Part 1: Oregon Science Baseline Criteria [K-HS]

Criterion	Metric	Examples in Text (MAXIMUM OF FIVE EXAMPLES PER METRIC; PROVIDED BY PUBLISHER)
Criterion 1.1: Alignment to Three-Dimensional (3D) Learning Alignment to Three-Dimensional (3D) Learning Materials reflect the 3D focus of the Oregon Science Standards to integrate the disciplinary core ideas (DCI), science and engineering practices (SEP), and crosscutting concepts (CCC) within and across grade levels and/or grade bands	**1.1.1: 3D INTEGRATION** Materials consistently and explicitly integrate all of the disciplinary core ideas, science and engineering practices, and crosscutting concepts that meet the full intent of grade-level and/or grade-band standards by the end of instruction.	As outlined in the submitted document titled "OR Sci. Adoption 2023 _Amplify Science 6-8 Correlation," Amplify Science meets 100% of the Oregon Science Standards for grades 6–8. Amplify Science's real-world problems provide relevant, 21st-century contexts through which students will investigate different scientific phenomena and develop a deeper understanding of Disciplinary Core Ideas (DCIs), acquire more experience with Science and Engineering Practices (SEPs), and observe the interconnectedness of various science disciplines through the Cross-Cutting Concepts (CCCs). The Amplify Science curriculum developers at UC Berkeley's Lawrence Hall of Science crafted each unit, chapter, and lesson with the following questions in mind: What do we want students to figure out (what DCI or part of a DCI)?; How do we want them to figure it out? (what scientific and engineering practice will they engage in to figure it out); and what crosscutting concept can scaffold students' understanding and connect it to other ideas about the natural world that they have learned? This resulted in a curriculum that incorporates a strategic, well balanced integration of the three dimensions. In order to help teachers recognize the three dimensional structure of every unit, chapter, and lesson, each unit contains a "3-D Statement" document that makes the integration clear. Each 3D Statement is a succinct description of the learning experiences in which students engage, color coded by dimension. This information is also made available to teachers at the individual lesson level, within the "Standards" section of the Lesson Brief. Unit-level examples: ● Grade 6, *Thermal Energy* unit, Unit Overview page, **3-D Statements** (under Teacher References) ● Grade 7, *Matter and Energy in Ecosystems* unit, Unit Overview page, **3-D Statements** (under Teacher References) ● Grade 8, *Earth, Moon, and Sun* unit, Unit Overview page, **3-D Statements** (under Teacher References) Lesson-level examples: ● Grade 6, *Weather Patterns* unit, Lesson 2.4, **Standards** ● Grade 8, *Force and Motion* unit, Lesson 3.2, **Standards**

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	1.1.2: NATURE of SCIENCE Materials explicitly align with the nature of science and the intersection of those understandings with science and engineering practices, disciplinary core ideas, and crosscutting concepts (NGSS: Appendix H).	Opportunities for students to develop understandings about the Nature of Science are embedded within all Amplify Science units. Students engage in oral and/or written reflections on their science learning, as well as on the nature and history of science, as they work to figure out the unit's focal phenomena. Examples: ● Grade 6, *Traits and Reproduction* unit, Lesson 4.1, **Activity 2** (including Teacher Support) ● Grade 7, *Phase Change* unit, Lesson 4.1, **Activity 2** (including Teacher Support) ● Grade 7, *Populations and Resources* unit, Lesson 1.4, **Activity 2** (including Teacher Support) ● Grade 8, *Force and Motion Engineering Internship* unit, Day 1, **Activity: Introducing Futura** (including Teacher Support) ● Grade 8, *Earth, Moon, and Sun* unit, Lesson 3.4, **Activity 3** (including Teacher Support)
	1.1.3: TRANSDISCIPLINARY CONNECTIONS Materials include meaningful connections across disciplines to create learning opportunities for greater depth and complexity to address relevant engineering, scientific and societal challenges (e.g. STEM, mathematics, social science, language arts, health, career connected learning).	Amplify Science fosters a myriad of interdisciplinary connections throughout its units. First, by facilitating opportunities to practice actively reading texts, using scientific vocabulary, and writing evidence-based arguments, resources within Amplify Science support students in developing the disciplinary literacy skills necessary to read and write like scientists and engineers. Math connections are also embedded throughout each unit, with instructional suggestions for extensions appearing in activities that offer a particularly strong opportunity for further engagement with mathematics. In fact, the Teacher's Guide of every unit of Amplify Science contains a "Standards and Goals" document that outlines not only the Next Generation Science Standards that are addressed in that unit, but the Common Core Language Arts and Mathematics Standards, as well. Amplify Science students are exposed to a wide variety of science and engineering careers regularly throughout program media. In addition, in each unit of Amplify Science, students take on the role of a science or engineering professional to investigate a real-world problem, giving them a chance to see themselves in these roles. They also take part in two engineering internship units per year which require students to develop, test, and optimize a solution to an engineering problem. Each Amplify Science unit has an "Opportunities for Unit Extensions" resource (located on the Program Hub) that includes suggestions for integrating art and design with science through connections to Science, Technology, Engineering, the Arts and Mathematic (STEAM). This resource also includes strategies for other cross-disciplinary extensions, such as assigning a research project that would enhance students' learning about the unit's central phenomenon while supporting their development of informational literacy. Examples: ● Grade 6, *Weather Patterns* unit, Lesson 1.4, **Activities 2–3** (including Teacher Support) ● Grade 7, *Geology on Mars* unit, Lesson 2.1, **all Activities** ● Grade 7, *Matter and Energy in Ecosystems* unit, Lesson 4.3, **all Activities** (including Teacher Support) ● Grade 8, *Natural Selection Engineering Internship* unit, Day 5, **all Activities** (including Teacher Support) ● Grade 8, *Force and Motion* unit, Lesson 2.1, **Activities 2–3** (including Teacher Support)

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Criterion 1.2: Science Phenomena & Engineering Design-Based Engagement Science Phenomena & Engineering Design-Based Engagement Materials center science phenomena and engineering design problems that drive student learning and engage students as directly as possible in authentic and relevant experiences.	**1.2.1: CONCEPTUAL UNDERSTANDING** Phenomena and/or problems: ● target learning goals across the three dimensions; ● connect to grade-level and/or grade-band disciplinary core ideas; ● create shared student experiences as entry points to learning.	In each Amplify Science unit, students are asked to inhabit the role of a scientist or engineer in order to figure out scientific phenomena through a 21st century, real-world problem context. Over the course of the unit, students collect and make sense of evidence from multiple sources and through a variety of modalities, ensuring that they have multiple vehicles through which to develop and articulate their understanding of each phenomenon. As the class progresses through their lessons, students move back and forth from firsthand investigation to secondhand analysis and synthesis, formulating an increasingly complex explanation to help them solve the problem at hand. Each unit also provides students with opportunities to apply what they have learned to solve new problems and/or newly-learned practices in different contexts. This enables students to demonstrate deep understanding of phenomena and practices. In addition to figuring out and explaining phenomena, each year of Amplify Science 6–8 has two Engineering Internship Units that are focused on engineering design in which students apply science ideas in order to design functional solutions to real-world problems, and iteratively test those solutions to determine how well they meet specific criteria. Students develop their understanding of science ideas from firsthand investigation and text, and apply them in designing a solution to an engineering problem. They then evaluate their solutions to see how well they meet a set of criteria for quality. Unit-level examples: ● Grade 6, *Traits and Reproduction* unit, Unit Overview page, **Unit Overview**, **Coherence Flowcharts** (under Printable Resources), and **Standards and Goals** (under Teacher References) ● Grade 7, *Phase Change* unit, Unit Overview page, **Unit Overview, Coherence Flowcharts** (under Printable Resources), and **Standards and Goals** (under Teacher References) ● Grade 8, *Light Waves* unit, Unit Overview page, **Unit Overview, Coherence Flowcharts** (under Printable Resources), and **Standards and Goals** (under Teacher References) Lesson-level examples: ● Grade 6, *Earth's Changing Climate Engineering Internship* unit, Day 1, **Overview**, **Standards**, and **all Activities** ● Grade 8, *Evolutionary History* unit, Lesson 1.2, **Overview**, **Standards**, and **all Activities**
	1.2.2: SENSE-MAKING/PROBLEM SOLVING Materials center opportunities for students to: ● communicate their thinking through reflection and explanation; ● apply scientific understandings to make sense of phenomena and design solutions to problems.	Amplify Science presents students with multiple modalities to both figure out the unit's scientific phenomena and articulate their understanding. For example: ● Talking: Student-to-student discourse is a key indicator of a productive learning environment, and talking is a key modality for instruction in an Amplify Science class. This is more than just partner activities or group work. Students have numerous opportunities for structured student-to-student discourse, with low-stakes and high-stakes opportunities to share ideas, use newly acquired vocabulary, and craft oral scientific explanations and arguments. ● Writing: Students in Amplify Science have frequent opportunities for both low- and high-stakes writing in order to help them reflect on and make sense of what they are learning. From shared writing, to numerous formative assessment opportunities, to end-of-unit summative assessment writing assignments, students are learning how to express their scientific arguments in writing using evidence, vocabulary, and proper structure. ● Modeling: Digital and paper "modeling tools" empower students to create, and later revise, visualizations of their understandings of key scientific phenomena at critical points in the curriculum.

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		In addition, each unit provides students with explicit opportunities to apply what they have learned to solve new problems and/or use newly-learned practices in different real-world contexts. This enables students to demonstrate a deep understanding of phenomena and practices. Examples: ● Grade 6, *Earth's Changing Climate* unit, Lesson 2.6, **Overview** and **all Activities** ● Grade 6, *Ocean, Atmosphere, and Climate* unit, Lesson 1.4, **Overview** and **all Activities** ● Grade 7, *Chemical Reactions* unit, Lesson 1.6, **Overview** and **all Activities** ● Grade 7, *Populations and Resources* unit, Lesson 4.3, **Overview** and **all Activities** ● Grade 8, *Magnetic Fields* unit, Lesson 1.5, **Overview** and **all Activities**
	1.2.3: AUTHENTIC APPLICATION Materials include meaningful contexts for students to practice key skills and build important concepts by: ● making connections to their daily lives, including to their homes, neighborhoods, and communities; ● build upon students' cultural funds of knowledge.	The lessons within Amplify Science include numerous opportunities to elicit and build upon students' personal experiences and family and community funds of knowledge. Each unit includes a document that provides additional strategies and tools to augment these opportunities. This document is titled *Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds* and is located within Printable Resources on the Unit Overview page. Unit-level examples: ● Grade 6, *Ocean, Atmosphere, and Climate* unit, Unit Overview page, **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources) ● Grade 8, *Magnetic Fields* unit, Unit Overview page, **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources) ● Grade 8, *Earth, Moon, and Sun* unit, Unit Overview page, **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources) Lesson-level examples: ● Grade 6, *Traits and Reproduction* unit, Lesson 1.2, **Overview** and **all Activities** (including Teacher Support) ● Grade 7, *Phase Change* unit, Lesson 1.2, **Overview** and **all Activities** (including Teacher Support in Activity: Investigating Methane on Titan)

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Criterion 1.3: Learning Progressions & Coherent Storylines Materials integrate conceptual understanding linked to empirical evidence and explanations that allow students' understanding to deepen and become more complex over time across the three dimensions (NGSS: Appendix E, Appendix F and Appendix G).	**1.3.1: COHERENT STORYLINES** Materials explicitly identify: ● how grade-appropriate 3D learning builds within a lesson or unit; ● how learning builds across grade levels, grade bands, ● and/or within a high school course(s).	Amplify Science was designed with an emphasis on coherence. In creating the program, the curriculum development team at the Lawrence Hall of Science did not treat each performance expectation (PE) separately as a box to be checked. Rather, developers bundled groups of related PEs together, then crafted instructional units that would allow students to explore these standards meaningfully and coherently through investigation of each unit's real world problem and overarching scientific phenomenon. To accomplish this, developers analyzed each PE, along with its constituent dimensions, enabling them to fully understand the intent of the standard. Developers then analyzed across PEs and their dimensions to consider how ideas could be put to work to explain phenomena in the natural world. Developers then bundled the PEs into meaningful groups for instructional units, each of which supports students in making a deep causal explanation of a phenomenon. Finally, developers created unit Progress Builds based on that target explanation, and organized the units around those Progress Builds. Progress Builds are explicitly designed cognitive models for a given unit that express how students will develop their knowledge and competence in the domain. An explanatory understanding of phenomena (rather than mere description or isolated facts) forms the basis for the levels of a PB. Each PB level characterizes an increasingly complex causal explanation of the unit's phenomenon. Each level also builds upon the knowledge and skills from lower levels toward a more complete, mechanistic understanding of that phenomenon. Through the use of these "Progress Builds," or PBs, each successive lesson in a unit furthers student understanding of the phenomena they are investigating (and the targeted Disciplinary Core Ideas) in a structured and considered way. The Progress Build for each unit is detailed in the Progress Build resource available within the Unit Guide. Also included in every unit is a Standards and Goals resource, which clearly outlines how that particular unit fits into the Amplify Science program as a whole. This makes it easy for teachers to see how their students will have been prepared for the unit, and how they will continue to build on the understanding and experience developed in the unit after they complete it. The Amplify Science Program Guide also provides robust program-level information, including how each of the three dimensions are addressed across grade levels. Program-level examples: ● Programs & Apps menu, Science Program Guide, **Phenomena, standards, and progressions** section Examples: ● Grade 8, *Light Waves* unit, Unit Overview page: ○ **Unit Overview** ○ Printable Resources, **Coherence Flowcharts** ○ Planning for the Unit, **Unit Map** and **Progress Build** ○ Teacher References, **Standards and Goals**

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	1.3.2: DEVELOPMENTAL PROGRESSION Materials include multiple opportunities for students to build and apply knowledge and skills over time (i.e. lessons, units, grade level and/or grade bands) within the disciplinary core ideas, science and engineering practices, and the crosscutting concepts.	As described in metric 1.3.1 above, Amplify Science students engage in coherent learning experiences within and across lessons, units, grades, and grade bands. Across the 6–8 grade band, units are designed to support increasingly complex reasoning about disciplinary core ideas, as well as to address all science and engineering practices and crosscutting concepts with increased sophistication. Examples: ● **Developing DCI understanding across lessons within a unit:** The **Coherence Flowcharts** (found in Printable Resources on the Unit Overview page) for the grade 6 unit *Ocean, Atmosphere, and Climate* demonstrates how students' understanding of the DCI Earth's Systems increases in complexity throughout the unit. It also shows the lessons in which students engage with each of the seven SEPs, and how their facility with using the CCC of Cause and Effect develops across their learning experiences. ● **Developing CCC understanding across grade 8 units:** In the grade 8 unit *Earth, Moon, and Sun*, students begin to identify Patterns while interacting with a Moon Sphere Model. They investigate how the changing position of the Moon in its orbit around Earth is related to the regular pattern of moon phases we observe. In the *Natural Selection* unit, students extend their thinking about patterns as they analyze data to identify patterns in a population of animals with high variation in fur-level traits in order to draw conclusions about adaptive and non-adaptive traits. Finally, in the Science Seminar of the *Evolutionary History* unit, students organize the evidence they have collected over the course of the unit and search for patterns in the structure between two fossils in order to identify evidence that supports an argument about the shared ancestry of the species. ● **Developing DCI knowledge across grades:** In the grade 6 unit *Ocean, Atmosphere, and Climate*, students explore the Earth Systems DCI through learning about how changes to prevailing winds affect the air temperature of a location. They explore the relationship between prevailing winds and ocean currents and identify the roles of ocean density and salinity in the energy transfer processes that occur. In the grade 7 unit *Rock Transformations*, students build on these concepts of Earth systems and energy transfer and learn how magma and sediment are formed, including the role of wind in the breakdown of rock and the role of water in the movement of sediment. ● **Developing SEP facility across grades:** In the grade 6 unit *Thermal Energy*, students focus on the SEP Using Mathematics and Computational Thinking by modeling differences in temperature change. They must analyze the speed of molecules in two different chambers within temperature systems and identify the direction of energy transfer that will occur and identify the final speed of molecules once they reach equilibrium. This proportional analysis serves as the basis for future computational thinking, such as in the grade 8 unit *Natural Selection.* In this unit, rather than building visual models that represent individual units when analyzing a system, students create histograms to represent larger data sets, on the scale of populations. They analyze the changing histograms to draw conclusions about trait variation and distribution over time. ● **Developing CCC understanding across grades:** In the grade 7 unit *Geology on Mars*, students explore the CCC of Systems and System Models, which provides them a lens through which to understand how the interactions between parts of the Earth system and Mars system can create landforms, which provide evidence of past habitability. Students continue to apply this CCC throughout the middle school grades, in increasingly complex contexts, such as in the grade 8 unit *Magnetic Fields*. In this unit, students analyze a complex spaceship launch system and must identify the cause-and-effect relationships between its multiple parts, such as how the distance between magnets affects magnetic force, and how that force relates to potential and kinetic energy.

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	1.3.3: STUDENT AGENCY Materials include opportunities for student-driven learning sequences through questions and discourse that center students' lived experiences as they relate to the phenomenon and/or problem.	Students' ideas and experiences are valued and validated throughout the multimodal learning experiences that comprise Amplify Science lessons. Jigsaw activities, for example, allow students to become experts on one part of the content and to be exposed to the full range of content included in the activity. This helps motivate students to be responsible for sharing their information accurately, and allows them to practice this role in order to gain confidence in understanding and communicating science ideas. Reading activities are always followed by a student-to-student discussion where students share their insights and questions with each other and with the whole class. Through talking and developing a collaborative environment, students feel comfortable asking questions of each other, challenging assumptions, and learning from each other. Amplify Science units include a number of other opportunities to elicit and build upon students' personal experiences and to invite their questions in order to drive learning forward, as well. The *Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds* document that is available in each unit provides teachers with strategies for eliciting and building upon students' funds of knowledge using activities and tools such as the *Family and Community Connections Homework* and the *Personal Connections Concept Maps*. Through these tools and through eliciting students' personal experience during suggested moments throughout every unit, teachers collect student ideas and questions and invite students to reflect upon how their thinking has changed, identify questions that their investigations have answered, and ask new questions based on their evolving understanding of the unit phenomenon. Unit-level examples: ● Grade 6, *Metabolism* unit, Unit Overview, **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources) Lesson-level examples: ● Grade 7, *Plate Motion Engineering Internship* unit, Day 5, **Overview** ● Grade 8, *Force and Motion Engineering Internship* unit, Day 4, **Overview** ● Grade 8, *Natural Selection* unit, Lesson 4.1, **Overview** ● Grade 8, *Magnetic Fields* unit, Lesson 4.1, **Overview**

Part 2: Equitable Student Engagement and Cultural Pedagogy Criteria [K-HS]

Criterion	Description	Examples in Text (MAXIMUM OF FIVE EXAMPLES PER METRIC; PROVIDED BY PUBLISHER)
Criterion 2.1: Engagement & Motivation Materials give opportunities for student-driven learning, and rigor is maintained across all options. Materials should focus on relevant topics, authentic contexts, and experiences, and give students the opportunity to make connections with their goals, interests, and values.	**2.1.1: RELEVANCE** Materials include relevant topics of student interest and strategic access to authentic contexts and tools that give students the freedom to make connections to their experiences, goals, and interests. Additionally, materials support the value of science as a sensible, useful, and worthwhile subject.	Every unit of Amplify Science has students inhabiting the role of a scientist or engineer in order to investigate a real-world problem. These real-world problems provide relevant, developmentally appropriate contexts through which students will investigate different scientific phenomena. Contexts like medical issues, severe weather, and spacecraft launches resonate with students, sparking their interest and making science applicable to their own world. Teachers are supported in further emphasizing relevance to students through the strategies outlined in the *Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds* document included in each unit. By situating science instruction within realistic contexts and with explicit connections to their lives, the program empowers students to believe in their own ability to affect change using science. Unit-level examples: ● Grade 7, *Phase Change Engineering Internship* unit, Unit Overview page, **Unit Overview** (within Unit Overview) and **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources) ● Grade 8, *Natural Selection Engineering Internship* unit, Unit Overview page, **Unit Overview** (within Unit Overview) and **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources) Lesson-level examples: ● Grade 6, *Metabolism* unit, Lesson 1.2, **Activity: Introducing Medical Student Role** (including Teacher Support) ● Grade 8, *Earth, Moon, and Sun* unit, Lesson 1.2, **Activities 1–2** (including Teacher Support)

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	2.1.2: COLLABORATIVE LEARNING Materials include tasks that provide students opportunities to engage in the process of learning collaboratively, as well as, opportunities to express their learning individually.	Opportunities for students to work together and gain experience with the collaborative nature of science occur throughout every unit of the program. In fact, the vast majority of lessons include partner and small group activities mixed with whole class discussions. Students are sharing devices when using digital tools, sharing books as a part of partner reading, and collaborating in groups for discussions and investigations. From collaboratively reasoning through ideas and practicing the language of argumentation during discourse routines to working together to iteratively design and test functional solutions to design problems, Amplify Science students consistently engage in activities that enable them to develop skills in building knowledge cooperatively while also expressing their ideas individually. Examples: ● Grade 6, *Metabolism* unit, Lesson 4.2, all Activities (including Teacher Support) ● Grade 6, *Metabolism Engineering Internship* unit, Day 6, **all Activities** (including Teacher Support in Activity: Reviewing Design Feedback) ● Grade 7, *Plate Motion Engineering Internship* unit, Day 6, **Activity: Reviewing Design Feedback** (including Teacher Support) and **Activity: Testing Final Designs** ● Grade 8, *Force and Motion* unit, Lesson 4.2, **all Activities** (including Teacher Support) ● Grade 8, *Force and Motion Engineering Internship* unit, Day 2, **Activity: Egg Drop Challenge**
	2.1.3: INDIVIDUAL STUDENT ADAPTABILITY Materials include instructional strategies for supporting unfinished learning from prior grade levels and extensions for students who are ready to deepen their understanding of grade-level content.	Amplify Science materials help teachers gauge students' level of understanding before beginning each unit. A formative Pre-unit assessment designed to invite students' initial ideas about the unit phenomenon kicks off each unit and is accompanied by an Assessment Guide to support review and interpretation of responses. Also providing information about preconceptions students may have coming into a unit are the Progress Build and Science Background documents. Reviewing the information on preconceptions can help teachers identify what to look for before and while students engage in the unit in order to help them be successful with the content. Necessary prerequisite knowledge, meanwhile, is clearly outlined within the Standards and Goals document. Teachers can use this information as a guide for catching students up if there is relevant unfinished learning from prior years. Because of the multimodal nature of the program, however, students will have multiple points of entry into the unit's content and pre-teaching is usually unnecessary. To help meet students where they are at during instruction, a Differentiation Brief outlining specific suggestions for supporting students who need more challenge, students who need more support, and other populations is included in every lesson in the program. Read more about the Differentiation Brief in metric 3.2.1. Unit-level examples: ● Grade 6, *Earth's Changing Climate* unit, Unit Overview page, **Progress Build** and **Science Background** (under Planning for the Unit) and **Standards and Goals** (under Teacher References) ● Grade 7, *Phase Change* unit, Unit Overview page, **Progress Build** and **Science Background** (under Planning for the Unit) and **Standards and Goals** (under Teacher References) Lesson-level examples: ● Grade 6, *Ocean, Atmosphere, and Climate* unit, Lesson 2.6

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		• Grade 7, *Plate Motion Engineering Internship* unit, Day 8, **Differentiation** • Grade 8, *Harnessing Human Energy* unit, Lesson 1.1, **Differentiation**
Criterion 2.2: Culturally Responsive Instructional Support Culturally responsive instruction refers to the explicit recognition and incorporation of students' cultural knowledge, experience, and ways of being and knowing in science teaching, learning, and assessment.	**2.2.1: ASSET-BASED PERSPECTIVE** Materials support educators to identify, value, and maintain a high commitment to students' experiences from their homes and communities that are leveraged as resources for science teaching and learning.	Amplify Science units include numerous opportunities to elicit and build upon students' personal experiences and family and community funds of knowledge. Phenomena, design problems, and science article topics have been chosen to include subjects relevant to students' interests and concerns and to encourage students to make connections to their own experiences, goals, and interests. In the *Personal Connections Concept Map* routine that is outlined in the *Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds* document, which is included in every unit, students are invited through a series of discussion prompts to share their ideas and personal, home, and community experiences related to the unit phenomenon or problem that they will be seeking to explain or solve. In addition to the guidance on eliciting and leveraging student experiences, Amplify Science provides teachers with information on supporting their English learners in leveraging their home language as resources for science teaching and learning. By virtue of knowing more than one language, English learners are equipped with linguistic resources. They know that language can be used to describe, argue, explain, and persuade — and these are similar to the linguistic tools necessary for understanding science concepts and engaging in science practices. By building on this awareness of the use and function of language, students are able to learn the language of science and feel less anxious about their language abilities. The curriculum focuses on the transferable skills that English learners already possess in order to support their science language development. Related to this is the use of students' native languages in the classroom. Research shows that the use of native language helps students access relevant background knowledge and make sense of ideas. In addition to promoting culture and community in the classroom, use of native language helps English learners to transfer language skills from their home language to English. Unit-level examples: • Grade 7, *Rock Transformations* unit, Unit Overview page, **Unit Overview** and **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources) • Grade 8, *Magnetic Fields* unit, Unit Overview page, **Unit Overview** and **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources) Lexxon-level examples: • Grade 6, *Microbiome* unit, Lesson 1.1, **Differentiation** • Grade 6, *Metabolism Engineering Internship* unit, Day 1, **Differentiation** • Grade 8, *Earth, Moon, and Sun* unit, Lesson 3.1, **Differentiation**

	2.2.2: FRAMES OF REFERENCE Materials utilize multiple frames of reference for developing and demonstrating science competence that correspond to a variety of cultural perspectives and experiences.	Throughout the Amplify Science program, students encounter ethnically diverse people in Amplify Science's articles, media, and other learning materials, and are inspired by scientists and engineers from a variety of ethnic and cultural backgrounds who represent diversity with respect to gender and disability. The variety of cultural perspectives and experiences presented gives students multiple frames of reference for developing their understanding of the science ideas with which they are engaging. Additionally, Amplify Science is rooted in the research-based Do, Talk, Read, Write, Visualize model of learning, meaning students engage with science and engineering practices, figure out disciplinary core ideas, and utilize and apply crosscutting concepts in multiple modalities across thoughtful, structured lessons. In every unit, students will regularly be: collecting firsthand evidence through hands-on investigations, observations of video clips, and/or the use of a digital simulation (Do); participating in student-to-student discussions (Talk); actively reading engaging science texts (Read); writing scientific arguments and explanations (Write); and visualizing scientific phenomena in ways never before possible (Visualize). By offering students different ways of acquiring knowledge and experience, multiple means of expressing their understanding, and a variety of resources through which to engage with the content, the program promotes educational equity. Unit-level examples: ● Grade 6, *Microbiome* unit, Unit Overview page, **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources) Lesson-level examples: ● Grade 7, *Plate Motion Engineering Internship* unit, Day 2, **Meet and Engineer Who Designs City Streets** (under Digital Resources) ● Grade 8, *Light Waves* unit, Lesson 1.3, **Activity 3** (including Teacher Support) ● Grade 8, *Force and Motion* unit, Lesson 1.3, **all Activities** ● Grade 8, *Magnetic Fields* unit, Lesson 1.2, **all Activities** (including Teacher Support in Activity 6)

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	2.2.3: INCLUSIVE CULTURAL VIEWS Materials include pathways to science competence that leverage cultural perspectives that affirm student identities and reflect knowledge of students' background experiences and social realities.	Culturally and Linguistically responsive teaching is one of two overarching frameworks that informed the development of Amplify Science. The program's engaging projects, hands-on and interactive experiences, collaborative learning experiences, and frequent student-to-student discussions provide opportunities for all voices to be included. Students are also encouraged to express themselves using the language in which they are most comfortable as they engage in these experiences, while also adding science disciplinary language to their language repertoires. This is validating for students and promotes extended science talk. Because of diverse cultural and linguistic backgrounds, informational background knowledge of students can vary greatly. The activation and use of background knowledge is integral to students' development of science ideas, and supporting students in using what they already know helps them make connections to what they are learning. Therefore, in the Amplify Science curriculum, students are asked to think through and discuss what they already know at strategic points within the instruction through activities such as: ● Partner discourse routines: Throughout the program, students often discuss ideas with a partner. Often, these discussions are designed to allow students to share their initial ideas about a topic, practice using science vocabulary, and discuss experiences they have had related to a topic or idea. ● Warm-Ups: The brief written Warm-Up at the beginning of each session often allows students to reflect on what they already know or have just learned in order to prepare them for what they will learn in the coming session, and is designed to be accessible for all students. ● Anticipation guides: With an anticipation guide, students learn how to activate their background knowledge, focus their reading, and support statements with textual evidence. An anticipation guide may help English learners engage with and reflect on key ideas before, during, and after reading. Unit-level examples: ● Grade 7, *Plate Motion* unit, Unit Overview page, **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources) ● Grade 8, *Harnessing Human Energy* unit, Unit Overview page, **Eliciting and Leveraging Students' Prior Knowledge, Personal Experiences, and Cultural Backgrounds** (under Printable Resources Lesson-level examples: ● Grade 6, *Traits and Reproduction* unit, Lesson 1.2, **Activities 1 and 4** ● Grade 6, *Thermal Energy* unit, Lesson 1.2, **Differentiation** and **Activities 1, 2 and 4** ● Grade 8, *Light Waves* unit, Lesson 1.2, **Activities 2 and 4**

Part 3: Technical Usability Criteria [K-HS]

Criterion	Description	Metric 1
Criterion 3.1: Supports for Teachers The materials include opportunities for teachers to effectively plan and utilize materials with integrity and to further develop their own understanding of the content.	**3.1.1: SUPPORTING GUIDANCE** Materials provide teacher guidance with useful annotations and suggestions for how to utilize the student materials, visual models, and ancillary materials, with specific attention to engaging students to guide their scientific development.	Every unit of Amplify Science has a robust Teacher's Guide containing all of the unit's lesson plans, differentiation strategies, and a vast assortment of instructional supports and resources at the unit, lesson, and activity level. The Teacher's Guide includes a wealth of resources through which Amplify Science teachers can develop and extend their knowledge and effectively guide students through their scientific development, including: ● **Unit-level documentation**: Every unit contains a suite of documents that provides teachers support in understanding not only how the unit will unfurl, but why it does so in the way it does. These documents include an overview of the unit's guiding questions, lesson summaries, instructions on using the digital apps, science background information and common student misconceptions, assessment overviews, a list of materials found in the unit's kit, clear definitions of the learning progressions, and more. ● **Clear lesson instructions**: Every lesson has quick summaries, clear step-by-step instructions, slides, model language to use in class, answer keys with sample student responses, recommendations for classroom set up, rubrics for scoring written assessments, and a listing of standards covered. ● **Embedded teacher supports**: Each lesson comes with clear strategies to scaffold the lesson for different populations of students, including those needing additional challenge, those needing extra support, and English Learners. Individual activities often have "Teacher Support" notes, which provide classroom management tips, science background information, supports in three-dimensional instruction, and more. ● **Program Hub**: An additional space for teachers to find programmatic information such as remote learning supports, pedagogical insights, and on-demand training videos, is available at any time. ● **Help Desk**: Available live by phone, email, or online chat, the Help Desk can answer any technology questions, adjust student rosters as needed, and consult teachers on pedagogical and content queries. Unit-level examples: ● Grade 7, *Populations and Resources* unit, Unit Overview page, **Printable Resources**, **Planning for the Unit**, and **Teacher References** ● Grade 7, *Chemical Reactions* unit, Unit Overview page, **Printable Resources**, **Planning for the Unit**, and **Teacher References** ● Grade 8, *Earth, Moon, and Sun* unit, Unit Overview page, **Printable Resources**, **Planning for the Unit**, and **Teacher References** Lesson-level examples: ● Grade 6, *Weather Patterns*, Lesson 3.2, **Overview**, **Materials & Preparation**, **Differentiation**, **Standards**, **Digital Resources,** and **all Activities** (including Teacher Support) ● Grade 8, *Light Waves*, Lesson 3.1, **Overview**, **Materials & Preparation**, **Differentiation**, **Standards**, **Digital Resources,** and **all Activities** (including Teacher Support)

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	3.1.2: SCIENCE KNOWLEDGE FOR TEACHING Materials contain adult-level explanations and examples of relevant science concepts so that teachers can improve their own knowledge of the subject.	One of the resources included in the robust suite of teacher resources described in metric 3.1.1 above is the Science Background. This teacher-facing document gives valuable science background about the disciplinary core ideas, science and engineering practices, and crosscutting concepts addressed in the unit. It also describes the rationale for the selection and organization of particular concepts within the unit, and a discussion of alternate conceptions students may hold about these concepts. Examples: ● Grade 6, *Metabolism* unit, Unit Overview page, **Science Background** (under Planning for the Unit) ● Grade 7, *Matter and Energy in Ecosystems* unit, Unit Overview page, **Science Background** (under Planning for the Unit) ● Grade 7, *Rock Transformations* unit, Unit Overview page, **Science Background** (under Planning for the Unit) ● Grade 7, *Phase Change* unit, Unit Overview page, **Science Background** (under Planning for the Unit) ● Grade 8, *Light Waves* unit, Unit Overview page, **Science Background** (under Planning for the Unit)
	3.1.3: HOME CONNECTION Materials provide strategies for informing all partners–including students, parents, or caregivers– about the program and suggestions for how they can help support student progress and achievement.	Amplify Science provides resources that make it possible for parents and guardians to be engaged with their students' STEM education. For instance: ● Every unit of Amplify Science includes a downloadable letter titled, "Information About the NGSS for Parents and Guardians." ● Every unit also includes optional "Family Homework Experiences" and "Family and Community Connections Homework" copymasters. These activities can encourage interaction and discussion between students and their families around science concepts, which has been found to be beneficial for student learning. ● The Amplify Science Program Hub, which is available to all teachers from within the curriculum website, provides resources that teachers can use for the purpose of continuing instruction and supporting families during remote learning. ● A Caregiver Hub website provides overall information about what Amplify Science is and how their students will be engaging in science. It also provides a slide deck for use at back-to-school night, as well as unit-specific family discussion questions that can be used with students. Program-level examples: ● Caregiver Hub website Unit-level examples: ● Grade 6, *Microbiome* unit, Unit Overview page, **NGSS Information for Parents and Guardians** (under Printable Resources) Lesson-level examples: ● Grade 7, *Geology on Mars* unit, Lesson 1.2, **Family Homework Experience: Exploring Geologic Processes at Home copymaster** and **Family and Community Expertise Scavenger Hunt** (under Digital Resources) ● Grade 7, *Plate Motion Engineering Internship* unit, Day 1, **Family and Community Connections Homework** (under Digital Resources)

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		• Grade 8, *Magnetic Fields* unit, Lesson 3.5, **Activity 6** (including Teacher Support)
	3.1.4: CONTENT EDITABILITY Materials are designed to allow a teacher to differentiate content and varied modes of communication within lessons, tasks, or other activities for students.	All Amplify Science lessons are broken into activities with suggested pacing and time allotments, equipping teachers with the information they need to gauge how to break up or extend a lesson, if necessary, so it can fit within the requisite time frame. This flexibility also helps with differentiating content appropriately, particularly when combined with the fact that all of the Classroom Slides that are available to use in delivering content for each lesson are editable. Teachers will find opportunities for insight into student progress and guidance for identifying potential follow up or differentiation needs throughout Amplify Science. There are frequent embedded formative assessments that occur throughout the program to check for understanding, with interpretation guidance included. For example, each Amplify Science unit features a prominent formative assessment opportunity called a Critical Juncture Assessment. Occurring at the midpoint of each unit, the Critical Juncture helps teachers to ensure all students are at the necessary Progress Build (or learning progression) level before moving on to the next lessons of the unit. Student performance on the Critical Juncture drives auto-grouping for the differentiated, adaptive learning experiences in the lesson that follows. For more on differentiating Amplify Science instruction to ensure that all learners are appropriately challenged and can be successful with the content demands of science, see metrics 3.2.1 and 3.2.3. Information on the various modes in which students may engage with lesson content can be found in metric 3.2.4. Unit-level examples: • Grade 6, *Traits and Reproduction* unit, Unit Overview page, **Embedded Formative Assessments** (under Teacher References) • Grade 7, *Chemical Reactions* unit, Unit Overview page, **Embedded Formative Assessments** (under Teacher References) Lesson-level examples: • Grade 6, *Earth's Changing Climate* unit, Lesson 2.5**, all Activities** • Grade 7, *Plate Motion* unit, Lesson 2.7**, all Activities** • Grade 8, *Evolutionary History* unit, Lesson 2.7**, all Activities**
Criterion 3.2: Supports for Students Materials have explicit teacher support with suggestions (routines, strategies, etc.) for how they can meet the needs of individual learners. Support materials include live updates (data sources, current	**3.2.1: STRATEGIES FOR SPECIAL POPULATIONS** Materials provide scaffolds to support students from special populations in their regular and active participation in scientific learning (i.e. students who are multilingual, students experiencing disabilities, and/or students identified as TAG).	Following the principles of Universal Design for Learning (one of two overarching frameworks that informed the development of the program), Amplify Science units and lessons are designed to be universal and flexible in allowing: choices; different paths toward goals; and multiple means of engagement, representation, assessment, and action and expression, so that all students have an opportunity to learn during lessons, and to be successful with lesson and unit goals. Metric 3.2.3 describes the many embedded scaffolds that were deliberately incorporated into the Amplify Science curriculum. In addition, every lesson of the program includes a Differentiation Brief that gives teachers specific suggestions on making that particular lesson maximally impactful for their own students. The Differentiation Brief describes what is built into the lesson to support diverse learning needs; highlights potential challenges teachers should be aware of; and provides specific strategies for differentiating instruction. The Differentiation Brief contains the following sections:

events, etc.).		• **Embedded Supports for Diverse Learners:** Every unit is designed with diverse learners in mind, with the goal of providing rigorous yet accessible science instruction. Each lesson is intentionally planned to provide multiple entry points for students, and to enable all students to be successful with all of the activities. This section of the Differentiation Brief highlights the scaffolds already embedded within the lesson so that teachers can take advantage of the power of these carefully designed activities. • **Potential Challenges in This Lesson:** This section of the Differentiation Brief highlights aspects of the lesson that may present particular cognitive, linguistic, or social challenges for students. • **Specific differentiation strategies for English Learners (ELs)**: This section of the Differentiation Brief points out activities that could pose linguistic challenges for ELs or reduce their access to science content, and suggests supports and modifications accordingly. Suggestions include linguistic supports to bolster students' understanding of science content, supports for engaging with science texts, ideas for helping students participate in discussions, multiple ways students can express their ideas in writing, and more. • **Specific differentiation strategies for students who need more support:** Every lesson includes ways for teachers to support those students who are struggling or who have special needs. These additional scaffolds are to be used entirely at the discretion of the teacher, and provide targeted suggestions tailored for the activities in that particular lesson. • **Specific differentiation strategies for students who need more challenge**: Every lesson has ways for a teacher to expand upon the lesson, or go beyond the scope of what is expected in that lesson. This section of the Differentiation Brief provides suggestions that allow students to engage with content more deeply, explore the material with a new purpose, pursue more independent research on a topic, and more. Examples: • Grade 6, *Weather Patterns* unit, Lesson 1.2, **Differentiation** • Grade 6, *Metabolism Engineering Internship* unit, Day 1, **Differentiation** • Grade 7, *Phase Change* unit, Lesson 1.2, **Differentiation** • Grade 7, *Geology on Mars* unit, Lesson 1.3, **Differentiation** • Grade 8, *Natural Selection* unit, Lesson 2.4, **Differentiation**
	3.2.2: STUDENT DIFFERENTIATION Materials provide extensions and/or opportunities for all students to engage with grade-level science at varied levels of complexity.	Amplify Science units are designed to be appropriately challenging for most students most of the time. As described in metric 3.2.1 above, in-context differentiation suggestions are included in every lesson. One section of the Differentiation Brief is always devoted to providing strategies for differentiating content for students who need more support. Meaningful strategies for engaging students who need more challenge are also a part of the Differentiation Brief when appropriate. In addition, each unit of Amplify Science has a document titled, "Opportunities for Unit Extensions." Within this document, which is housed in the Amplify Science Program Hub, teachers will find unt-specific suggestions for things like implementing relevant field trips, offering research projects, and integrating art and design with science through connections to Science, Technology, Engineering, the Arts and Mathematic (STEAM) in order to extend the unit's learning opportunities. Unit-level examples: • Programs & Apps menu, Science Program Hub, Additional Unit Materials, Grade 7, *Plate Motion*, "Unit Extensions" tab, **PM: Opportunities for Unit Extensions**

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		Lesson-level examples: ● Grade 6, *Thermal Energy* unit, Lesson 1.2, **Differentiation** ● Grade 7, *Geology on Mars* unit, Lesson 1.1, **Differentiation** ● Grade 8, *Harnessing Human Energy* unit, Lesson 1.2, **Differentiation** ● Grade 8, *Force and Motion Engineering Internship* unit, Day 1, **Differentiation**
	3.2.3: EMERGENT BILINGUAL STUDENT SUPPORT Materials provide strategies and support for students who read, write, and/or speak in a language other than English to enable their full participation in scientific learning.	In addition to lesson-specific differentiation strategies (see metric 3.2.1), language support for English learners is included throughout the program in two fundamental ways: 1. **Embedded instructional design**: Many scaffolds such as gradual release, graphic organizers, argumentation instruction, language practice, and creating and using models, are embedded within the instructional plan and are presented to teachers through the teacher materials and to all students as activities within the unit. 2. **Additional support**: Additional activities and specific methods for supporting English learners are provided for use as needed, especially in the Teacher Support notes within the lessons. Additional supports include but are not limited to word banks, use of multiple-meaning words, leveraging students' native languages, and cognates. To further accommodate English learners who may be native Spanish speakers, Spanish materials that mirror their English counterparts in both content and quality are also available. ● First, a Teacher Spanish license gives teachers access to a button that enables them to toggle back and forth between seeing Spanish and English in their Amplify Science accounts. When in Spanish mode, teachers can: ○ Download PDFs of all classroom wall materials, copymasters, assessments, and more; Use Spanish projections and slides in class; See all model teacher talk in Spanish; Access digital versions of the student books in Spanish; Access video read-alouds of each student book in Spanish ● Second, a Student Spanish license enables students to see all content, including assignments, Simulations, slides, notebook pages, and articles, in Spanish from their personal accounts. Teachers can choose students' language, or they can give students the power to toggle back and forth as needed. ● Third, Spanish Print Kits provide hard-copy, translated versions of all student-facing materials such as science articles, copymasters, print materials, assessments, and Investigation Notebooks. Program-level examples: ● The English Learners section of the **Amplify Science Program Guide** (within Access and Equity) describes both the embedded and additional instructional supports identified above in detail. Lesson-level examples: ● Grade 6, *Weather Patterns* unit, Lesson 1.6, **Activities 2–4** (including Teacher Support in Activity 2) ● Grade 6, *Metabolism* unit, Lesson 2.2, **Activities 2–4** (including Teacher Support in Activity 2) ● Grade 7, *Phase Change* unit, Lesson 4.4, **all Activities** (including Teacher Support in Activity 1) ● Grade 8, *Harnessing Human Energy* unit, Lesson 1.4, **Activities 2–4** (including Teacher Support)

	3.2.4: STUDENT EDITABILITY Digital materials include resources for students that are editable and allow for communication of understanding and thinking.	Amplify Science student materials are available in both print and digital formats, providing varied modes for students to use in communicating their thinking, including writing, drawing, diagramming, and revising. students have the ability to access the curriculum website if devices are available and if teachers choose for them to be used. Like their teacher, students' view of the curriculum website hosts all lesson instructions, media, links to digital sims, science articles with annotation and read aloud tools, lesson-specific vocabulary, assessments (which can be locked by the teacher), and more. They also have a space called MyWork, which serves as a repository of their assigned lessons, completed work, and grades/feedback from their teacher. Students can interact with lesson content online, as described, or they can use print Investigation Notebooks to access nearly all of the same information offline. Program-level examples: ● Programs & Apps menu, Help, **Student use of technology in grades 6–8** Unit-level examples: ● Grade 7, *Plate Motion Engineering Internship* unit, Unit Overview page, **Apps in this Unit** (under Teacher References) Lesson-level examples: ● Grade 6, *Microbiome* unit, Lesson 1.1, **all Activities** ● Grade 6, *Metabolism* unit, Lesson 2.4, **all Activities** ● Grade 8, *Light Waves* unit, Lesson 2.5, **all Activities**
Criterion 3.3: Digital Learning Design Elements The materials are attentive to digital design elements specific to structure, support for users, and adaptability of materials. *This criterion is not required. Quality indicators are provided for evaluation if digital components are included.	**3.3.1: MATERIALS USABILITY** The organizational structure of the digital materials allows for intuitive navigation and meaningful interaction on a variety of devices.	The Amplify Science digital materials are delivered on the Amplify platform at learning.amplify.com, which is accessible from a variety of devices. The design of the platform has been thoroughly tested and researched to be an intuitive experience that allows students and educators easy access to all materials and features. Every year, based on usage patterns, usability testing, and feedback from users, Amplify continues to refine the design to make the experience even better. Examples: ● Programs & Apps menu, **PD Library** ● Programs & Apps menu, Help ○ **Article**: **Navigating Amplify Science grades 6–8** ○ **Article: Welcome, Amplify Science 6-8 students!** ● Amplify Customer Requirements page

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	3.3.2: LEARNING RESOURCES The digital materials provide support for users in a variety of settings, including: ● Professional learning resources to support educators' use of the materials. ● Robust supports to help families understand and utilize the materials while supporting their students at home. ● Support for students working independently.	Teachers can engage in self-study via online videos and other resources accessible in the PD library via the Amplify Science Program Hub. For instance, downloadable participant notebooks and other materials from PD sessions can be accessed at any time from the Amplify Science Program Hub. A library of training videos are also available on-demand and include a variety of topics to help teachers successfully use the Amplify Science program, from the basics of accessing and facilitating lessons, to planning and pacing tips, scope and sequence information, the pedagogical approach to the NGSS, navigating the program, and more. In addition, Amplify Science often offers live and recorded webinars for teachers and instructional leaders focusing on key components of the curriculum and featuring the curriculum developers from the Lawrence Hall of Science. A back-to-school webinar series is also offered free of charge each year. These videos, webinars, and resources can be used for self-paced reference or during collaborative planning time or with PLCs throughout the school year. Resources are also available to help families understand the Amplify Science program and engage their students in science discussions at home. Please see metric 3.1.3 for more information. Finally, for the purposes of independent work, teachers can assign work digitally, which students can access via their Amplify accounts from any supported device at any time. Robust remote learning supports are also available in the Program Hub for teachers to send to students in the event of school closures or extended absences. Examples: ● Programs & Apps menu, Science Program Hub, **PD Library**, **On-demand Resources**, and **Professional Learning Resources** ● Programs & Apps menu, Help Center ● Caregiver Hub website
	3.3.3: MEDIA INTEGRATION Digital and multimedia elements support, rather than distract from, intended learning outcomes and instructional content.	Amplify Science is a digitally *enhanced* curriculum. It integrates technology thoughtfully and intentionally—not in a "tech for tech's sake" fashion but in ways that reflect how 21st-century scientists and engineers use it to enable their investigations and explorations. Each unit in Amplify Science 6–8 includes custom-designed digital tools that were developed exclusively for the Amplify Science program. These serve as venues of exploration and data collection, allowing students to explore scientific concepts that might otherwise be invisible or impossible to see with the naked eye. Much like real scientists do, students of Amplify Science will use Sims to gain insight into processes that occur on the microscopic scale, or alternately, to speed up processes that might otherwise take thousands or millions of years to observe. In addition to these powerful Simulations and modeling tools, students who have access to devices in grades 6–8 have a suite of other digital tools at their disposal as well, including: ● Student view of the curriculum website: The curriculum website hosts all lesson instructions, media, links to digital sims, science articles, lesson-specific vocabulary, and more. The curriculum website is accessible from any of the supported devices, from any location, making it a convenient resource for students. ● Media: Detailed maps, vibrant images, sound recordings, and other media erve as authentic evidence sources

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		students collect and make sense of as they work to figure out each unit's anchor phenomenon. In addition, opening each unit, a video introduces students to their scientist or engineer role and to the overarching real-world, 21st-century problem they will be investigating over the course of the unit. Amplify Science is proud to represent and feature a diverse range of people in our media and program visuals, including women and men from different demographic groups. ● Science articles: Articles are available online for both students and teachers, or teachers can download, print, and distribute the articles in PDF format. When accessing the articles online, students have the ability to highlight with five different colors, add notes and annotations (which are saved to that student's account), copy/paste, and can even then hand in those highlights and annotations to the teacher. In addition, when vocabulary terms appear in an article, students have the ability to access in-context definitions (and the Spanish translation) by simply clicking the vocabulary word. ● My Work: This area is a customizable space where middle school students can organize their portfolio of Amplify work. In My Work, students can easily review the teacher feedback from Classwork, as well as revise and submit activities. This is also where students will access assigned activities if their teacher uses that feature. Unit-level examples: ● Grade 6, *Earth's Changing Climate* unit, Unit Overview page, **Apps in this Unit** (under Teacher References) ● Grade 7, *Matter and Energy in Ecosystems* unit, Unit Overview page, **Apps in this Unit** (under Teacher References) Lesson-level examples: ● Grade 6, *Traits and Reproduction* unit, Lesson 1.2, **Activities 1–3** ● Grade 6, *Microbiome* unit, Lesson 1.1, **all Activities** ● Grade 8, *Light Waves* unit, Lesson 1.2, **Activities 1–2**
	3.3.4: ADAPTABILITY OF MATERIALS Digital materials allow teachers to adjust and adapt documents and other included resources to meet student needs.	Every Amplify Science lesson has a set of Classroom Slides available in a downloadable Powerpoint and Google Slide file that walks teachers and students through that lesson's activities. Teachers have the ability to edit these files, giving them the power to personalize lessons to their students' interests and needs. Unit assessments are also provided in editable Microsoft Word format to further aid teachers in customization. The lesson-specific differentiation strategies also help teachers ensure their students can access content at a level that is appropriate for them. Examples: ● Grade 6, *Microbiome* unit, Lesson 1.2, **Classroom Slides 1.2|PowerPoint** and **Classroom Slides 1.2|Google Slides** (under Digital Resources) ● Grade 7, *Phase Change* unit, Lesson 1.5, **Classroom Slides 1.5|PowerPoint** and **Classroom Slides 1.5|Google Slides** (under Digital Resources) ● Grade 7, *Rock Transformations* unit, Lesson 4.4, **Rock Transformations End-of-Unit Assessment copymaster|Word** (under Digital Resources) ● Grade 8, *Earth, Moon, and Sun* unit, Lesson 2.2, **Classroom Slides 2.2|PowerPoint** and **Classroom Slides 2.2|Google Slides** (under Digital Resources) ● Grade 8, *Evolutionary History* unit, Lesson 4.4, **Evolutionary History End-of-Unit Assessment copymaster|Word** (under Digital Resources)

Part 4: Assessment Criteria [K-HS]

Criterion	Description	Metric 1
Criterion 4.1: Formative Assessment Process Instructional materials incorporate the formative assessment process: ● Materials employ clear learning goals and performance criteria to elicit evidence of student thinking. ● Feedback informs the teaching and learning process. ● Students have agency to monitor and adjust their own learning.	**4.1.1: CLARITY OF LEARNING GOALS** Materials are designed around clear learning goals and written in grade-appropriate, student friendly language.	Amplify Science was designed from the ground up specifically to address the Next Generation Science Standards (NGSS). This means that, right from the start, the intent of the materials was to champion the spirit of three dimensional learning, rather than simply being retrofitted to fulfill the requirements of mandated standards. Please refer to the submitted document titled "OR Sci. Adoption 2023 _Amplify Science 6-8 Correlation" for evidence of the alignment between the Amplify Science learning goals and the NGSS. Amplify Science units make learning targets clearly visible through the explicit use of Unit, Chapter, and Investigation Questions. These questions are posted on the classroom wall as they are encountered by students, and remain there for the duration of the unit. Having the guiding questions displayed on the classroom wall serves as a visual reminder of what students have already learned, as well as what the purpose of their current investigation is. Learning objectives are also clearly identified for teachers with bulleted "students learn" statements within the Lesson Overview. The 3-D statements that are provided for teachers in every lesson in Amplify Science also succinctly describe the main goal and activities of the lesson. Examples: ● Grade 6, *Traits and Reproduction* unit, Lesson 1.2, **Activity 2** (including Teacher Support) ● Grade 7, *Plate Motion* unit, Lesson 1.3, **Overview** and **Standards** ● Grade 7, *Geology on Mars* unit, Lesson 1.1, **Activities 1 and 2** (including Teacher Support) ● Grade 8, *Harnessing Human Energy* unit, Lesson 2.1, **Activity 2** ● Grade 8, *Magnetic Fields* unit, Lesson 2.4, **Overview** and **Standards**
	4.1.2: ELICITATION OF EVIDENCE Instructional tasks and activities elicit a variety of evidence of student thinking, including opportunities for student self assessment and reflection.	The Lawrence Hall of Science specifically designed the Amplify Science assessment system to provide teachers with credible, actionable, and timely diagnostic information about student progress toward each unit's learning goals and their mastery of the grade-level appropriate disciplinary core ideas, science and engineering practices, and crosscutting concepts. Assessments within a unit include formal and informal opportunities for students to demonstrate understanding, and for teachers to gather information while still allowing them the flexibility to decide what to score and what to simply review. These assessment opportunities encompass a range of modalities that, as a system, reflect current research on effective assessment strategies. Assessment opportunities in Amplify Science units include: ● **Pre-Unit assessment (formative):** Combination of auto-scored multiple-choice questions and rubric-scored written responses. ● **On-the-Fly assessment (formative):** Designed to provide regular information to the teacher with minimal impact on instructional time, these embedded assessments leverage the formative opportunities in the learning experience students are already engaged in. ● **Self-assessment (formative):** One per chapter; brief opportunities for students to reflect on their own

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		learning, ask questions, and reveal ongoing thoughts about unit content. ● **Critical Juncture assessment (formative):** Occurring toward the midpoint of each unit, similar in format to the Pre-Unit and End-of-Unit assessments. ● **Science Seminar & Final Written Argument (summative for unit concepts; formative for the practice of scientific argumentation):** Culminating performance task for each unit, includes a rubric for assessing core unit concepts and a rubric for assessing students' developing facility with the practice of scientific argumentation. ● **End-of-Unit Assessment (summative):** Combination of auto-scored multiple-choice questions and rubric-scored written responses. ● **Investigation assessment (summative):** In each grade, there is one opportunity to summatively assess an embedded performance in which students plan and conduct investigations. ● **Portfolio assessment (summative):** Through the portfolio assessment students have an opportunity to reflect on their goals and growth throughout the school year as they compile and reflect on work products from each unit. ● **Benchmark Assessments***: Delivered three times a year, benchmark assessments report on students' facility with each of the grade-level appropriate DCIs, SEPs, CCCs, and performance expectations. *Note: to ensure the assessments measure progress towards Performance expectations and not the progress within the program itself, the NGSS Benchmark Assessments were developed by Amplify outside of development efforts involving the Lawrence Hall of Science and Amplify Science. Examples: ● Grade 6, *Ocean, Atmosphere, and Ocean* unit: ○ Lesson 1.1, **all Activities** ○ Lesson 1.4, **Activity 3** (including Embedded Formative Assessment information) ○ Lesson 1.5, **Activity 2** (including Embedded Formative Assessment information) and **Activity 4** ○ Lesson 2.1, **Activity 2** (including Embedded Formative Assessment information) ○ Lesson 2.3, **Rubrics for Assessing Students' Investigations of Water and Air Temperature** and **Activity 3** (including Embedded Formative Assessment information)
	4.1.3: INTERPRETATION OF FEEDBACK Materials facilitate the provision of meaningful and strengths-based feedback to move learning forward. ● Student-to-student ● Educator-to-student ● Student-to-educator	**Student-to-student:** Each year of Amplify Science K–5 has a unit focused on engineering design in which students iteratively test solutions to real-world problems, compare data and share ideas with peers, and provide feedback on each others' designs. In addition, across all units, a number of discourse routines enable students to regularly provide/receive feedback to/from their peers, such as Word Relationships, Write and Share, and the Science Seminar routines. **Educator-to-Student:** Guidance on interpreting student performance along the three dimensions of the NGSS is included throughout Amplify Science units. Categories of evaluation guidance include assessment guides/rubrics, possible student responses, and Look for/Now what? notes for each On-the-Fly Assessment, which include descriptions of evidence of understanding and recommendations for instructional adjustments in response. **Student-to-educator:** At the end of every chapter of every unit, students engage in a metacognitive self-assessment. This quick yet important activity asks students to reflect on what they do or do not yet understand about the core concepts from the unit. By reviewing students' responses to these self-assessments, teachers gain a sense of what students believe

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		about what they know. The questions and comments students record can also provide insight into what concepts students may need additional support on, what they are curious about, and/or what they are interested in. Examples: ● Grade 6, *Thermal Energy* unit, Lesson 2.1, **Activity 3** (including Embedded Formative Assessment information) ● Grade 7, *Populations and Resources* unit, Lesson 1.4, **Activity 3** (including Embedded Formative Assessment information) and **Activity 5** (including Teacher Support) ● Grade 7, *Chemical Reactions* unit, Lesson 1.6, **Activity 3** (including Embedded Formative Assessment information) and **Activity 5** (including Teacher Support) ● Grade 8, *Force and Motion Engineering Internship* unit, Day 6, **all Activities** ● Grade 8, *Light Waves* unit, Lesson 1.4, **Activity 3**
	4.1.4: ACTION & ADJUSTMENT Materials guide educators and students to act on feedback and determine the next steps for learning.	As described in metric 4.1.2, Amplify Science assessments work as a system. Careful consideration is given to ensure that each unit includes multiple opportunities for students to provide evidence of understanding of the focal concepts and practices in a given unit, as well as instructional suggestions for taking action based on that evidence. Assessments within a unit include formal and informal opportunities for students to demonstrate understanding, and for teachers to gather information and determine next steps. Nearly every lesson in Amplify Science includes an embedded formative assessment, and teachers are provided with guidance on how instruction may be adjusted based on student responses. In addition, student performance on the Critical Juncture, which occurs at the midpoint of each core unit, drives auto-grouping for the differentiated, adaptive learning experiences in the lesson that follows. Examples: ● Grade 6, *Earth's Changing Climate* unit, Lesson 2.5, **all Activities** ● Grade 6, *Earth's Changing Climate Engineering Internship* unit, Day 5, **all Activities** ● Grade 7, *Rock Transformations* unit, Lesson 2.6, **all Activities** ● Grade 7, *Plate Motion Engineering Internship* unit, Day 6, **all Activities** ● Grade 8, *Evolutionary History* unit, Lesson 4.3, **all Activities**

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Criterion 4.2: Performance Assessments Materials center science phenomena and engineering design problems that align with the depth, breadth, and cognitive demand of the standards. High-quality performance assessments: ● affirm students' funds of knowledge and interests. ● integrate the three dimensions to allow for multiple representations of thinking. ● can be iterated over time.	**4.2.1: ALIGNMENT** Materials include performance tasks that show clear and full alignment to science standards and reflect the 3D focus by including the disciplinary core ideas, crosscutting concepts, and science and engineering practices.	The majority of assessments in Amplify Science are embedded performance tasks, and all are aligned to the learning goals of the unit (which in turn are aligned to the NGSS). Every unit of Amplify Science includes one document called Assessment System (located within Teacher References on the Unit Overview page), and another called **3-D Assessment Objectives** (in the Printable Resources area of the Unit Overview page). The Assessment System resource includes a table that summarizes the range of assessment opportunities in the unit, noting the lesson in which each occurs, the form each takes, and the nature of guidance for reviewing and adjusting instruction in response to assessment information. The 3-D Assessment Objectives document, meanwhile, contains a page for each of the unit's focal Performance Expectations and shows a clear breakdown of the lesson and activities in which each constituent dimension of those Performance Expectations is assessed. Examples: ● Grade 6, *Weather Patterns* unit, Unit Overview page, **3-D Assessment Objectives** (under Printable Resources) and **Assessment System** (under Teacher References) ● Grade 6, *Thermal Energy* unit, Unit Overview page, **3-D Assessment Objectives** (under Printable Resources) and **Assessment System** (under Teacher References) ● Grade 7, *Chemical Reactions* unit, Unit Overview page, **3-D Assessment Objectives** (under Printable Resources) and **Assessment System** (under Teacher References) ● Grade 7, *Matter and Energy in Ecosystems* unit, Unit Overview page, **3-D Assessment Objectives** (under Printable Resources) and **Assessment System** (under Teacher References) ● Grade 8, *Natural Selection* unit, Unit Overview page, **3-D Assessment Objectives** (under Printable Resources) and **Assessment System** (under Teacher References)
	4.2.2: CULTURAL AFFIRMATION Performance assessments utilize and affirm students' interests and cultural backgrounds. Tasks are suitable for both group and individual engagement.	Amplify Science's multiple measure approach to assessment is designed to minimize bias by providing a wide variety of opportunities for students to demonstrate understanding—not just text, but also talk, diagramming and modeling, and hands-on (especially for early elementary) modalities. All assessments are carefully reviewed by psychometricians, assessment experts, science educators, and literacy experts to improve accessibility and eliminate bias. As a part of this process to create unbiased assessments, language in assessment items is carefully chosen to be grade-level appropriate and to avoid common pitfalls of assessment design, like false cognates and complex grammatical structure or tense. As an important element of construct validity, contexts used for assessment items and performance tasks are carefully chosen to avoid advantaging or disadvantaging students from different backgrounds—we want student performance to be a function of the understanding and practices being learned and assessed, not the set of experiences they are familiar with. Because of the range of modalities in which assessments occur, students have multiple opportunities in each unit to engage in tasks that are whole class, group, and individual in nature. Examples: ● Grade 6, *Metabolism* unit, Unit Overview page, **Assessment System** and **Embedded Formative Assessments** (both under Teacher References) ● Grade 6, *Earth's Changing Climate* unit, Unit Overview page, **Assessment System** and **Embedded Formative**

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		Assessments (both under Teacher References) ● Grade 7, *Rock Transformations*, Unit Overview page, **Assessment System** and **Embedded Formative Assessments** (both under Teacher References) ● Grade 8, *Force and Motion* unit, Unit Overview page, **Assessment System** and **Embedded Formative Assessments** (both under Teacher References) ● Grade 8, *Light Waves* unit, Unit Overview page, **Assessment System** and **Embedded Formative Assessments** (both under Teacher References)
	4.2.3: AUTHENTICITY Performance assessments allow students to work with relevant science phenomena, engineering design problems, and authentic audiences.	The Amplify Science assessment system is grounded in the principle that students benefit from regular and varied opportunities to demonstrate understanding through performance. In practice, this means that for the overwhelming majority of assessment opportunities in each unit, student conceptual understanding is revealed through authentic engagement in the science and engineering practices. In every unit, students inhabit the role of a scientist or engineer in order to figure out scientific phenomena through a 21st-century, real-world problem context. Students investigate phenomena, construct scientific explanations, develop and use models, and engage in argument as a core part of the problem-based deep dives of each unit. Embedded assessments occur as they take part in these activities, and all are tied to unit-specific learning progressions (called Progress Builds) that define each level of students' increasingly sophisticated understanding of the anchoring phenomenon of the unit. Unit-level examples: ● Grade 7, *Plate Motion Engineering Internship* unit, Unit Overview page, **Unit Overview** and **Assessment System** (under Teacher References) Lesson-level examples: ● Grade 6, *Weather Patterns* unit, Lesson 4.3, **all Activities** ● Grade 6, *Microbiome* unit, Lesson 2.7, **all Activities** ● Grade 8, *Earth, Moon, and Sun* unit, Lesson 2.7, **Activity 2** ● Grade 8, *Light Waves* unit, Lesson 3.3, **Activity 3**
	4.2.4: CLARITY & FEEDBACK Performance assessments use clear scoring criteria and allow for multiple iterations of student thinking based on feedback.	Students' iteration on their initial thinking serves as an important source of insight into their progress. Accordingly, instances where students are demonstrating a change in their thinking are often leveraged as assessment opportunities. For example, On-the-Fly Assessments often focus on activities in which students are revising earlier thinking. In addition, each unit begins with a Pre-Unit Assessment, which is an individually scorable assessment opportunity meant to reveal students' prior knowledge and preconceptions, and gauge their facility for using the SEPs and CCCs. Each unit concludes with a summative End-of-Unit Assessment, scored with the same diagnostic model of the Pre-Unit assessment. Because these two assessments are similarly formatted and target the same learning goals, they provide a clear way to document student learning outcomes over a given unit. Clear guidance on interpreting student performance on these assessments is provided for teachers. For example, Assessment Guides/rubrics are included for all Pre-unit, Critical Juncture, End-of-Unit, and Investigation Assessments. Each Assessment Guide/rubric contains information on gauging the level of student performance on the respective assessment task, with suggestions for student feedback and questioning strategies to advance learning, revise

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		performance, or elicit and clarify student thinking. Each On-the-Fly Assessment, meanwhile, includes a two-part description of what evidence of understanding would look like for the task (Look for) and how instruction may be adjusted in response (Now what?). Examples: ● Grade 6, *Ocean, Atmosphere, and Climate* unit, Lesson 2.5, **Critical Juncture Answer Key and Scoring Guide** (under Digital Resources) ● Grade 6, *Traits and Reproduction* unit, Lesson 4.3, **Rubrics for Final Written Argument** (under Digital Resources) and **Activities 2–6** ● Grade 7, *Phase Change* unit, Lesson 4.4, **Rubrics for Assessing Students' Final Written Arguments** (under Digital Resources) and **all Activities** ● Grade 8, *Earth, Moon, and Sun* unit, Lesson 4.3, **Rubrics for Assessing Students' Final Written Arguments** (under Digital Resources) and **all Activities** ● Grade 8, *Force and Motion* unit, Lesson 2.1, **Rubrics for Assessing Students' Investigations of Forces on Different Objects**" (under Digital Resources) and **Activity 2**

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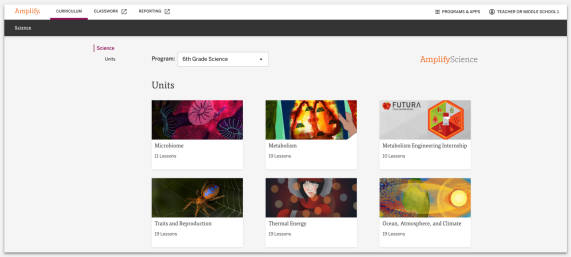
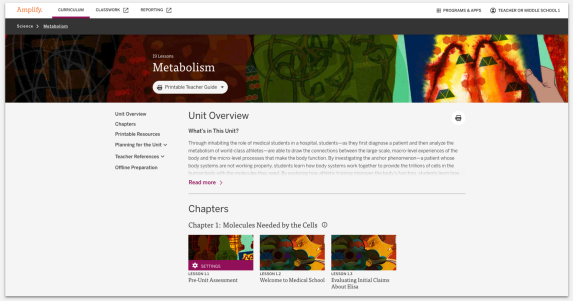
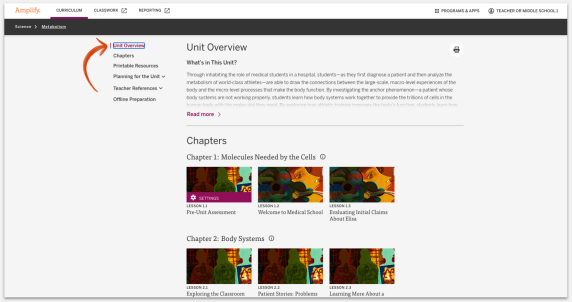
QCD/IMET Citation guidance

	Citation phrase	Example image	How to get there
1	Grade [number], [*Unit Name*] unit		Log into learning.amplify.com using the provided reviewer credentials. Select the grade level listed in the citation from the drop down, then select the unit name listed in the citation.
2	**Unit Overview page**		Select any unit from a respective grade level page (see row 1)
3	**Unit Overview**		Navigate to the respective unit's Unit Overview page (see row 2), then select the **Unit Overview** section within the menu on the left-hand side.

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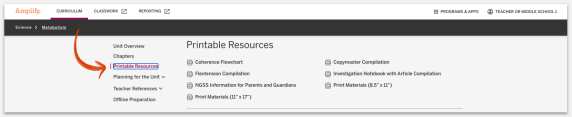
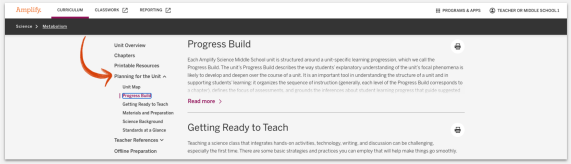
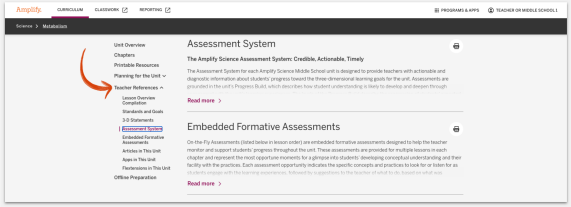
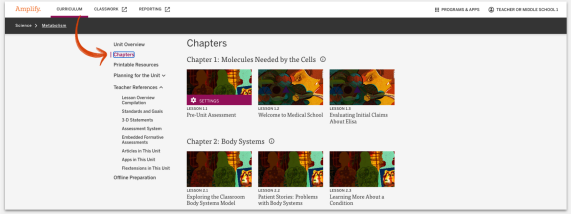
4	**Resource title** (under Printable Resources)		Navigate to the respective unit's **Unit Overview page** (see row 2), then select the **Printable Resources section**. Click on the respective resource(s) (which will be bolded in the citation).
5	**Resource title** (under Planning for the Unit)		Navigate to the respective unit's Unit Overview page (see row 2), then expand the **Planning for the Unit section** within the menu on the left-hand. Select the respective resource(s) (which will be bolded in the citation) from the submenu underneath Planning for the Unit.
6	**Resource title** (under Teacher References)		Navigate to the respective unit's Unit Overview page (see row 2), then expand the **Teacher References section** within the menu on the left-hand. Select the respective resource(s) (which will be bolded in the citation) from the submenu underneath Teacher References.
7	Lesson [number]		Navigate to the respective unit's **Unit Overview** page (see row 2), then scroll to our select **Chapters** from the left-hand menu. Scroll within the Chapters section to find the lesson listed in the citation, then select it to open the lesson.

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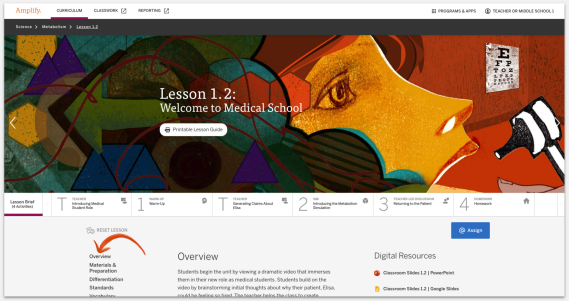
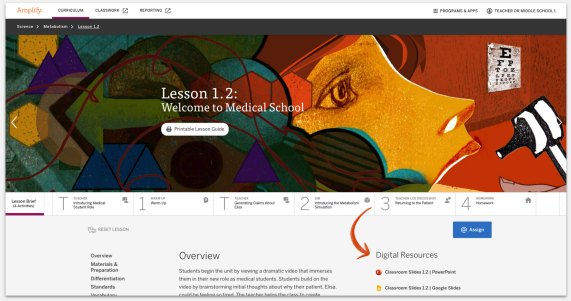
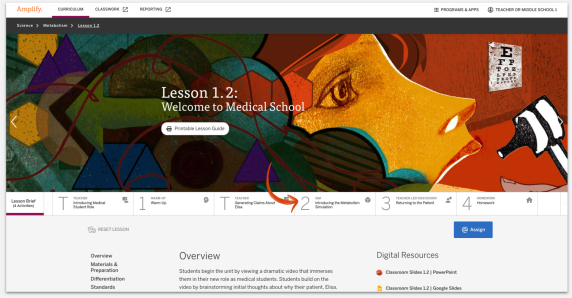
8	Lesson [number], **Overview** **Materials & Preparation** **Differentiation** **Standards**		Navigate to the **lesson** (see row 7), then select the specified section of lesson information from the **left-hand menu**. Note: if the lesson is listed by itself, all of the lesson information should be reviewed, including all activities (see row 10).
9	**Resource title** (under Digital Resources)		Navigate to the **lesson** (see row 7), then select the specified resource from the **Digital Resources** area on the right-hand side.
10	Lesson [number], **Activity [number]**		Navigate to the lesson (see row 7), then select the activity in the **Activity Ribbon** under the lesson image. Scroll past the **Instructional Guide** to see what students will experience on the student platform. When an activity has multiple steps, click through each of them using the **numbered buttons** at the bottom of the page. Note: if no activity is specified in the citation, all activities should be reviewed.

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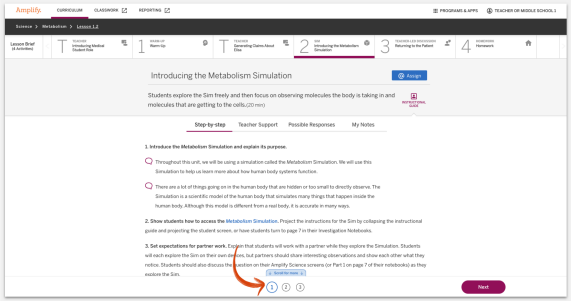
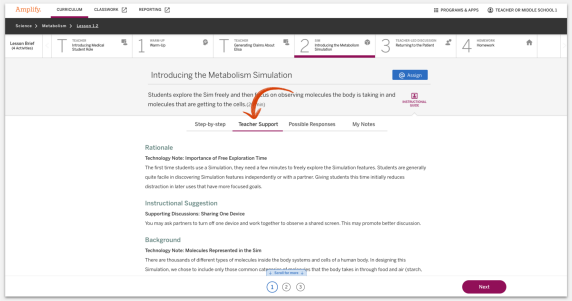
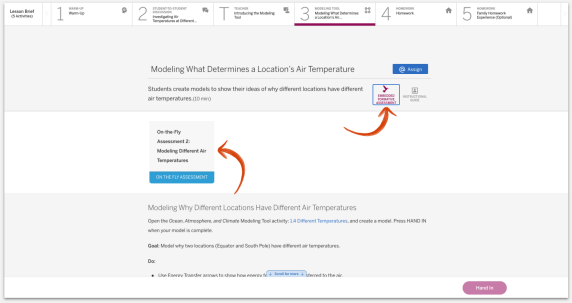
			
11	Lesson [number], Activity [number] (**including Teacher Support notes**)		Navigate to the listed activity's section of the lesson (see row 10), then click the **Teacher Support** tab.
12	Lesson [number], Activity [number] (**including Embedded Formative Assessment information**)		Navigate to the lesson (see row 7) and activity (see row 8), then select the **Embedded Formative Assessment** button with the hummingbird icon. Click on the **On The Fly Assessment button** to view assessment interpretation information.

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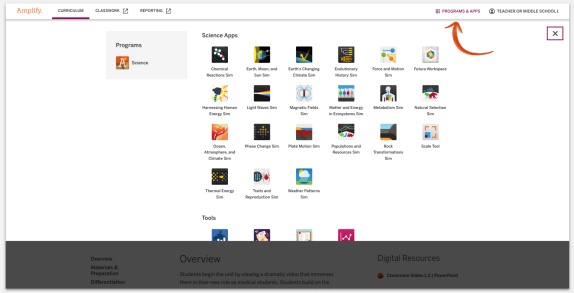
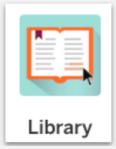
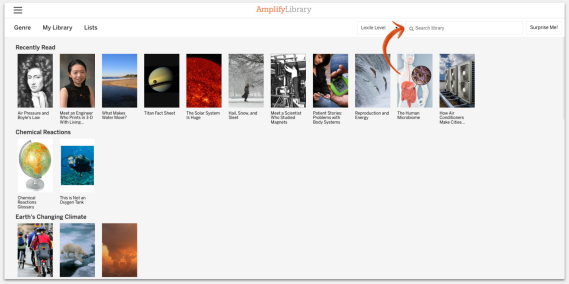
13	Programs & Apps menu		Click the **Programs & Apps** icon from the bar along the top of the screen when logged in.
14	Library	 	Open the **Programs & Apps** menu (see row 13), then scroll to the **Tools** section and select the icon labeled **Library**. Note: use the **search bar** and enter the title of the listed book.
15	Science Program Hub		Open the **Programs & Apps** menu (see row 13), then scroll to the **Other Resources** section and select the icon labeled **Science Program Hub**. Note: use the **search bar** to find the specific document or section you are reviewing.

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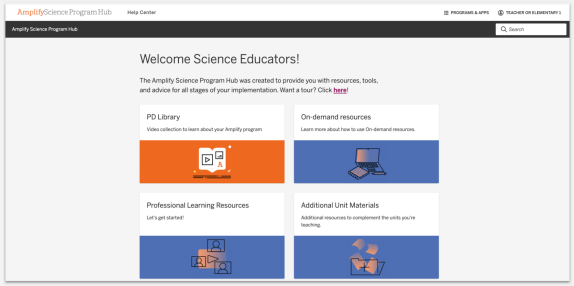
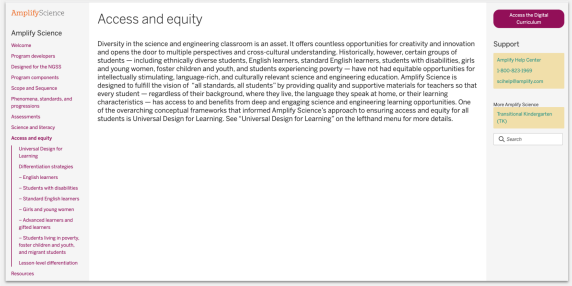
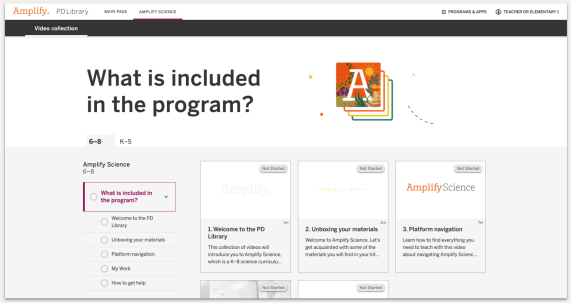
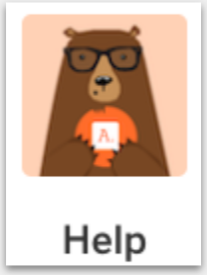
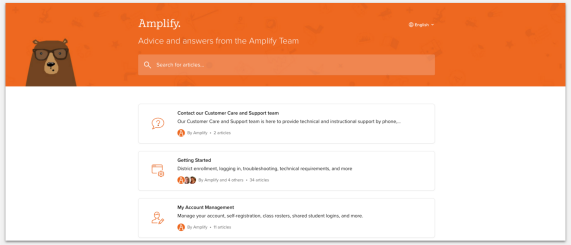
			
16	Science Program Guide	 	Open the **Programs & Apps** menu (see row 13), then scroll to the **Other Resources** section and select the icon labeled **Science Program Guide**. Note: use the **left-hand outline** or the **search bar** to find the specific section you are reviewing.
17	PD Library		Open the **Programs & Apps** menu (see row 13), then scroll to the **Other Resources** section and select the icon labeled **PD Library**. Note: Select **Amplify Science** from **Explore Programs.**

			
18	Help	 	Open the **Programs & Apps** menu (see row 13), then scroll to the **Other Resources** section and select the icon labeled **Help**. Note: use the **left-hand outline** or the **search bar** to find the specific section you are reviewing.