edreports.org

Review Criteria

Science
Grades K-5

v1.5

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About EdReports.org

Our Mission: EdReports.org is an independent nonprofit designed to improve K-12 education. EdReports.org increases the capacity of teachers, administrators, and leaders to seek, identify, and demand the highest quality instructional materials. Drawing upon expert educators, our reviews of instructional materials and support of smart adoption processes equip teachers with excellent materials nationwide.

Our Vision: All students and teachers will have access to the highest quality instructional materials that will help improve student learning outcomes.

Our Theory of Action: Credible information against quality criteria in a quickly changing marketplace helps educators make better purchasing decisions and improve student performance. Identifying excellence and improving demand for high quality, aligned instructional materials will improve the supply of quality materials over time, leading to better student achievement outcomes.

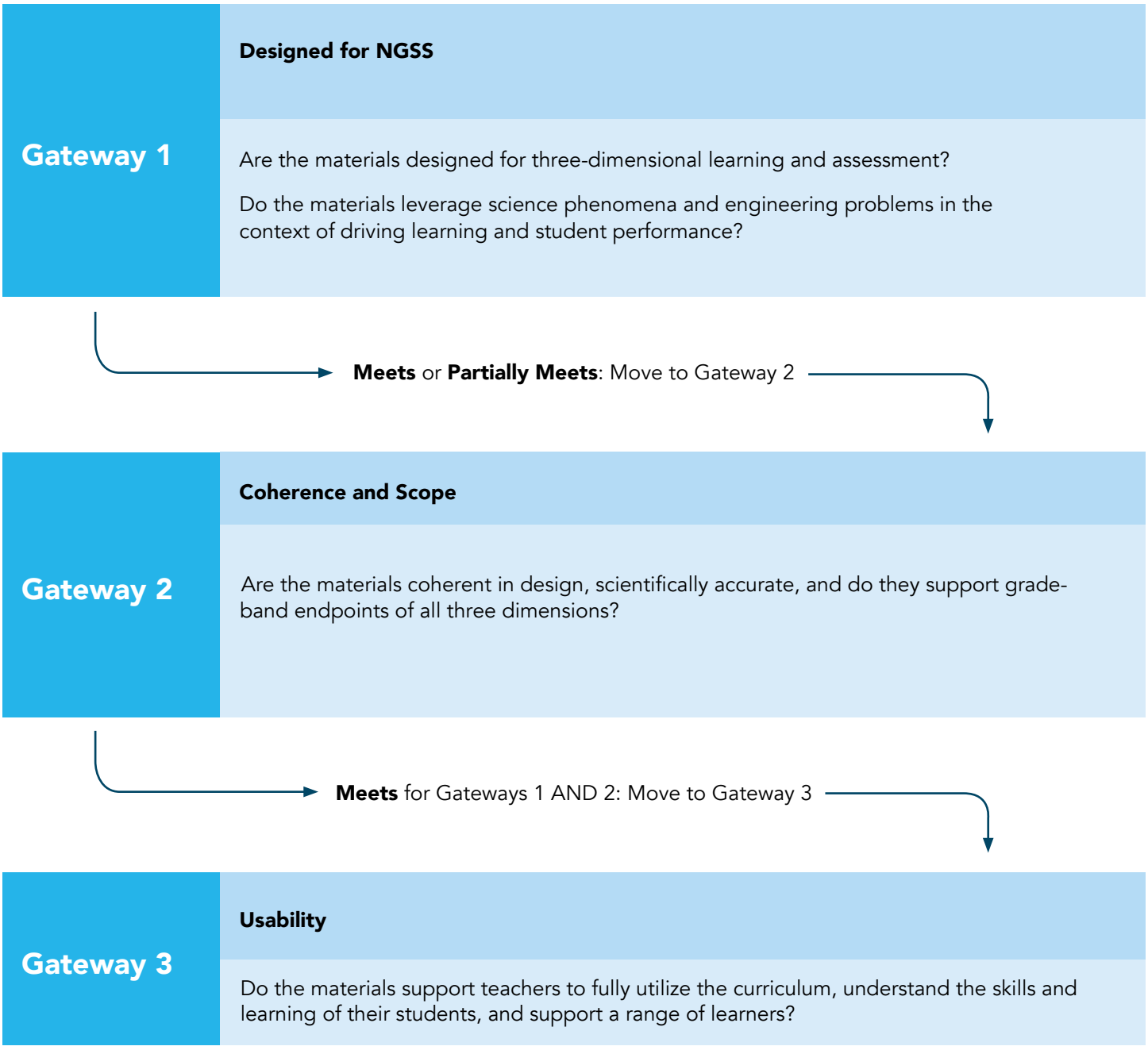
About Our Review Tools

EdReports reviewers use these review tools to create free, evidence-rich reports available on EdReports.org. These reports are developed to provide educators, stakeholders, and leaders with independent, evidence-rich information about the quality of instructional materials from those who will be using them in classrooms. Expert educators use our tools to evaluate full sets of instructional materials against criteria (see Figure 1). The tools are built from the experience of educators, curriculum experts, and leading rubric developers and organizations that have conducted reviews of instructional materials, lessons, and tasks.

To create our review tools, EdReports utilizes information from the Common Core State Standards (CCSS) and the Next Generation Science Standards (NGSS). We also conduct research into the application of commonly used rubrics, gather input from hundreds of educators during nationwide listening tours, interview content experts, and convene Anchor Educator Working Groups of expert practitioners. Continuous improvement is important to this development, and each tool is used with multiple sets of materials before being finalized. In addition, the Anchor Educator Working Group has the opportunity to refine the tools after the initial round of implementation.

EdReports' Review Criteria for year-long comprehensive programs has three major gateways (see Figure 1) to guide the evaluation process. Reviewers apply the three gateways sequentially to ensure EdReports reports convey to the field the extent to which materials are CCSS-aligned or designed for the NGSS, and are usable by educators. Those materials that meet or partially meet the expectations for Gateway 1 will move to Gateway 2. Only those materials that meet the expectations for both Gateway 1 and Gateway 2 (Alignment Indicators) will move to Gateway 3 (Usability Indicators).

Figure 1: Gateway Evaluation Process for Review of Science Materials (Grades K-5)



Gateway 1

Designed for NGSS

To identify the Gateway rating, educators use evidence gathered to score indicators related to each criterion.

REMINDER:

- Materials must "Meet Expectations" or "Partially Meet Expectations" in Gateway 1 to be reviewed in Gateway 2.
- Materials must "Meet Expectations" in BOTH Gateway 1 and Gateway 2 to be reviewed in Gateway 3.

Materials are designed for three-dimensional learning and assessment and leverage science phenomena and engineering problems in the context of driving learning and student performance.

Gateway 1 Overview	Available Points
Criterion 1.1: Three-Dimensional Learning **Indicators 1a-1c** Materials are designed for three-dimensional learning and assessment.	16
Criterion 1.2: Phenomena and Problems Drive Learning **Indicators 1d-1i** Materials leverage science phenomena and engineering problems in the context of driving learning and student performance.	12

Total Available Points in Gateway 1	28	**Meets: 24-28** **Partially Meets: 14-23** **Does Not Meet: <14**

Criterion 1.1: Three-Dimensional Learning

Materials are designed for three-dimensional learning and assessment.

Indicator	Points
1a. Materials are designed to integrate the Science and Engineering Practices (SEP), Disciplinary Core Ideas (DCI), and Crosscutting Concepts (CCC) into student learning.	
i. Materials consistently integrate the three dimensions in student learning opportunities.	0 2 4
ii. Materials consistently support meaningful student sensemaking with the three dimensions.	0 2 4
1b. Materials are designed to elicit direct, observable evidence **for** three-dimensional learning.	0 2 4
1c. Materials are designed to elicit direct, observable evidence **of** three-dimensional learning.	0 2 4

Total Available Points	16	**Meets: 14-16** **Partially Meets: 8-12** **Does Not Meet: <8**

Criterion 1.2: Phenomena and Problems Drive Learning

Materials leverage science phenomena and engineering problems in the context of driving learning and student performance.

Indicator	Points
1d. Phenomena and/or problems are connected to grade-level Disciplinary Core Ideas.	0 1 2
1e. Phenomena and/or problems are presented to students as directly as possible.	0 1 2
1f. Phenomena and/or problems drive individual lessons or activities using key elements of all three dimensions.	0 1 2
1g. Materials are designed to include both phenomena and problems.	Narrative Evidence Only
1h. Materials intentionally leverage students' prior knowledge and experiences related to phenomena or problems.	0 1 2
1i. Materials embed phenomena or problems across multiple lessons for students to use and build knowledge of all three dimensions.	0 2 4

Total Available Points	12	**Meets: 10-12** **Partially Meets: 6-9** **Does Not Meet: <6**

Gateway 1 Total	**Total Available Points**	28	**Meets: 24-28** **Partially Meets: 14-23** **Does Not Meet: <14**

Gateway 2

Coherence and Scope

To identify the Gateway rating, educators use evidence gathered to score indicators related to each criterion.

REMINDER:

- Materials must "Meet Expectations" or "Partially Meet Expectations" in Gateway 1 to be reviewed in Gateway 2.
- Materials must "Meet Expectations" in BOTH Gateway 1 and Gateway 2 to be reviewed in Gateway 3.

Materials are coherent in design, scientifically accurate, and support grade-band endpoints of all three dimensions.*

* NOTE: Indicators 2b-2c are non-negotiable; instructional materials being reviewed must score above zero points in each indicator, otherwise the materials automatically do not proceed to Gateway 3.

Gateway 2 Overview	Available Points
Criterion 2.1: Coherence and Full Scope of the Three Dimensions **Indicators 2a-2g** Materials are coherent in design, scientifically accurate, and support grade-band endpoints of all three dimensions.* * NOTE: Indicators 2b-2c are non-negotiable; instructional materials being reviewed must score above zero points in each indicator, otherwise the materials automatically do not proceed to Gateway 3.	34

Total Available Points in Gateway 2	34	**Meets: 30-34** **Partially Meets: 17-29** **Does Not Meet: <17**

▶Criterion 2.1: Coherence and Scope

Materials are coherent in design, scientifically accurate, and support grade-band endpoints of all three dimensions.

Indicator	Points
2a. Materials are designed for students to build and connect their knowledge and use of the three dimensions across the series.	
i. Students understand how the materials connect the dimensions from unit to unit.	0 1 2
ii. Materials have an intentional sequence where student tasks increase in sophistication.	0 1 2
2b. Materials present Disciplinary Core Ideas (DCI), Science and Engineering Practices (SEP), and Crosscutting Concepts (CCC) in a way that is scientifically accurate.*	0 1 2
2c. Materials do not inappropriately include scientific content and ideas outside of the grade-level Disciplinary Core Ideas.*	0 1 2
2d. Materials incorporate all grade-level Disciplinary Core Ideas.	
i. Physical Sciences	0 1 2
ii. Life Sciences	0 1 2
iii. Earth and Space Sciences	0 1 2
iv. Engineering, Technology, and Applications of Science	0 1 2
2e. Materials incorporate all grade-level Science and Engineering Practices.	
i. Materials incorporate grade-level appropriate SEPs within each grade.	0 2 4
ii. Materials incorporate all SEPs across the grade band.	0 2 4

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2f. Materials incorporate all grade-band Crosscutting Concepts.	0 4 8
2g. Materials incorporate NGSS Connections to Nature of Science and Engineering.	0 1 2

** NOTE: Indicators with an asterisk are non-negotiable; instructional materials being reviewed must score above zero points in each indicator, otherwise the materials automatically do not proceed to Gateway 3.*

Total Available Points	34	**Meets: 30-34** **Partially Meets: 17-29** **Does Not Meet: <17**

Gateway 2 Total	**Total Available Points**	34	**Meets: 30-34** **Partially Meets: 17-29** **Does Not Meet: <17**

Gateway 3

Usability

To identify the Gateway rating, educators use evidence gathered to score indicators related to each criterion.

REMINDER:

- Materials must "Meet Expectations" or "Partially Meet Expectations" in Gateway 1 to be reviewed in Gateway 2.
- Materials must "Meet Expectations" in BOTH Gateway 1 and Gateway 2 to be reviewed in Gateway 3.

Materials support teachers to fully utilize the curriculum, understand the skills and learning of their students, and support a range of learners.

Gateway 3 Overview	Available Points
Criterion 3.1: Teacher Supports **Indicators 3a-3h** The program includes opportunities for teachers to effectively plan and utilize materials with integrity and to further develop their own understanding of the content.	10
Criterion 3.2: Assessment **Indicators 3i-3l** The program includes a system of assessments identifying how materials provide tools, guidance, and support for teachers to collect, interpret, and act on data about student progress towards the standards.	10
Criterion 3.3: Student Supports **Indicators 3m-3v** The program includes materials designed for each child's regular and active participation in grade-level/grade-band/series content.	6
Criterion 3.4: Intentional Design **Indicators 3w-3z** The program includes a visual design that is engaging and references or integrates digital technology, when applicable, with guidance for teachers.	**Narrative Evidence Only**
Total Available Points in Gateway 3	26

Meets: 23-26
Partially Meets: 17-22
Does Not Meet: <17

Criterion 3.1: Teacher Supports

The program includes opportunities for teachers to effectively plan and utilize materials with integrity and to further develop their own understanding of the content.

Indicators	Scoring
3a. Materials provide teacher guidance with useful annotations and suggestions for how to enact the student materials and ancillary materials, with specific attention to engaging students in figuring out phenomena and solving problems.	0 1 2
3b. Materials contain adult-level explanations and examples of the more complex grade-level/course-level concepts and concepts beyond the current course so that teachers can improve their own knowledge of the subject.	0 1 2
3c. Materials include standards correlation information, including connections to college- and career-ready ELA and mathematics standards, that explains the role of the standards in the context of the overall series.	0 1 2
3d. Materials provide strategies for informing all stakeholders, including students, parents, or caregivers about the program and suggestions for how they can help support student progress and achievement.	Narrative Evidence Only
3e. Materials provide explanations of the instructional approaches of the program and identification of the research-based strategies.	0 1 2
3f. Materials provide a comprehensive list of supplies needed to support instructional activities.	0 1
3g. Materials provide clear science safety guidelines for teachers and students across the instructional materials.	0 1
3h. Materials designated for each grade are feasible and flexible for one school year.	Narrative Evidence Only

Total Available Points	10	**Meets: 9-10** **Partially Meets: 6-8** **Does Not Meet: <6**

▶ Criterion 3.2: Assessment

The program includes a system of assessments identifying how materials provide tools, guidance, and support for teachers to collect, interpret, and act on data about student progress towards the standards.

Indicators	Scoring
3i. Assessment information is included in the materials to indicate which standards are assessed.	**0 1 2**
3j. Assessment system provides multiple opportunities throughout the grade, course, and/or series to determine students' learning and sufficient guidance to teachers for interpreting student performance and suggestions for follow-up.	**0 2 4**
3k. Assessments include opportunities for students to demonstrate the full intent of grade-level/grade-band standards and elements across the series.	**0 2 4**
3l. Assessments offer accommodations that allow students to demonstrate their knowledge and skills without changing the content of the assessment.	**Narrative Evidence Only**

Total Available Points	10	**Meets: 9-10** **Partially Meets: 7-8** **Does Not Meet: <7**

▶ Criterion 3.3: Student Supports

The program includes materials designed for each child's regular and active participation in grade-level/grade-band/series content.

Indicators	Scoring
3m. Materials provide strategies and supports for students in special populations to support their regular and active participation in learning grade-level/band science and engineering.	**0 1 2**
3n. Materials provide extensions and/or opportunities for students to engage in learning grade-level/band science and engineering at greater depth.	**0 1 2**
3o. Materials provide varied approaches to learning tasks over time and variety in how students are expected to demonstrate their learning with opportunities for students to monitor their learning.	**Narrative Evidence Only**
3p. Materials provide opportunities for teachers to use a variety of grouping strategies.	**Narrative Evidence Only**
3q. Materials provide strategies and supports for students who read, write, and/or speak in a language other than English to regularly participate in learning grade-level/band science and engineering.	**0 1 2**
3r. Materials provide a balance of images or information about people, representing various demographic and physical characteristics.	**Narrative Evidence Only**
3s. Materials provide guidance to encourage teachers to draw upon student home language to facilitate learning.	**Narrative Evidence Only**
3t. Materials provide guidance to encourage teachers to draw upon student cultural and social backgrounds to facilitate learning.	**Narrative Evidence Only**
3u. Materials provide supports for different reading levels to ensure accessibility for students.	**Narrative Evidence Only**
3v. *This is not an assessed indicator in Science.*	

Total Available Points	6	**Meets: 6** **Partially Meets: 4-5 (*with no 0s)** **Does Not Meet: <4**

▶ Criterion 3.4: Intentional Design

The program includes a visual design that is engaging and references or integrates digital technology, when applicable, with guidance for teachers.

Indicators	Scoring
3w. Materials integrate technology such as interactive tools and/or dynamic software in ways that support student engagement in the three dimensions, when applicable.	**Narrative Evidence Only**
3x. Materials include or reference digital technology that provides opportunities for teachers and/or students to collaborate with each other, when applicable.	**Narrative Evidence Only**
3y. The visual design (whether in print or digital) supports students in engaging thoughtfully with the subject, and is neither distracting nor chaotic.	**Narrative Evidence Only**
3z. Materials provide teacher guidance for the use of embedded technology to support and enhance student learning, when applicable.	**Narrative Evidence Only**

Total Available Points	**Narrative Evidence Only**	**Meets: n/a** **Partially Meets: n/a** **Does Not Meet: n/a**

Gateway 3 Total	**Total Available Points**	26	**Meets: 23-26** **Partially Meets: 17-22** **Does Not Meet: <17**