.

Completion of laboratory or field work greatly enhances the student’s understanding and experience while using the *iScience* program. Therefore, multiple and varied laboratory activities are integrated within each chapter of the program and relate directly to the content being studied. This, in addition to the other integrated activities (both physical and virtual), give students the opportunities to explore ideas with fellow students and teachers in a meaningful context.

There are a number of the hands on investigations that are “Design Your Own” and require students to develop testable questions and to design experiments using scientific inquiry. These activities, along with the STEM activities and project-based learning activities, give students ample opportunity to express themselves, consider other ideas, revise their thinking, and represent their thinking both verbally and in writing. There is a strong emphasis on 21st century skills throughout and have the option to involve technology. Students present their findings and explanations in a variety of media and scenarios that emulate what a scientist or engineer would be required to do. When students are able to express their ideas and then listen or read the ideas of others, it helps them evaluate the merit of their arguments and rationale.
7. Materials integrate understandings about the nature of science as significant elements in learning experiences.

From page 11 of OR-IMET form, need to be sure answer includes 6 and 7

*Earth and Space Science, TE p. 212-213*
*Earth and Space Science, TE p. 404-405*
*Life Science, TE p. 226-227*
*Physical Science, TE p. NOS 2-26*
*Physical Science, TE p. NOS 27-28*

Students are presented with multiple opportunities to explore and analyze real-world problems. The content of the program is written in the terms of understanding the world around us and the science behind it. With this in mind, students are presented with multiple opportunities to explore and analyze real-world problems and to look at science in authentic scenarios.

A case study is presented at the end of the Nature of Science chapter at the beginning of the book. The students are challenged to apply science and engineering practices in a meaningful and consistent way. As they begin a unit of study, there is a review of one of the science and engineering practices or cross-cutting concepts. The teacher can assign a hands-on activity that involves that practice or concept, and the unit has an overarching STEM project that involves many of the practices and concepts around the DCIs in the unit and engages the student in authentic scenarios and requires them to create explanations.

Each chapter begins with an essential question that addresses a phenomenon and a visual representation tied to that phenomenon in the world around them and thoughtful inquiry questions are raised to engage the student in consideration of the phenomenon. Each lesson then encourages the students to go deeper, in both inquiry and in researching the DCIs, to bring the nature of science to bear in the learning experiences they participate in and in reflecting on the Big Idea and the essential questions that surround the phenomenon.
Criterion 5, 8 & 9: COHERENCE
Instructional sequence provides multiple approaches to achieve proficiency of the performance expectations and a logical progression of diverse instructional strategies for student learning.

5. Materials provide learning opportunities that include instructional strategies to facilitate three-dimensional learning.
   Earth and Space Science, TE p. 278 (mini-lab)
   Earth and Space Science, TE p. 156
   Life Science, p. 225 (STEM Activity is found online)
   Physical Science, TE p. 61 (PBL on Gravity is online)
   Physical Science, TE p. 353

Science was designed to create a highly interactive environment for learning middle school science to help motivate and engage students in three-dimensional learning. Designed for today's tech savvy middle school students, iScience offers a balance of hands-on investigations, rigorous science content and engaging, real-world applications making iScience fun, exciting, and stimulating.

- INSPIRE students with meaningful, relevant learning experiences!
- INQUIRE into the key concepts of science through our 5E lesson structure
- INTERACT with exciting digital tools that encourage students to practice science
- INVENT new solutions and build 21st century skills through new engineering/design activities

iScience is a flexible program that allows for multiple pathways to successful teaching. The Student Edition, Science Notebook, Reading Essentials, and the Teacher Edition are the core pieces.

Each chapter and lesson begins with essential questions that focus student learning. Each lesson includes the beginning Earth Science 4 You. In addition, Project-Based Learning Activities, Science and Engineering Practices Handbook and the Problem Based Learning Worksheets provides students engagement in the three dimensions of disciplinary core ideas, science and engineering practices, and cross cutting concepts. The inquiry activities and labs are focused on phenomenon questions. The inclusion of real world relevance motivates students to explore the impact of earth science on the world.

The progressive nature of the integrated instructional sequence allows for the students to develop proficiency in the DCI's as they prepare for the performance expectations and the varied learning experiences allow students to develop both understanding and skills in a logical progression of introduction of a Big Idea (in essential question format) followed by a phenomenon in visual form. The progression then goes to a launch lab which is about exploring phenomenon without trying to prove content but allowing students to make observations that will impact understanding by using science and engineering skills and by observing cross cutting concepts. The 5 E Lesson plan model allows for engagement and exploration before explanation and then the inquiry activities in multiple forms (hands on investigations, projected based learning, WebQuests, virtual simulations, research, application and reflection) lead to developing proficiency in the performance expectation.

8. Instructional sequence consistently provides multiple opportunities and adequate time for student learning.
From page 12 of the OR-IMET, need to be sure answer includes 5,8, and 9
   Earth and Space Science, TE p. 108 A&B
   Life Science, TE p. 228 A&B
   Physical Science, TE p. 158 A&B

All of the activities, Applying Practices, WebQuests, STEM Online, and inquiry activities contain detailed teacher plans giving the teachers the freedom to give a high level of support or a minimal level of support. The teacher then controls the amount of support and can help students become more independent, draw their own conclusions and learn to cite evidence, and make strong arguments to support the solutions to their problems.

Teacher guidance for providing instructional materials in iScience is provided on each page of the Teacher Edition, both print and on-line. Guiding questions on each page are labeled with Approaching Level, On Level, Below level, and English Language Learner icons to help teachers scaffold their instruction. In addition, each page contains a Differentiated Instruction guide that provides additional strategies for all levels of learners.

Scope and sequence is clearly outlined and learning progressions are identified in teacher support. Standards coverage and
lesson objectives are clearly indicated at the lesson level. Vocabulary is clearly identified in teacher support and student materials. Within the student materials, the vocabulary is highlighted. Integrated iScience was designed to create a highly interactive environment for learning middle school science. Integrated iScience is a flexible program that allows for multiple pathways to successful teaching. The Student Edition, Science Notebook, Reading Essentials and the Teacher Edition are the core pieces. The Fast File Unit Resources contain a variety of resources that are useful for differentiation such as leveled labs and assessments as well as activities that range from remediation for struggling students to challenges for advanced learners. Integrated iScience is also available in multiple formats. There is a print version available as an e-book both online and on disc. It is also available as an online course.

On average, units last approximately 5-6 weeks. There is great flexibility within the iScience program to teach in tradition or block, regular pacing, or “Fast Track” pacing to allow time for other lessons.

9a. Materials use diverse instructional strategies that provide clear purposes for learning experiences (e.g., elicit preconceptions, teach new knowledge, build skills and abilities, and connects to prior knowledge).

Earth and Space Science, TE p. 108 e, f, and h (looks at background knowledge and deals with misconceptions and preconceptions (Page Keeley Probe is online)
Earth and Space Science, TE p. 110-115 deals with new knowledge with multiple strategies
Earth and Space Science, TE p. 111, 114, 115, 124 diverse strategies for new skills and abilities
Earth and Space Science, TE p. 108g, 111, 117 connect to prior knowledge using diverse strategies

9b. Materials use instructional strategies in a logical progression that provides clear purposes for learning experiences (e.g., elicit preconceptions, teach new knowledge, build skills and abilities, and connect to prior knowledge).

Physical Science, TE p. 84H, 85 deals with misconceptions and preconceptions and pre-assessment
Physical Science, TE p. 86 Engage uses a variety of instructional strategies
Physical Science, TE p. 87 Explore uses activities (launch lab)
Physical Science, TE p. 88-91 Explain uses reading, mini-lab, math skills and visual literacy
Physical Science, TE p. 92&93 Evaluate uses multiple assessment opportunities (including digital), Extend has multiple strategies throughout the program.

On the student side:
iScience is organized into units, chapters and lessons, which provide a level of consistency that has been proven effective. The sequence of features is also consistent between every unit. Every unit begins with a Graphic Novel/STEM activity and ends with Standardized Test Practice. Every chapter and lesson has a consistent structure. The narrative has been broken down into manageable “chunks”. Most every page will begin with a heading and end with a period. Each concept is wrapped up on the page, and a new concept will begin on the next page. This is very important to middle school students, many of whom have difficulty continuing a concept after a page flip. The instructional strategies are varied to allow students to engage in the topics in multiple ways, and to create a deeper level of rigor and inquiry as they continue to explore the Disciplinary Core Ideas. There is a mix of research, inquiry in multiple formats, reflection, critical analysis, and application to personal and real world problems. The variety of approaches elicit preconceptions and misconceptions as the student completes the What do you Think on the opening page of the chapter and as the engage in reflection with the Page Keeley Science Probe. They continue with preconceptions and developing new knowledge as they investigate the phenomenon both in the visuals and in the launch lab. As they progress in exploring the big idea they engage in a variety of activities to uncover new knowledge and develop and practice science and engineering skills and connect to both prior and new knowledge related to the Big Ideas.

On the teacher side:
Prior to each unit, teachers have a feature in iScience that helps to organize instruction and save time. These features precede each Chapter and are, in order: Chapter Preview, Labs and Activities, Chapter Resources, Classroom Technology, Science Content Background, Classroom Technology, Science Content Background, Strand Map, and Identifying Misconceptions. Each one of these features is designed to maximize teacher efficiency and lesson success.

Within the lesson, iScience uses the 5E instructional model. The 5E model is a research based and classroom tested model that structures the lesson for both teacher, and even student if desired. The 5E Lesson model in iScience provides not only specific suggestions for each step but also specific resource suggestions. These resource suggestions can then be utilized within the classroom or easily delivered to students through our ConnectED platform.
The instructional materials align with the conceptual shifts of the NGSS:

**Criterion 3 & 10: COHERENCE**

Materials support and guide in-depth instruction in the three intertwined NGSS dimensions, with clear connections to the Common Core State Standards (CCSS) in Mathematics and English Language Arts & Literacy and the Oregon English Language Proficiency Standards.

**3e.** Materials across and throughout grades 6-8 build coherent learning progressions by integrating science and engineering practices, disciplinary core ideas, and crosscutting concepts.

- *Earth and Space Science, TE 683 (STEM Project is online)*
- *Earth and Space Science, TE p. NOS 20 (PBL Pollution is online)*
- *Life Science, TE p. 701 (STEM Project is online)*
- *Physical Science, TE p. 413 (STEM Project is online)*
- *Physical Science, TE p. 69 (PBL Cracking Up is online)*

**3f.** Where appropriate, materials across and throughout grades 6-8 provide multiple disciplinary core ideas and crosscutting concepts that are used together to explain phenomena.

- *Earth and Space Science, TE p. 156*
- *Earth and Space Science, TE p. 432*
- *Life Science, TE p. 447*
- *Life Science, TE p. 349*
- *Physical Science, TE p. 80*

**3g.** Where appropriate, materials across and throughout grades 6-8 include science and engineering practices that are integrated with other content area practices.

- *Earth and Space Science, TE p. 714*
- *Earth and Space Science, TE p. 705*
- *Life Science, TE p. 3 (STEM Project is online)*
- *Physical Science, TE p. 742*
- *Physical Science, TE p. 196 (PBL Cookin’ with the Sun is online)*

**10a.** Materials provide relevant grade-appropriate connection(s) to the Common Core State Standards (CCSS) in Mathematics.

*Correlations have been completed to the CCSS Standards in Mathematics*

**10b.** Materials provide relevant grade-appropriate connection(s) to the Common Core State Standards (CCSS) in English Language Arts & Literacy.

*Correlations have been completed to the CCSS Standards in English Language Arts and Literacy*

**10c.** Materials provide relevant grade-appropriate connection(s) to the Oregon English Language Proficiency Standards.

*Correlations are being completed to the Oregon English Language Proficiency Standards*

**iScience** makes connections in many ways. Units begin with a Graphic Novel activity. These take advantage of a very popular and current literature genre. At the end of the activity, students have a STEM activity that incorporates technology, engineering and mathematics. Guided and leveled questions ensure teachers maximize student participation and understanding.

Supplementary chapter resources consistently provide support for math and language arts connections. Other supplemental assessment opportunities include, but are not limited to: Content Vocabulary Practice, Levelled Content Practice, Language Arts Support, Math Skill Support, School to Home, Levelled Concept Builders, Enrichment Activities, Challenge Activities, Launch labs, Mini Labs, Skill Labs, Levelled Chapter labs, Levelled Quizzes, Levelled Chapter tests.

The curriculum provides opportunities for students to work together to investigate real-world scientific and technological problems, allowing them to use their creativity and to collaborate, think critically, communicate, and think globally to solve problems that require the use of engineering design, mathematics, science, and technology. Also, at the end of each lab, students are asked to communicate their results to the class.

McGraw-Hill Education is committed to publishing pedagogically sound, high-quality, educational material that is fair, unbiased, and that recognizes the unique contributions of people of all races, cultures, and faiths. To ensure that our textbooks meet these high standards, all textbooks are authored by scholars and educators who are recognized experts in
their areas of specialty. McGraw-Hill School Education also submits manuscripts to independent scholars and teachers for their review. To reach consensus on information with divergent interpretations, the recommendations of these educators and specialists are reviewed and discussed among the author and Academic Designers until final consensus is negotiated; changes are then incorporated into the manuscript to ensure that the materials are accurate and unbiased, present the materials in an age-appropriate and meaningful manner, and reflect the most current research in the subject area.
II. Instructional Supports
The instructional materials support instruction and learning for all students:

STUDENT ENGAGEMENT
11. Engages students in authentic and meaningful learning experiences that reflect real-world science and engineering practices in the NGSS performance expectations and are grounded in students’ experiences to provide a context for making sense of phenomena and/or designing solutions to problems.
   a. The context of learning experiences, including relevant phenomena, questions, or problems, engages students in three-dimensional learning.
      *Earth and Space Science, TE p. 47 (Career and Exploration)*
      *Earth and Space Science, TE p. 45 (Math Skills with online practice)*
      *Life Science, TE p. 12 (Mini-Lab)*
      *Physical Science, TE p. 42 (Inquiry Questions)*
      *Physical Science, TE p. 45 (Launch Lab)*

   b. Provides relevant firsthand experiences or models that allow students to make sense of the physical and natural world.
      *Earth and Space Science, TE p. 47 (Career and Exploration)*
      *Earth and Space Science, TE p. 45 (Math Skills with online practice)*
      *Life Science, TE p. 12 (Mini-Lab)*
      *Physical Science, TE p. 42 (Inquiry Questions)*
      *Physical Science, TE p. 45 (Launch Lab)*

   c. Engages students in multiple practices that are integrated into relevant disciplinary core ideas and crosscutting concepts to support making sense of phenomena and/or designing solutions to problems through inquiry and engineering design experiences.
      *Life Science, TE p. 369 (STEM project is online)*
      *Life Science, TE p. 371 (Mini-lab)*
      *Life Science, TE p. 375 (Launch Lab)*
      *Life Science, TE p. 390 (Virtual Lab is online)*
      *Life Science, TE p. 391 (Skill Lab)*

   d. Provides opportunities for students to connect their explanation of a phenomenon and/or their design solution to a problem to their own experience.
      *Earth and Space Science, TE p. 49 (Launch Lab)*
      *Earth and Space Science, TE p. 51 (Visual Literacy and Teach Toolbox demo)*
      *Earth and Space Science, TE p. 53 (Teach Toolbox Demo)*
      *Earth and Space Science, TE p. 65 (Virtual Lab is online)*
      *Earth and Space Science, TE p.40 (PBL Gravity Glue is online)*

   e. Provides relevant applications for students to relate science to life, home, school, and various careers, and to apply their knowledge and skills as scientifically literate citizens.
      *Earth and Space Science, TE p.509*
      *Earth and Space Science, TE p. 385*
      *Life Science, TE p. 821*
      *Physical Science, TE p. 442*
      *Physical Science, TE p. 537*

Students are presented with multiple opportunities to explore and analyze real-world problems. The content of the program is written in the terms of understanding the world around us and the science behind it. With this in mind, students are presented with multiple opportunities to explore and analyze real-world problems and to look at science in authentic scenarios.

A case study is presented at the end of the Nature of Science chapter at the beginning of the book. Students are then challenged to apply science and engineering practices in a meaningful and consistent way. As they begin a unit of study there is a review of one of the science and engineering practices or cross-cutting concepts. The teacher then can assign a hands-on activity that involves that practice or concept and the unit has an overarching STEM Project that involves many of the practices and concepts around the DCIs in the unit and engages the student in authentic scenarios and requires them to create explanations.
Each chapter begins with an essential question that addresses a phenomenon and a visual representation tied to that phenomenon in the world around them and thoughtful inquiry questions are raised to engage the student in consideration of the phenomenon. When progressing forward multiple types of activities are integrated to provide context to explore ideas, allow students to engage in both consideration and application of the practices both in theoretical and authentic and meaningful applications. Teacher and student can choose from a variety of activities including:

- **Launch Labs** – Quick thought provoking investigations centered on exploring phenomena.
- **Mini-Labs and full chapter labs** that apply
- **Skill labs** that focus on a specific practice or concept within the context of a DCI.
- **WebQuests** – Authentic and meaningful case studies where students create explanations.
- **Real world features** that explore scientific phenomenon, the current work of scientists, and historical discoveries. These features have an extend feature to allow students to explore the content further.
- **Project-based learning activities** that engage students in the crux of NGSS and the intent of meaningful scenarios.

All of these labs and activities prepare students to address the assessment anchors. The combination of problem-based learning activities, STEM projects, WebQuests, and inquiry activities provide students with multiple opportunities to experience relevant phenomena in both representation format and in firsthand experience. The problems are connected to their world. They have to make choices, analyze data, and draw conclusions as they move toward a solution and construct an explanation or argument using evidence.

Lessons approach learning through Engage, Explore, Explain, Evaluate, and Extend. Engage sections stimulate student interest. Explore provides opportunities for inquiry and delivers hands-on experience when exploring each concept based on real-world problems. Explain builds opportunities to learn new vocabulary, hold collaborative conversations, and build arguments. Evaluate assesses student understanding with remediation options. Extend links big ideas to cross-curricular topics, other real-world examples, and STEM careers. Visuals are used to help students dissect the text and build literacy skills in informational text.

Real-world connections are made throughout the problem-solving inquiry activities that also draw on cross-curricular opportunities made through career connections and the application of engineering and design skills. There are a number of the hands-on investigations that are “Design Your Own” and require students to develop testable questions and to design experiments using scientific inquiry. The program also has Stem Online Activities and project-based learning activities that require the student to do the same.

Digital middle school science solutions, solving real problems for the real world:

- **Project-based learning activities**
- **Science and Engineering Practices Handbook**
- **Applying Practices Worksheets**

New Applying Practices activities and project-based learning activities, each written to a specific NGSS performance expectation, appear at point of use. These editable worksheets can be filled in online or downloaded. Your students will be engaged and successful, integrating the three dimensions—disciplinary core ideas, science and engineering practices, and cross-cutting concepts!
The instructional materials support instruction and learning for all students:

STUDENT ENGAGEMENT

12. Facilitates deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts by building upon prior knowledge and identifying and correcting misconceptions.

Earth and Space Science, TE p. 108G
Earth and Space Science, TE p. 108H (Page Keeley Probe is online)
Life Science, TE p. 82 G&H
Physical Science, TE p. 158G
Physical Science, TE p. 158H (Page Keeley Probe is online)

Each chapter and lesson begins with Essential Questions that focus student learning and inquiry questions that involve critical thinking for students. Each lesson includes a Launch Lab for student discovery. In addition, Project-Based Learning Activities and the Science and Engineering Practices Handbook provide student engagement in the three dimensions of disciplinary core ideas, science and engineering practices, and cross-cutting concepts. The inquiry activities and labs are focused on phenomenon questions. The inclusion of real world relevance motivates students to explore the impact of earth science on the world.

Integrated iScience was designed to create a highly interactive environment for learning middle school science. Students will be highly engaged and excited to learn more about science.

- Every chapter has multiple lab activities that require hands-on participation by students.
- The Science Notebook encourages students to interact with the content by putting concepts into their own words. Through comparing and contrasting ideas, summarizing concepts and translating what they’ve read into graphic organizers, students interact in a truly meaningful way.
- There are also Virtual Labs that provide opportunities for interaction without concern for safety, time, or expensive lab materials.
- The Teacher Edition 2.0 Professional includes even more strategies and activities that make learning interactive. Teachers will have access to an Engagement Toolbox, Guiding Questions, Visual Literacy Strategies, Differentiated Instruction Strategies and more for every lesson.

As students begin a unit of study there is a review of one of the science and engineering practices or cross cutting concepts. The teacher then can assign a hands-on activity that involves that practice or concept and the unit has an overarching STEM Project that involves many of the practices and concepts around the DCIs in the unit and engages the student in authentic scenarios and requires them to create explanations.

Each chapter begins with an essential question that addresses a phenomenon and a visual representation of tied to that phenomenon in the world around them and thoughtful inquiry questions are raised to engage the student in consideration of the phenomenon. Each chapter also has a Page Keeley Science Probe that engages students in critical thinking. The probe allows the teacher to determine that background knowledge of the students and preconceptions and misconceptions they may be entertaining. The TE also addresses some of the common misconceptions and includes questioning strategies to engage the students and an optional activity to investigate the misconception.

Throughout many activities, students are employing the steps of the scientific method either through a guided investigation or one that is more open ended. Students begin by asking questions then proposing a hypothesis or making a prediction. During the investigation they collect data as they manipulate a variable. After completing the investigation, they draw conclusion and are asked to present their findings to the class. These steps are clearly indicated throughout the students’ investigations.

There are a number of the hands on investigations that are “Design Your Own” and require students to develop testable questions and to design experiments using scientific inquiry. The program also has STEM activities and project-based learning exercises that require the student to do the same.

Lessons approach learning through Engage, Explore, Explain, Evaluate, and Extend. Engage sections stimulate student interest. Explore provides opportunities for inquiry and delivers hands-on experience when exploring each concept based on real-world problems. Explain builds opportunities to learn new vocabulary, hold collaborative conversations, and build arguments. Evaluate assesses student understanding with remediation options. Extend links big ideas to cross-curricular topics, other real-world examples, and STEM careers. Visuals are used to help students dissect the text and build literacy skills in informational text.
Real-world connections are made throughout the problem-solving inquiry activities that also draw on cross-curricular opportunities made through career connections and the application of engineering and design skills.

McGraw Hill iScience has a variety of materials for universal instruction including leveled materials, a lower level reader of the text, and a reading coach. The optional adaptive program LearnSmart targets each student and supports their reading and the understanding of the program. The Teacher’s Edition has pedagogical practices and suggestions for struggling students, on level students, beyond level students, and English Language Learners. The chapter resources contain a variety of support materials for all levels.
The instructional materials support instruction and learning for all students:

**STUDENT ENGAGEMENT**

13. Through scientific discourse in oral, visual, and/or written form, materials provide frequent opportunities for students to express, clarify, justify, interpret and represent their ideas, and respond to peer and teacher feedback.

*Earth and Space Science, TE p. 61 (Foldable)*  
*Earth and Space Science, TE p. 75 (Communicate your findings)*  
*Life Science, TE p. 50 (PBL Engineering a Cell is online)*  
*Physical Science, TE p. 334*  
*Physical Science, TE p. 84H (Page Keeley Probe is online)*

Completion of laboratory or field work greatly enhances the student’s understanding and experience while using the *iScience* program. Therefore, multiple and varied laboratory activities are integrated within each chapter of the program and relate directly to the content being studied. This, in addition to the other integrated activities (both physical and virtual), give students the opportunities to explore ideas with fellow students and teachers in a meaningful context.

There are a number of the hands on investigations that are “Design Your Own” and require students to develop testable questions and to design experiments using scientific inquiry. These activities, along with the Stem Activities and Project-Based Learning activities, give students ample opportunity to express themselves, consider other ideas, revise their thinking and represent their thinking verbally and in writing. There is a strong emphasis on 21st century skills throughout and in the option to involve technology. Students present their findings and explanations in a variety of media and scenarios that emulate what a scientist or engineer would be required to do.

When students are able to express their ideas and the listen or read the ideas of others it helps them evaluate the merit of their arguments and rationale. This expression in oral, written and visual format is a part of every activity that students participate in to encourage reflection, critical analysis, and collaborative conversation and work allows students to move to a deeper level of appreciation and understanding of the phenomenon, the 3 dimensions.

McGraw Hill Middle School *iScience* has the broad range of assessment opportunities that give both the student and the teacher a variety difference way to demonstrate their understanding of DCI’s, Practices and Crosscutting Concepts. Teachers have the options of: eAssessment with a variety of questions types of questions, as well as, multiple inquiry activities that can be used as performance tasks, Applying Practices Activities, LearnSmart Adaptive Learning System, Self-Check Quizzes, WebQuests, and others.
The instructional materials support instruction and learning for all students:

**DIFFERENTIATED INSTRUCTION**

14. Provides guidance for teachers to support differentiated and culturally responsive (i.e., purposefully represents diverse cultures, linguistic backgrounds, learning styles, and interests) instruction in the classroom so that every student’s needs are addressed by including:

a. Suggestions for how to promote equitable instruction by making connections to culture, home, neighborhood, and community, as appropriate.

*Life Science, TE p. 60 (Vocabulary – Build Class Definitions)*
*Life Science, TE p. 71 (Differentiated Instruction)*
*Life Science, TE p. 93 (Teacher Toolbox and Differentiated Instruction AL)*
*Physical Science, TE p. 89 (Differentiated Instruction AL)*
*Physical Science, TE p. 91 (Science Usage vs Common Usage)*

b. Appropriate scaffolding, interventions, and supports, including integrated and appropriate reading, writing, listening, and speaking alternatives (e.g., translations, picture support, graphic organizers) that neither sacrifice science content nor avoid language development for English language learners, special needs, or below grade level readers.

*Earth and Space Science, TE p. 179 (Differentiated Instruction ELL)*
*Life Science, TE p. 85 (Teacher Toolbox – Demo)*
*Life Science, TE p. 86 (Foldable)*
*Physical Science, TE p. 170 Visual Literacy*
*Physical Science, TE p. 163 (Differentiated Instruction ELL)*

c. Digital and print resources that provide various levels of readability (e.g., based on the CCSS three part model for measuring text complexity).
   The Reading Essential provides both Digital and Print access with 2 to 3 grade levels below the regular text.

d. Modifications and extensions for all students, including those performing above their grade level, to develop deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts.

*Earth and Space Science, TE p. 179 (Differentiated Instruction)*
*Earth and Space Science, TE p. 181 (Differentiated Instruction)*
*Life Science, TE p. 87 (Differentiated Instruction)*
*Physical Science, TE p. 171 (Differentiated Instruction)*
*Physical Science, TE p. 173 (Differentiated Instruction)*

e. Technology and digital media to support, extend, and enhance learning experiences.
   The online Portal (ConnecEd) and Online eBook have multiple types of resources including LearnSmart, CyberScience and PBLs to support, extend, and enhance learning experiences.

f. Materials in multiple language formats.
   The text and major support pieces come in English and Spanish and there is a multi-lingual glossary in 13 languages with Key vocabulary.

The teacher edition provides additional opportunities for students to practice their communication skills. Examples include differentiated instruction activities, identifying misconceptions, Page Keeley Science Probes, guiding questions, and Real-World Science activities. Differentiated instruction activities for approaching level, on level, beyond level and ELL students provide additional open-ended practice for students. There are also additional activity ideas provided in the Teacher’s Edition that teachers can choose to assign or modify for additional inquiry practice. The Fast File Unit Resources contain a variety of resources that are useful for differentiation such as leveled labs and assessments, as well as, activities that range from remediation for struggling students to challenges for advanced learners.

McGraw Hill *iScience* has a variety of materials for universal instruction including leveled materials, a lower level reader of the text and a reading coach. The optional adaptive program LearnSmart that targets each student and support theirs reading and the understanding of the program. The teacher’s edition has pedagogical practices and suggestions for struggling students, on level students, beyond level students and English Language Learners. The chapter resources contain a variety of support materials for all levels. Guiding questions on each page are labeled with Approaching Level, On Level,
Below level, and English Language Learner icons to help teachers scaffold their instruction. In addition, each page contains a differentiated instruction guide that provides additional strategies for all levels of learners.

McGraw Hill *iScience* meets the needs of all learners. Some, but not all, of the ways we accomplish this is through:

- Word for word read of the narrative in English
- Spanish summaries
- Academic vocabulary support
- Language arts support
- Concepts in Motion tutorials
- Personal tutors
- LearnSmart: Exclusive adaptive and prescriptive study tool.
- Spanish worksheets. In the eBook a student can click on the bolded vocabulary words and the definition is available in English and Spanish.

Explore Activities, MiniLabs, Skill Practice Labs, and Inquiry Labs are an integral part of the *iScience* program that are used to facilitate learning through hands-on activities and laboratory lessons which require student understanding and use of correct and safe procedures and skills to further their knowledge of concepts. Throughout the lessons are interactive questions and graphic organizers that require student interaction with the text to extend direct concept lessons. Conceptual understanding is further enhanced with graphic organizers, lab activities, inquiry and STEM activities, and rigorous assessments. Standards are interwoven throughout the lessons and are prominent.

A range of laboratory activities for each chapter provides hands-on experience. Graphic organizers and foldables enable students to organize information. And interactive prompts such as Connect, Explain, Summarize, and Analyze require students to communicate their data.

*iScience* has a complete Spanish text, Spanish Resources, Spanish online materials, and a multi-lingual glossary in 13 different languages.

McGraw Hill *iScience* has a variety of materials for universal instruction including leveled materials, a lower level reader of the text and a reading coach. The optional adaptive program LearnSmart that targets each student and support theirs reading and the understanding of the program. The teacher’s edition has pedagogical practices and suggestions for struggling students, on level students, beyond level students and English Language Learners. The chapter resources contain a variety of support materials for all levels.

Teacher guidance for providing instructional materials in *iScience* is provided on each page of the Teacher Edition, both print and on-line. Guiding questions on each page are labeled with Approaching Level, On Level, Below level, and English Language Learner icons to help teachers scaffold their instruction. In addition, each page contains a differentiated instruction guide that provides additional strategies for all levels of learners. State standards are also provided at point-of-use to enable teachers to provide additional support. Student materials include a variety of labs, worksheets, and reading supplements that may be leveled appropriately.

Within the lesson, *iScience* uses the 5E instructional model. The 5E Lesson model in *iScience* provides not only specific suggestions for each step, but also specific resource suggestions. These resource suggestions can then be utilized within the classroom, or easily delivered to students through our ConnectED platform.
The instructional materials support instruction and learning for all students:

DIFFERENTIATED INSTRUCTION

15. Includes grade-level appropriate academic and content-specific vocabulary in the context of the learning experience that is accessible, introduced, reinforced, reviewed and augmented with visual representations when appropriate.

*Earth and Space Science, TE p. 186 (Reading Guide)*
*Earth and Space Science, TE p. 186 (Acting Out Meaning)*
*Earth and Space Science, TE p. 188&189 (Vocabulary in Context)*
*Earth and Space Science, TE p. 192 (Word Origins)*
*Earth and Space Science, TE p. 193 (Visual Summary & Use Vocabulary)*

McGraw Hill *iScience* is built with the premise of helping teachers and students develop a deep understanding and appreciation for the conceptual understanding of science in the context of the world around them. A significant part of understanding is a working knowledge of both the academic and content specific vocabulary. The vocabulary is introduced in the reading guide for each lesson but is defined in context as students study. The reading guide includes review vocabulary from previous lessons to reinforce these concepts. The acquisition of the vocabulary is supported by frequent use, providing context, calling out work origins, using visual vocabulary and supporting teachers in using Visual Literacy to support vocabulary acquisition.

There are a variety of online resources that also support the introduction of vocabulary including vocabulary games and definition at point of use within the text. Students have the opportunity to apply their newly acquired vocabulary for reinforcement.

E-Assessment provides teachers with a range of assessment options to assess student proficiency. These methods range from true false questions to open ended response and essay. Diversity of question type is a strength, providing instructors with the ability to assign questions that test knowledge of a sequence of events (Example: Mitosis) where students are being assessed on an order of events. Multiple response questions (Example: “check all that apply” or “choose all answers that don’t belong”) are also available. Additionally, Technology enhanced questions are available in the McGraw Hill’s E-Assessment program. Technology enhanced questions give students the opportunity to manipulate items on the screen (Example1: Labelling the parts of an animal cell by dragging the term to the appropriate location) (Example2: Manipulating a graph in order to make it accurately represent the data in a chart). Many of the questions allow students to demonstrate their usage of their newly acquired vocabulary.

McGraw-Hill’s ConnectEd site provides access to eBooks, audio, personal tutors, animations, self-check quizzes, and more. Various tools allow the teacher to create and customize lesson plans, edit worksheets, and use preloaded presentations, or create their own, to enrich student understanding. Programs are interactive and student-centered curricula.

Reading skills and comprehension are reinforced through guiding question strategies, use of multiple vocabulary styles (word origins, academic vocabulary, science use vs. common use, and review vocabulary), and a Get Ready to Read student anticipation guide.
The instructional materials support instruction and learning for all students:

**DIFFERENTIATED INSTRUCTION**

16. Provides guidance for teachers throughout the unit for how learning experiences build on each other to support students in developing deeper understanding of the practices, disciplinary core ideas, and crosscutting concepts.

*Earth and Space Science, TE p. 195-197 (Guiding Questions)*

*Earth and Space Science, TE p. 197 (Differentiation)*

*Life Science, TE p. 86 (Visual Literacy)*

*Physical Science, TE p. 199 (Differentiated Instruction)*

*Physical Science, TE p. 194 C (Differentiated Resources)*

Conceptual understanding in *iScience* is developed through a scaffolded approach starting with the Big Idea for each chapter. Each lesson begins with Essential Questions, and each learning object is then built on this framework. Conceptual understanding is further enhanced with graphic organizers, lab activities, inquiry and STEM activities, and rigorous assessments. Standards are interwoven throughout the lessons and are prominent. Vocabulary is developed with lesson lists, comprehensive definitions, and highlighting. Vocabulary development is also enhanced with review vocabulary, word origins, word pronunciations, science usage versus common usage, and academic vocabulary. In addition, an on-line multilingual glossary is available in 13 languages.

Teacher guidance for providing instructional materials in *iScience* is provided on each page of the Teacher Edition, both print and on-line. Guiding questions on each page are labeled with Approaching Level, On Level, Below level, and English Language Learner icons to help teachers scaffold their instruction. In addition, each page contains a differentiated instruction guide that provides additional strategies for all levels of learners. State standards are also provided at point-of-use to enable teachers to provide additional support. Student materials include a variety of labs, worksheets, and reading supplements that may be leveled appropriately. The support material in the teacher’s edition goes into detail in guiding the teacher to help all students and much of this support is at point of use.

The professional development for teachers guides them into the proper use of scaffolded and differentiated instruction. The quick start and implementation courses are embedded into the online platform and are available 24/7 for teachers to access the training. There is also the Blue Print for Success, a teacher reference guide that is available in print and digitally and has a wealth of strategies for differentiation support to guide teachers on how to support 3 dimensional learning for the students. A variety of professional development videos are also available that support both differentiated instruction and includes the use of foldables as a learning tool. The foldable videos were created by McGraw Hill Education and Dinah Zike.
The instructional materials support instruction and learning for all students:

**DIFFERENTIATED INSTRUCTION**

17. Provides scaffolded support for teachers to facilitate learning of the practices so that students are increasingly responsible for making sense of phenomena and/or designing solutions to problems.

*Earth and Space Science, TE p. 214C*


*Life Science, TE p.86&87 (Scaffolded Support is in Guided Questions and Differentiated Instruction)*

*Physical Science, TE p. 3 (STEM Project is online and scaffolded support is in teacher instructions)*

*Physical Science, TE p. 194C*

All of the activities, Applying Practices, WebQuests, STEM quests and inquiry activities, contain detailed teacher plans giving the teachers the freedom to give a high level of support or a minimal level of support. The teacher then controls the amount of support and can help students become more independent and can then draw their own conclusions and learn to cite evidence and make strong arguments to support the solutions to their problems.

Conceptual understanding in *iScience* is developed through a scaffolded approach starting with the Big Idea for each chapter. Each lesson begins with Essential Questions, and each learning object is then built on this framework. Conceptual understanding is further enhanced with graphic organizers, lab activities, inquiry and STEM activities, and rigorous assessments. Standards are interwoven throughout the lessons and are prominent. Vocabulary is developed with lesson lists, comprehensive definitions, and highlighting. Vocabulary development is also enhanced with review vocabulary, word origins, word pronunciations, science usage versus common usage, and academic vocabulary. In addition, an on-line multilingual glossary is available in 13 languages.

Text features such as Connect It, Apply It, and Summarize It help students make connections between the content presented and their understanding of it by responding to targeted prompts. These features also provide a format for summing up learning prior to the lesson review. In addition, lesson assessments check understanding at the close of each lesson. On-line assessments provide further support in the form of lesson quizzes.

Teacher guidance for providing instructional materials in *iScience* is provided on each page of the Teacher Edition, both print and on-line. Guiding questions on each page are labeled with Approaching Level, On Level, Below level, and English Language Learner icons to help teachers scaffold their instruction. In addition, each page contains a differentiated instruction guide that provides additional strategies for all levels of learners. State standards are also provided at point-of-use to enable teachers to provide additional support. Student materials include a variety of labs, worksheets, and reading supplements that may be leveled appropriately.
The instructional materials support instruction and learning for all students:

**INSTRUCTIONAL MATERIALS**

18. Digital and print materials are consistently formatted, visually focused, and uncluttered for efficient use.

*Earth and Space Science, TE p. 214-215*
*Earth and Space Science, TE p. 216-217*
*Life Science, TE p. 83-84*
*Physical Science, TE p. 84-85*
*Physical Science, TE p. 86-87*

*iScience* incorporates a user friendly table of contents, glossary, and index, as well as text features such as Connect It, Apply It, and Summarize It to help students make connections between the content presented and their understanding of it by responding to targeted prompts. These features also provide a format for summing up learning prior to the lesson review. In addition, lesson assessments check understanding at the close of each lesson. On-line assessments provide further support in the form of lesson quizzes. The Problem Based Learning exercises and WebQuests require students to apply information and concepts in new settings.

Scope and sequence is clearly outlined and learning progressions are identified in teacher support. Standards coverage and lesson objectives are clearly indicated at the lesson level. Vocabulary is clearly identified in teacher support and student materials. Within the student materials, the vocabulary is highlighted.

The size and format of print is appropriate and engaging to students. *iScience* is visually appealing and interesting to students. Visuals are used to help students dissect the text and build literacy skills in both informational text and fiction.

Visuals are used to help students dissect the text and build literacy in *iScience*. Students understand the purpose of visuals that are present in the lessons. For example, at the end of every 2-page lab, students are asked to communicate their results to the class. The form of communication varies from a class presentation to visual aids such as brochures and posters. There also are multiple opportunities for students to communicate with their classmates outside the laboratory. “It’s Your Turn” and “Writing in Science” activities often involve a form of class presentation using visuals as part of the activity.
The instructional materials support instruction and learning for all students:

INSTRUCTIONAL MATERIALS

19. Provide virtual labs, simulations, and video-based learning experiences.

*Earth and Space Science, TE p. 241 (Virtual Lab is online)*

*Earth and Space Science, TE p. 226 (Video is online)*

*Life Science, TE p. 137 (Virtual Lab is online)*

*Physical Science, TE p. 111 (Virtual Lab is online)*

*Physical Science, TE p. 108 (Video is online)*

*iScience* was designed to create a highly interactive environment for learning middle school science to help motivate and engage students in three-dimensional learning. Designed for today’s tech savvy middle school students, *iScience* offers a balance of hands-on investigations, rigorous science content and engaging, real-world applications making *iScience* fun, exciting, and stimulating. *iScience* was created as a hybrid program where all materials are available online including the interactive eBook. The eBook gives students access to all of the resources at point of use. As teachers explore a unit, chapter, or lesson the eBook contains a dock at the bottom of the page that is a link to all of the digital resources created to support, enhance, or investigate the 3 dimensions.

As students progress in their learning they can participate in the virtual labs that are included in every chapter. The virtual labs incorporate the science and especially the engineering practices as the simulations involve them in design, interpretation of data, in obtaining and communicating information. They also involve the Cross-Cutting Concepts in Systems, Patterns, and Models along with a variety of other resources. These range from determining the effectiveness of insulators, predicting buoyancy, or looking at how solutions impact osmosis to a variety of other experiences.

Videos are also included at point of use to support inquiry and learning. BrainPop videos in each chapter engage students with introducing concepts in a unique way. What’s Science Got to Do with It relates the concepts to real world application and careers that involve specific concepts in science. They also demonstrate the use of science and engineer practices in at DCI oriented context. The instruction videos often model concepts that are difficult for students to visualize. This visualization is important for students to proceed to a greater depth of understanding and often for students to move forward in meeting the Performance Expectations.

Teachers are given instructional support in the use of these resources to effective move learning forward with the use of technology.
The instructional materials support instruction and learning for all students:

INSTRUCTIONAL MATERIALS

20. Allow teachers to access, revise, and print from digital sources (e.g., readings, labs, assessments, rubrics).

All chapter resource files are word documents and can be obtained and edited digitally.

iScience includes a variety of assessment materials ranging from Page Keeley Science Probes for formative assessment, Self-Check Quizzes for student self-assessment in every lesson, prepare quizzes for each lesson, leveled chapter assessment, performance tasks, and McGraw Hill eAssessment which is an online assessment generator the has question on all levels of DOK and Blooms along with Tech Enhanced Questions. The program also has the option of LearnSmart which is an adaptive review and learning program.

In iScience, noted assessment expert and author Paige Keeley has written our pre-chapter formative assessment questions – also known as ‘probes’. These probes are designed to check students’ preconceptions prior to the chapter launch. Ongoing formative assessments are built within each lesson as well as through the ‘interactives’ or response prompts in the student text. These prompts provide specific opportunities for students to respond to the text and include such activities as recall, describe, determine, calculate, and observe. Students think about and reflect on their learning as they move through the lesson. The different types of lesson graphic organizers add even another dimension of assessment – providing teachers with insight into student thinking as they work to complete these visual ‘recollection’ pages.

Further formative assessment guidance is provided in the Teacher Edition with the scaffolded guided questions giving teachers a window into student understanding as the lesson progresses.

The eAssessment tool may be used as well to create any type of assessment. Teachers can create their own tests for formative, continuing, and summative assessments with this tool.

Teacher guidance for providing instructional materials in iScience is provided on each page of the Teacher Edition, both print and on-line. Guiding questions on each page are labeled with Approaching Level, On Level, Below level, and English Language Learner icons to help teachers scaffold their instruction. In addition, each page contains a differentiated instruction guide that provides additional strategies for all levels of learners. State standards are also provided at point-of-use to enable teachers to provide additional support. Student materials include a variety of labs, worksheets, and reading supplements that may be leveled appropriately.

All of the chapter resources are available digitally and are downloadable and printable. This gives the teacher flexibility on how the materials are used in his or her classroom and can meet the needs of a low tech or high tech classroom. All of the support materials found in the Fast Files that includes study guides, vocabulary support, key concepts guides, labs sheets, enrichment and reinforcement materials, prepared assessments, and Spanish support materials come in Word doc format with allows the teacher to edit all of these materials.
The instructional materials support instruction and learning for all students:

**INSTRUCTIONAL MATERIALS**

21. Supplies and equipment, when provided, are high quality (e.g., durable, dependable) and organized for efficient use.

Supplies and equipment, when provided, are high quality (e.g., durable, dependable).

**McGraw-Hill Education**, PreK-12 educational publishers, are committed to the creation of the highest quality textbooks, support materials, and technology products. We utilize the strictest standards for gathering input into our all our programs: market research representative of a wide variety of teachers/students from across the country, academic research from school districts of varying populations, diverse authorship teams, and carefully selected and balanced teacher advisory boards. Using input from this wide spectrum at the onset of program development allows us the opportunity to carefully construct content and instruction fairly representing and addressing the interests/needs of a truly diverse population. Throughout development content and instructional practices are monitored by our authorship teams and tested by educators to insure the careful balance is implemented so that the programs we send into the marketplace will meet the intellectual, cultural, and experiential needs of students across the country helping all students move successfully into our richly diverse society.
The instructional materials support instruction and learning for all students:

**INSTRUCTIONAL MATERIALS**

22. Provide thorough lists that identify by learning experience all consumable and non-consumable materials aligned for both instruction and assessment.

*There is a complete list of consumable and non-consumables for all investigations and demonstrations.*

**Components List:**

**Labs** *(found in Student Edition)*

*iScience* provides you with a wide range of inquiry options that will accommodate a variety of lab situations. Whatever labs you choose, you can be assured that each one directly addresses an Essential Question or Big Idea. Never again will you have to worry about whether your students understood the point of the lab! You’ll also be able to get more out of your lab budget because our teacher reviewers have helped us simplify the lab material requirements.

- **Launch Labs** - Each lesson begins with this quick, engaging hands-on experience that encourages students to ask questions.
- **MiniLabs** - These labs focus on specific Essential Questions and are generally 15-20 minutes in duration.
- **Skill Practice Labs** - Students have an opportunity to practice specific inquiry skills as they explore a particular Essential Question. Students will then apply this skill in the lab at the end of the chapter.
- **End of Chapter Lab** - This is a culminating lab in which students apply inquiry skills and science concepts in an in-depth investigation of the Big Idea.

All of the materials (consumable and non-consumable that are need for each lab or inquiry investigation are listed in the teachers edition both at point of use in the teacher’s edition and in a comprehensive list in the beginning of the TE. The TE also includes alternative options for the main chapter investigation.

**eStudent Edition**

More than just a digital version of a print book, the eStudent Edition includes resources and tools that provide students with an entirely different way to experience *iScience*. Students can explore concepts through Virtual Labs, animations, and videos. Our Personal Tutors provide students with another presentation of key concepts from a master teacher. Students can also practice concepts with access to all student resources, quizzes, and more.

**Reading Essentials**

Struggling readers finally get the support they need with the entire student edition written at a lower level. Active Reading strategies and comprehension questions help make the text more accessible.

**Science Notebook**

Interaction with a textbook can take many different forms, but none are as meaningful as when students use writing to put concepts into their own words. That’s exactly what happens through our Cornell-style Science Notebook. The varied strategies employ a range of critical-thinking skills and promote deeper understanding.

**Teacher Edition 2.0 Professional**

We recognize that the true key to student success is the teacher. That’s why we’ve created the next generation in teacher support, the Teacher Edition 2.0 Professional. Filled with strategies that model what works in science education, teachers will find the support they need: scaffolded guiding questions, differentiating instruction strategies, visual literacy strategies, unparalleled lab support, and more. Our innovative Strand Maps provide you with valuable information for instructional planning based on the work of Project 2061. The research-based strategies model effective science instruction, forming imbedded professional development that will make this a truly invaluable resource for new teachers. Even experienced teachers will save precious planning time using this tool.

**eTeacher Edition**

This is the first digital teacher edition that was designed by teachers to be intuitive and provide the digital support that you need. It takes advantage of online capabilities to tie all of your resources together and provide a platform for presenting concepts and encouraging class discussion. You can customize resource lists, edit worksheets, and even launch our vast array of animations, videos, Personal Tutors and more, all without leaving the book!

**Page Keeley Science Probes** *(found in eTeacher Edition)*

Page Keeley, a leading expert in formative assessment, has developed innovative and practical Science Probes for elucidating student preconceptions. Armed with this knowledge, teachers have the power to transform student understanding like never before!
Chapter Resources
These key instructional resources are arranged conveniently by chapter and provide content support for all of your students. Whether they are struggling and need remediation, or are working beyond level and need more of a challenge, we provide you with everything you need. There are leveled lab worksheets, leveled assessments, and resources for building vocabulary and content remediation.

The eAssessment tool may be used as well to create any type of assessment. Teachers can create their own tests for formative, continuing, and summative assessments with this tool.

Blueprints for Success: Science Classrooms that Work
This is a must-have desk reference for setting up and managing a successful science classroom. It includes key professional development topics such as:

- Differentiating Instruction
- ELL Support
- Lab Management and Safety
- Mathematics Support
- Language Arts and Literacy
- School-to-Home Connections
- Performance Assessment
The instructional materials support instruction and learning for all students:

INSTRUCTIONAL MATERIALS
23. Use scientifically accurate and grade-appropriate scientific information, vocabulary, phenomena, models, and representations to support students’ three-dimensional learning.

*Earth and Space Science, TE p. 250E&F*
*Earth and Space Science, TE p. 250G&H*
*Earth and Space Science, TE p. 252 (Reading Guide – Vocabulary)*
*Earth and Space Science, TE p. 253 Launch Lab (Phenomenon)*
*Earth and Space Science, TE p. 257 (Model)*

McGraw-Hill Education and McGraw-Hill School Education, LLC, are committed to publishing pedagogically sound, high-quality, educational material that is fair, unbiased, and that recognizes the unique contributions of people of all races, cultures, and faiths. To ensure that our textbooks meet these high standards, all textbooks are authored by scholars and educators who are recognized experts in their areas of specialty. McGraw-Hill School Education, LLC also submits manuscripts to independent scholars and teachers for their review. To reach consensus on information with divergent interpretations, the recommendations of these educators and specialists are reviewed and discussed among the author and Academic Designers until final consensus is negotiated; changes are then incorporated into the manuscript to ensure that the materials are accurate and unbiased, present the materials in an age-appropriate and meaningful manner, and reflect the most current research in the subject area.

*iScience* is written by a team that includes authors and consultants with over 100 years experience, collectively, teaching and consulting at the middle school level. As a result, *iScience* was created so that the sequence of concepts is ordered in a logical and pedagogically sound manner. The content is written by authors who are experts in scientific and educational fields. It is reviewed for accuracy and age-appropriateness by a teacher advisory board, multiple middle school teacher reviewers, and university-level content consultants.

Students build on previous knowledge and skills to gain understanding of more complex processes and concepts. Lessons built around Big Ideas and Essential Questions include real-world connections, and alternative teaching strategies are provided so that science is accessible to all students. In addition, the teaching strategies presented in the Teacher Edition support the overarching principles of science inquiry, scientific discussion and debate, formative and summative assessment of student understanding, and connection to other areas of learning.

*iScience* was built with a three-phased research approach:

**Developmental (Pre-Development)**
- National, state, and local standards evaluations
- Relevant data from recognized sources
- Qualitative market research
- Current academic content research

**Formative (Pre-Publication)**
- Pedagogical research base
- Classroom field tests
- Teacher advisory boards
- Academics, authors, consultants, and reviewers

**Summative (Pre-Publication)**
- Evidence of increased test scores
- Quasi-experimental program efficacy research
- Longitudinal studies
- Qualitative program evaluations
The instructional materials support instruction and learning for all students:

**INSTRUCTIONAL MATERIALS**

24. Adhere to safety laws, rules, and regulations and emphasize the importance of safety in science.

*Earth and Space Science, TE p. SR11*

*Earth and Space Science, TE p. 282*

Safety issues are clearly indicated in the student materials and provide simple and easy-to-understand practices/steps the students can follow to make sure no one is injured during activities and labs.

Explore Activities, MiniLabs, Skill Practice Labs, and Inquiry Labs are an integral part of the *iScience* program that are used to facilitate learning through hands-on activities and laboratory lessons which require student understanding and use of correct and safety procedures and skills to further their knowledge of concepts. Throughout the lessons are interactive questions and graphic organizers that require student interaction with the text to extend direct concept lessons. Conceptual understanding is further enhanced with graphic organizers, lab activities, inquiry and STEM activities, and rigorous assessments. Standards are interwoven throughout the lessons and are prominent.

A range of laboratory activities for each chapter provides hands-on experience. Graphic organizers and foldables enable students to organize information. And interactive prompts such as Connect, Explain, Summarize, and Analyze require students to communicate their data.
The instructional materials support instruction and learning for all students:

INSTRUCTIONAL MATERIALS

25. Make available ongoing and embedded professional development for implementation and continued use of the instructional materials.

*Life Science, TE p. 146D (Much of the ongoing PD is online under the PD Tab)*

*Life Science, TE p. 146E&F*

*Life Science, TE p. 146H*

*Life Science, TE p. 152&152 (Visual Literacy)*

*Life Science, TE p. 178A (Teacher Tips)*

Because the true key to student success is the teacher, we have a robust Professional Learning Environment that offers teachers relevant and practical information that is directly connected to the program in use. Our easy-to-use tools support professional learning with 24/7 access and meet district’s continuous improvement objectives.

McGraw-Hill School Education, LLC is committed to assisting teachers, administrators, and district leaders achieve your curriculum goals. Our comprehensive, complimentary Professional Development Program offers workshops and interactive training sessions that address research-based practices and strategies to meet the needs of supervisors and classroom teachers. Meetings, in-service, workshops, and online courses are examples of McGraw-Hill School Education’s commitment to professional development. They represent a broad range of offerings to help educators the district maintain high levels of success with the program, as well as to help foster ongoing professional growth and development of district teachers and administrators.

The professional development for teachers guides them into the proper use of instruction using pedagogical sound strategies. In addition to the above training mentioned, teachers can access a variety of professional development resources including, but not limited to:

- The quick start and implementation courses are embedded into the online platform and are available 24/7 for teachers to access the training.

- The Blue Print for Success is a teacher reference guide that is available in print and digitally and has a wealth of strategies for differentiation support to guide teachers on how to support 3 dimensional learning for the students.

- A variety of professional development videos are also available that support both differentiated instruction and includes the use of foldables as a learning tool. The foldable videos were created by McGraw Hill Education and Dinah Zyke.

- The teacher’s edition has a wealth of embedded professional development including: addressing misconceptions, using visual literacy, differentiation and scaffolding, inquiry for learning, guided questioning, and many more.
III. Monitoring Student Progress

The instructional materials support monitoring student progress:

26. Elicits direct, observable evidence of three-dimensional learning using practices with core ideas and crosscutting concepts to make sense of phenomena and/or to design solutions that have been covered adequately in the instructional materials.

*Physical Science, TE p. 194H (Page Keeley is online)*
*Physical Science, TE p. 195 (Options for Pre-Assessment)*
*Physical Science, TE p. 202*
*Physical Science, TE p. 196 (PBL Cookin’ with the Sun)*
*Physical Science, TE p. 228C*

*iScience* includes a variety of assessment materials ranging from Page Keeley Science Probes for formative assessment, Self-Check Quizzes for student self-assessment in every lesson, prepare quizzes for each lesson, leveled chapter assessment, performance tasks, and McGraw Hill eAssessment which is an online assessment generator that has questions on all levels of DOK and Blooms along with Tech Enhanced Questions. The program also has the option of LearnSmart which is an adaptive review and learning program.

In *iScience*, noted assessment expert and author Paige Keeley has written our pre-chapter formative assessment questions – also known as ‘probes’. These probes are designed to check students’ preconceptions prior to the chapter launch. Ongoing formative assessments are built within each lesson as well as through the ‘interactives’ or response prompts in the student text. These prompts provide specific opportunities for students to respond to the text and include such activities as recall, describe, determine, calculate, and observe. Students think about and reflect on their learning as they move through the lesson. The different types of lesson graphic organizers add even another dimension of assessment – providing teachers with insight into student thinking as they work to complete these visual ‘recollection’ pages.

Further formative assessment guidance is provided in the Teacher Edition with the scaffolded guided questions giving teachers a window into student understanding as the lesson progresses.

The eAssessment tool may be used as well to create any type of assessment. Teachers can create their own tests for formative, continuing, and summative assessments with this tool.
The instructional materials support monitoring student progress:
27. Includes editable and aligned rubrics, scoring guidelines, and exemplars that provide guidance for assessing student performance along all three NGSS dimensions to support teachers in (a) planning instruction and (b) providing ongoing feedback to students.
The program includes editable rubrics.

Rubrics are provided for WebQuests, project based learning exercises, performance tasks, essays, and thought based questions. These can be used to inform instruction as well as provide feedback to students.

For the Teacher
Teachers can build a wide variety of assignments in eAssessment. With a series of clicks, they can select questions by subject, standard, lesson, or a host of other factors. If they assigns the work to be completed online, the system will collect data for every student and the class. Reports on proficiency and accuracy can help them make data-driven instructional decisions.
The data from LearnSmart gives the teacher the knowledge to target instruction where students are struggling to provide a better conceptual framework to the creation of lessons and the distribution of class time.

For the Students
The online assignments are not limited to assessments. Teachers can allow students to practice by giving them multiple attempts at the assignment. They can also choose to allow students to see the right answer to each question or to receive feedback from each question. The system can also lock down the assignment with time restrictions.
The instructional materials support monitoring student progress:


*McGraw Hill iScience includes all of the above types of assessments in the online assessment.*

McGraw Hill Education has a variety of ways to measure and monitor student progress including the following.

- Project-Based Learning Activities (PBLs)
- Science and Engineering Practices Handbook
- Applying Practices Worksheets

New Applying Practices activities and PBL activities, each written to a specific NGSS performance expectation, appear at point of use. These editable worksheets can be filled in online or downloaded. Students will be engaged and successful, integrating the three dimensions—disciplinary core ideas, science and engineering practices, and cross-cutting concepts!

The LearnSmart Learning system allows students to do self-assessment in a strong learning environment that also uses the research and algorithmic basis to make it unique for each student.

Summative assessments provide real time data to help analyze student understanding and guide instructional decision making. *iScience* includes a variety of summative assessment options beginning with the lesson review. The lesson review requires students to apply their knowledge of the science content to the lesson’s Essential Question and includes rigorous higher order thinking questions. The end of chapter review includes specific test taking strategy practice by building student skills, while the assessment section includes questions that vary in their level of complexity – moving students to more rigorous, challenging thinking. Mastering the standards sample test-type problems and gives students practice prior to the state assessment thereby building student confidence.

All review questions are leveled, meaning these questions have indicators that describe the cognitive depth or complexity to the question. These levels allow teachers to build student comfort and experience around responding to more challenging and rigorous questions they will encounter on state assessments. The levels of complexity are identified as L1 thru L4i, moving students from lower cognitive levels involving science concepts identified as L1, to more challenging questions involving application (L2), to text-dependent questions (L3) to more rigorous science performance assessments at L4. The L4i indicators are dual coded, meaning they include both content and process standards.
The instructional materials support monitoring student progress:
29. Provides multiple opportunities for students to demonstrate and receive feedback on performance of practices connected with their understanding of disciplinary core ideas and crosscutting concepts.

*Physical Science, TE p. 194H (Page Keeley is online)*
*Physical Science, TE p. 195 (Options for Pre-Assessment)*
*Physical Science, TE p. 202*
*Physical Science, TE p. 196 (PBL Cookin’ with the Sun)*
*Physical Science, TE p. 228C*

McGraw Hill Middle School *iScience* has the broad range of assessment opportunities that give both the student and the teacher a variety difference way to demonstrate their understanding of DCI’s, practices and cross-cutting Concepts. Teachers have the options of:

- eAssessment with a variety of questions types
- Multiple Inquiry Activities that can be used a performance tasks
- Performance tasks
- Applying Practices Activities
- LearnSmart Adaptive Learning System
- Self-Check Quizzes
- WebQuests
- And others.
The instructional materials support monitoring student progress:

30. Assesses student proficiency using methods, vocabulary, representations, models, and examples that are accessible and unbiased for all students.

*McGraw Hill iScience includes all of the above types of assessments in the online assessment.*

e-Assessment provides teachers with a range of assessment options to assess student proficiency. These methods range from true false, open ended response, and essay. Diversity of question type is a strength, providing instructors with the ability to assign questions that test knowledge of a sequence of events (Example: Mitosis) where students are being assessed on an order of events. Multiple Response Questions (Example: “Check all that apply” or “Choose all answers that don’t belong”) are also available. Additionally, Technology Enhanced Questions are available in the McGraw Hill’s E-Assessment program. Technology Enhanced Questions give students the opportunity to manipulate items on the screen (Example1: Labelling the parts of an animal cell by dragging the term to the appropriate location) (Example2: Manipulating a graph in order to make it accurately represent the data in a chart).

Comprehensive assessment in *iScience* materials is a constant cycle of understanding student anticipation, using that information to inform instruction, and assessing for understanding.

Diagnostic assessments allow teachers to learn what students already know to establish a baseline from which to inform instruction. For example, each chapter opens with a Big Idea, which provides a framework for the chapter’s content. Each Key Concept and Essential Question relates the Big Idea. Teachers can then use the anticipation guide called “What do you think?” to learn what students already know about the content.

Formative assessments allow teachers to inform their teaching throughout the instruction cycle. Teachers may use Page Keeley Assessment Probes, as well as Key Concept Checks, Reading Checks, and Visual Checks to “check in” with students throughout the chapter.

Summative assessments then allow teachers to check understanding. Lesson and end-of-chapter tests, available in print and digital formats, let teachers know if students understand the Big Ideas and Key Concepts.
The instructional materials support monitoring student progress:
31. Digital assessments are easy to manipulate and customize, are linked to Common Core State Standards, and have large problem banks. **McGraw Hill iScience eAssessment is easy to use and customize, is correlated to the NGSS and has approximately 100 questions per chapter including tech enhanced assessment items.**

The eAssessment tool may be used to create any type of assessment. Teachers can create their own tests for formative, continuing, and summative assessments with this tool.

Integrated *iScience* addresses all of the Common Core Literacy Standards in Reading and Writing. These standards speak to the core science skills reinforced throughout the program. Students are continually encouraged to analyze, critique, and communicate. For example, our Science Notebook provides consistent opportunities to cite specific textual evidence to support analysis, determine central ideas, provide summaries, and analyze the relationships among concepts etc. The Launch Labs, MiniLabs and Labs throughout the program require students to follow multistep procedures, take measurements, and more. In numerous activities throughout the program, students translate information into a tables and graphs and also interpret graphs and tables.

Special features in each chapter of *iScience* provide opportunities for students to read about real-world science and align to the common core standards.

The eAssessment tool may be used as well to create any type of assessment. Teachers can create their own tests for formative, continuing, and summative assessments with this tool. Teachers can easily make tests from our vast test banks, and quickly customize them to suit your needs by adding or editing questions or tests. There are also additional activity ideas provided in the TE that teachers can choose to assign or modify for additional inquiry practice.

Blueprints for Success: Science Classrooms that Work
This is a must-have desk reference for setting up and managing a successful science classroom.

It includes key professional development topics such as:
1. Differentiating Instruction
2. ELL Support
3. Lab Management and Safety
4. Mathematics Support
5. Language Arts and Literacy
6. School-to-Home Connections
7. Performance Assessment
The instructional materials support monitoring student progress:

32. Digital assessment platform allows teachers to easily access student work and provide feedback. 
*With McGraw Hill Education’s eAssessment, assessments given online are automatically graded and provide instant feedback for both teachers and students.*

The formative science probes help the teacher understand what misconceptions are in the minds of students. eAssessment allows teachers to respond immediately to standards or objective targets. LearnSmart identifies exactly what concepts students struggle with. This data is easily available for the student and the teacher can access data on individual students and on the entire class to guide instruction.

Students are asked a series of questions to help them evaluate their results within lab activities. If results are not consistent with their hypothesis or other student’s results then they are asked to repeat the trial or explain why their results were different.

Summative assessments provide real time data to help analyze student understanding and guide instructional decision making. *iScience* includes a variety of summative assessment options beginning with the lesson review. The lesson review requires students to apply their knowledge of the science content to the lesson’s Essential Question and includes rigorous higher order thinking questions. The end of chapter review includes specific test taking strategy practice by building student skills, while the assessment section includes questions that vary in their level of complexity – moving students to more rigorous, challenging thinking. Mastering the standards sample test-type problems and gives students practice prior to the state assessment thereby building student confidence.
The instructional materials support monitoring student progress:

33. Provides teachers with a range of data to inform instruction that can interface with multiple electronic grade book platforms.

*McGraw Hill Education’s eAssessment provides access to 13 different reports to inform instruction and the data is easily exported into Excel or .csv files for import into grade book programs.*

The eAssessment tool may be used as well to create any type of assessment. Teachers can create their own tests for formative, continuing, and summative assessments with this tool. There are also additional activity ideas provided in the TE that teachers can choose to assign or modify for additional inquiry practice.
The instructional materials support monitoring student progress:

34. Provides print and digital assessments that are platform- and device-independent. *McGraw Hill eAssessment provides the ability to give assessments digitally on any device or browser including smartphones and will work on any browser.*

Integrated *iScience* was designed to create a highly interactive environment for learning middle school science. Students will be highly engaged and excited to learn more about science.

*iScience* includes a variety of assessment materials ranging from Page Keeley Science Probes for formative assessment, Self-Check Quizzes for student self-assessment in every lesson, prepare quizzes for each lesson, leveled chapter assessment, performance tasks, and McGraw Hill eAssessment which is an online assessment generator that has questions on all levels of DOK and Blooms along with Tech Enhanced Questions. The program also has the option of LearnSmart which is an adaptive review and learning program.

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Further formative assessment guidance is provided in the Teacher Edition with the scaffolded guided questions giving teachers a window into student understanding as the lesson progresses.

The eAssessment tool may be used as well to create any type of assessment. Teachers can create their own tests for formative, continuing, and summative assessments with this tool. These assessments can be accessed on any device including but not limited to Computers using any browser, tablets, and smartphones. This creates multiple opportunities to access quality feedback and the mobile access moves a step forward in providing equity.