Response to the Review

Given the rigorous standards by which EdReports reviews science instructional materials, Discovery Education is honored that the *Middle School Science* program has been recognized to Meet Expectations for Gateway 1: Designed for NGSS.

The Next Generation Science Standards (*NGSS*) and other standards based on the *Framework for K-12 Science Education* call for a major shift in science teaching and learning. While many materials claim to address these shifts, few have met this challenge as measured by reputable, third-party evaluators such as EdReports. *Discovery Education Middle School Science* has achieved this status, addresses all the elements of the science and engineering practices, offers a flexible program pathway so that a district can select their own instructional sequence based on their needs, and most importantly provides students with highly engaging phenomena that will motivate their learning.

Students First

The evidence provided by EdReports only partially represents Discovery Education's deep commitment to developing three-dimensional learning experiences and does not capture the thoughtful, students-first components of the *Middle School Science* program. These components provide all students access to and engagement in the process of "figuring out" scientific ideas based on their own wonderings rather than simply "learning about" them. The *Discovery Education Middle School* Science program frames the learning through authentic storylines that validate students' cultures, home languages, and personal experiences. Carefully selected phenomena not only directly connect to the grade-band disciplinary core ideas but also are relevant and interesting to students to drive instruction throughout the unit. Phenomena selected for each unit range in context from local to global, as evident in the *Healing Cut* unit and *Zebra Survival* unit. The research in science education in the last two decades has made clear that connecting students to real-world experiences is the most effective approach to promoting learning in science. Research-based practices in structuring three-dimensional learning experiences are deeply embedded in each activity, lesson, and unit throughout *Discovery Education Middle School Science*. These strategies provide teachers with the support they need to make impactful instructional shifts that empower and motivate students to investigate answers to their own questions.

Research also indicates the importance of connecting instruction with students' interests and identities. Within *Middle School Science,* all students can see themselves as the principal investigators. Each unit contains a narrative through which students of different cultural backgrounds and physical abilities ask questions and discuss phenomena using their home voice. The narratives include discussions between students, their families, and friends using familiar technology like text messages and social media. The variety of phenomena, narratives, and teacher strategies provide multiple relevant connection points for students of diverse backgrounds.

Flexibility for Districts and Teachers

Discovery Education Middle School Science offers a flexible program pathway across the middle school grade bands so that a district can select their own instructional sequence based on their needs. *Middle School Science* is a modular program, which means the order in which units are addressed is up to the discretion of the district and their teachers. To assist them in this process, support materials around the appropriate conceptual progression are provided in the Program Guide along with point-of-use references for teachers within each unit.

In order to meet the flexibility needs of school districts, explicit connections from unit to unit are provided for the teacher, and not placed in student materials. As a result, the modular nature of the program prevents it from meeting EdReports criterion 2.A.I. The design of *Discovery Education Middle School Science* prioritizes schools' need for the flexibility of a modular program over the value of this criterion.

In a portion of the Gateway 2 review, EdReports claims that certain grade-band elements of the Disciplinary Core Ideas, Science and Engineering Practices, and Crosscutting Concepts are not present in the materials. Discovery Education submits the table below as evidence that these elements are, in fact, included within the *Middle School* Science program. In the cases listed, these elements are clearly claimed in the Activity Planning section for the activities indicated on the chart. EdReports provides no explanation, reasoning, or justification for why they have not considered these instances.

Location of Elements Described as "Not Present in the Materials"

Element Code	Element Text	Unit	Lesson Number	Activity Number
LS1.B-M3	Plants reproduce in a variety of ways, sometimes depending on animal behavior and specialized features for reproduction.	Hawaiian Flies	5	10
INV-M3	Evaluate the accuracy of various methods for collecting data.	Levitating Forces	4	18
DATA-M8	Analyze data to define an optimal operational range for a proposed object, tool, process or system that best meets criteria for success.	Rocket Sled	4	8
		Rocket Sled	4	9
MATH-M3	Create algorithms (a series of ordered steps) to solve a problem.	Healing Cut	5	15
ARG-M4	Make an oral or written argument that supports or refutes the advertised performance of a device, process, or system, based on empirical evidence concerning whether the technology meets relevant criteria and constraints.	Levitating Forces	6	24
		Levitating Forces	7	25
SPQ-M2	The observed function of natural and designed systems may change with scale.	Healing Cut	2	3
		Healing Cut	2	4
SC-M4	Systems in dynamic equilibrium are stable due to a balance of feedback mechanisms.	Dead Fish in the Delta	3	9

Comprehensive Support for Teachers

Focused on student access across all element levels of NGSS, extensive support for teacher planning is necessary to motivate and drive student engagement across each unit. *Discovery Education Middle School Science* provides teachers guidance at each step of the instructional cycle. Unit materials outline the storyline and the connection between the unit Anchor Phenomenon, Disciplinary Core Ideas, Science and Engineering Practices, Cross Cutting Concepts, and what students should be figuring out during each lesson. Background information is provided to assist teachers and improve their content knowledge. Research-based, activity-specific strategies for differentiation, effective methods to encourage student discourse, and scripted questioning allow teachers to successfully engage all learners. Knowing that teacher planning time is valuable, the program also contains worksheets at point-of-use for English Language Learners, Approaching Learners, and Advanced Learners.

Through phenomena-based storylines, students are expected to represent their thinking in a variety of ways, including models, scientific explanations, scientific discourse, and machine scored items. In *Discovery Education Middle School Science*, formative and summative assessments are seamlessly embedded into the learning cycle for each unit. EdReports states the “lesson-level assessment tasks are designed to reveal knowledge and use of three dimensions and support the instructional process.” Sample student responses and models assist the teacher in recognizing proficiency, across the dimensions, at the appropriate point in the unit. In addition, each unit has a summative Unit Project that encourages students to design and generate solutions to real-world problems. Digital Performance-Based Assessments (PBAs)are designed to provide evidence of student learning for each of the performance indicators and to show a transfer of knowledge to new phenomena.

Leaders in Digital Education

Discovery Education is the worldwide EdTech leader with a state-of-the-art digital platform, award-winning multimedia content and innovative classroom tools. The *Middle School Science* program harnesses the power of the platform in the visual design of the content and additional digital tools utilized by both teachers and students. Educators who use *Discovery Education Middle School Science* as their daily learning platform engage all students with carefully curated content, as well as benefit from robust enhancements such as the new interactive Quiz and the enhanced Studio. Interactive Quiz provides multiple ways for teachers to promote active learning in the classroom and trace student progress in real-time. Studio allows teachers to construct custom presentations to deliver instruction or to help students synthesize and communicate their ideas. In response to educator feedback on the *Middle School* Science program, presentation slides for each activity have been added to the program to assist in delivery in remote or face-to-face settings. Discovery Education remains committed to continuous improvement of our program and platform to meet the ever-changing needs of educators and students.

The *Discovery Education Middle School Science* program is intentionally designed to provide all students access to rigorous three-dimensional learning experiences. As important as access, student engagement in the selection of the phenomena was considered as a motivating factor to drive student learning in each unit. Collecting feedback from educators on the required level of teacher support is evidenced in the program through the robust teacher guidance across all aspects of the learning cycle. The modular nature of the program allows flexibility for districts and schools to create the sequence of learning that best meets their needs, at the same time maintaining the integrity of three-dimensional storylines grounded in the element levels of NGSS. Always striving to better support the needs of teachers and students, Discovery Education will utilize feedback from this review, along with feedback from classroom use, to inform future enhancements to the program.

Learn more at:
discoveryeducation.com/programs/science/middle-school