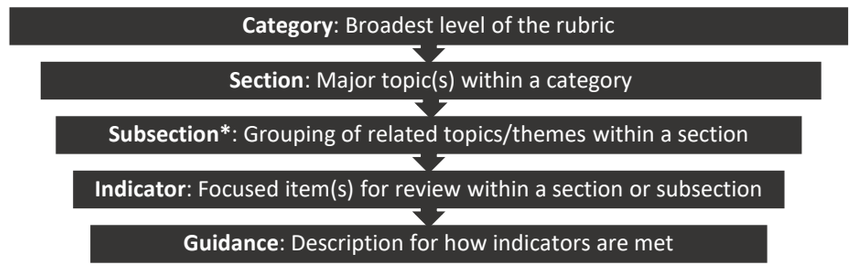
Texas Resource Review (TRR)
Science Grades K–8

Purpose

The goal of the science quality rubric is to provide guidance for evaluating the quality of science instructional materials. The rubric was developed to support LEAs choosing instructional materials for science instruction.

Structure

The rubric is arranged by category, section, subsection, indicator, and guidance. The categories are the broadest level of the rubric and serve as its foundation. Within each category are nested sections, subsections, indicators, and guidance that provide additional details and greater clarity for review items.
*Note: Not all sections contain subsections and are scored.



Categories

The rubric's categories inform LEAs about essential components of instructional material products.

Category	Description
TEKS- and ELPS-Alignment Review	This category focuses on the **standards-alignment** review of instructional materials. The TRR complements the existing State Board of Education standards-alignment review process and presents its results in the overall quality report.
Content and Instructional Approach	This category focuses on **how well** standards are addressed by instructional materials. Sections within this category evaluate guidance for effective teaching and learning specific to the content.
Educator Supports	This category focuses on aspects of instructional materials that directly relate to tools and resources for supporting instruction. Sections within this category provide information about the guidance and support students and educators receive to ensure all students learn and succeed.
Additional Information	This category provides information on the technology specifications, price, professional learning, additional language supports, and evidence-based information. This section is not scored.

Category	Section	Number of Indicators	Total Possible Points	Display on Report
TEKS- and ELPS-Alignment Review	1. Standards-Alignment	N/A	N/A	% TEKS and ELPS
Content and Instructional Approach	2. Instructional Anchor	2 indicators	8 points	% of total section points
Content and Instructional Approach	3. Knowledge Coherence	2 indicators	12 points	% of total section points
Content and Instructional Approach	4. Productive Struggle	1 indicator	4 points	% of total section points
Content and Instructional Approach	5. Evidence-based Reasoning and Communicating	2 indicators	8 points	% of total section points
Educator Supports	6. Progress Monitoring	3 indicators	6 points	% of total section points
Educator Supports	7. Supports for All Learners	4 Indicators	8 points	% of total section points
Educator Supports	8. Implementation Supports	3 indicators	6 points	% of total section points
Educator Supports	9. Design Features	3 indicators	N/A	Narrative Only
Additional Information	10. Technology, Price, Professional Learning, and Additional Language Supports	N/A	N/A	Information Provided

Scoring Methodology

Quality evaluations are intended to support LEAs in making decisions that best meet their local context. To provide LEAs clear, transparent, and user-friendly information, instructional materials are scored points at the indicator level and then totaled for the section. A percentage score is calculated based on the points awarded for each section. Each score value is supported by evidence collected and the evidence is published in final reports. Sections within the rubric are scored based on the table below.

Science Grades K–8 Scoring

The following provides an overview of the scoring methodology proposed to support LEAs in their review, adoption, and purchasing decisions.

1 Texas Essential Knowledge and Skills and English Language Proficiency Standards-Alignment Review

Standards-alignment review team members review instructional materials to determine the extent to which the science Texas Essential Knowledge and Skills (TEKS) and English Language Proficiency Standards (ELPS) are covered and to identify factual errors.

To be eligible for adoption by the State Board of Education, instructional materials must meet at least 50% of the TEKS and 100% of the required ELPS in the components **intended for student use** and the components **intended for teacher use**, be free from a factual error, meet manufacturing specifications, be suitable for the intended course and grade level, and be reviewed by academic experts. The review results in four outputs related to the percentage of TEKS and ELPS present in the materials designed for teacher and student use as seen below: Student TEKS %, Teacher TEKS %, Student ELPS %, and Teacher ELPS %. **All materials must be reviewed for standards alignment.**

Category	Student TEKS %	Teacher TEKS %	Student ELPS %	Teacher ELPS %
Does Not Meet SBOE Requirement	<50%	<50%	<100%	<100%
Meets Minimum SBOE Requirement	50–79%	50–79%	100%	100%
TEA Recommended Percentages	80%+	80%+	100%	100%

2 Instructional Anchor

Materials are designed to anchor instruction in phenomena and engineering problems.

Science Indicator	Science Guidance	Scoring
2.1 Materials are designed to strategically and systematically integrate scientific and engineering practices, recurring themes and concepts, and grade-level content as outlined in the TEKS.	• Materials provide multiple opportunities for students to practice, develop, and demonstrate mastery of grade-level appropriate scientific and engineering practices as outlined in the TEKS. • Materials provide multiple opportunities to make connections between and within overarching concepts using the recurring themes. • Materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and grade level as outlined in the TEKS. • Materials include sufficient opportunities, as outlined in the TEKS, for students to ask questions and plan and conduct classroom, laboratory, and field investigations and to engage in problem-solving to make connections across disciplines and develop understanding of science concepts.	0/2/4
2.2 Materials anchor the learning in phenomena and problems as the key lever for driving learning and student mastery of disciplinary knowledge and skills.	• Materials embed phenomena and problems across lessons to support students to in constructing, building, and developing knowledge through authentic application and performance of scientific and engineering practices, recurring themes and concepts, and grade-level content as outlined in the TEKS. • Materials intentionally leverage students' prior knowledge and experiences related to phenomena and engineering problems. • Materials clearly outline for the teacher the scientific concepts and goals behind each phenomenon and engineering problem.	0/2/4

Total points possible: 8

3 Knowledge Coherence

Materials are designed to support instruction that builds knowledge systematically.

Science Indicator	Science Guidance	Scoring
3.1 Materials are designed to build knowledge systematically, coherently, and accurately.	• Materials are vertically aligned and designed for students to build and connect their knowledge and skills within and across units and grade levels. • Materials are intentionally sequenced to scaffold learning in a way that allows for increasingly deeper conceptual understanding. • Materials clearly and accurately present course-specific core concepts, recurring themes and concepts, and science and engineering practices. • Mastery requirements of the materials are within the boundaries of the main concepts of the course.	0/3/6
3.2 Materials provide educative components to support teachers' content and coherence knowledge	• Materials support teachers in understanding the horizontal and vertical alignment guiding the development of grade-level content, recurring themes and concepts, and scientific and engineering practices. • Materials contain explanations and examples of science concepts including common grade-level misconceptions to support teacher's subject knowledge and recognition of barriers to student conceptual development as outlined in the TEKS. • Materials explain the intent and purpose of the instructional design of the program.	0/3/6

Total points possible: 12

4 Productive Struggle

Materials are designed to support students in applying disciplinary practices to engage in critical thinking and scientific decision-making.

Science Indicator	Science Guidance	Scoring
4.1 Materials provide opportunities for students to engage in productive struggle through sensemaking that involves reading, writing, thinking, and acting as scientists and engineers.	• Materials consistently support students' meaningful sensemaking through reading, writing, thinking, and acting as scientists and engineers. • Materials provide multiple opportunities for students to engage with grade-level appropriate scientific texts to gather evidence and develop understanding of concepts. • Materials provide multiple opportunities for students to engage in various written and graphic modes of communication to support students in developing and displaying understanding of scientific concepts. • Materials support students to act as scientists and engineers who can learn from engaging in phenomena and engineering design processes, make sense of concepts, and productively struggle.	0/2/4

Total points possible: 4

5 Evidence-Based Reasoning and Communicating

Materials are designed to support students in developing, explaining, and refining their ideas based on evidence.

Science Indicator	Science Guidance	Scoring
5.1 Materials promote students' use of evidence to develop, communicate, and evaluate explanations and solutions.	• Materials prompt students to use evidence to support their hypotheses and claims. • Materials include embedded opportunities to develop and utilize scientific vocabulary in context. • Materials integrate argumentation and discourse throughout to support students' development of content knowledge and skills as appropriate for the concept and grade-level. • Materials provide opportunities for students to construct and present developmentally appropriate written and verbal arguments that justify explanations to phenomena and solutions to problems using evidence acquired from learning experiences.	0/2/4
5.2 Materials provide teacher guidance to support student reasoning and communication skills	• Materials provide teacher guidance on anticipating student responses, including correct, incorrect, and partially correct responses the anticipation of student responses and the use of questionings to deepen student thinking. • Materials include teacher guidance on how to scaffold and support students' development and use of scientific vocabulary in context. • Materials provide teacher guidance on preparing for student discourse and supporting students in using evidence to construct written and verbal claims • Materials support and guide teachers in facilitating the sharing of students' thinking and finding solutions.	0/2/4

Total points possible: 8

6 Progress Monitoring

Materials provide frequent, strategic opportunities to monitor, evaluate, and respond to student progress toward the development of appropriate grade-level content and skills.

Science Indicator	Science Guidance	Scoring
6.1 Materials include a variety of TEKS-aligned and developmentally appropriate assessment tools.	• Materials include a range of diagnostic, formative, and summative assessments that include formal and informal opportunities to assess student learning in a variety of formats. • Materials assess all student expectations and indicates which student expectations are assessed. • Materials include assessments that integrate scientific concepts and science and engineering practices with recurring themes and concepts. • Materials include assessments that require students to apply knowledge and skills to novel contexts. •	0/1/2
6.2 Materials include guidance that explains how to analyze and respond to data from assessment tools.	• Materials include information and/or resources that provide guidance for evaluating student responses. • Materials support teachers with guidance and direction to respond to individual students' needs, in all areas of science, based on measures of student progress appropriate for the developmental level. • Assessment tools yield relevant information for teachers to use when planning instruction, intervention, and extension. • Materials provide a variety of resources and teacher guidance on how to leverage different activities to respond to student data. •	0/1/2
6.3 Assessments are clear and easy to understand.	• Assessments contain items that are scientifically accurate, avoid bias, and are free from errors. • Assessment tools use clear pictures and graphics that are developmentally appropriate. • Materials provide guidance to ensure consistent and accurate administration of assessment tools. • Materials include guidance to offer accommodations for assessment tools that allow students to demonstrate mastery of knowledge and skills aligned to learning goals.	0/1/2

Total Points Possible: 6

7 Supports for All Learners

Materials provide guidance and support that help educators meet the diverse learning needs of all students.

Science Indicator	Science Guidance	Scoring
7.1 Materials include guidance, scaffolds, supports, and extensions that maximize student learning potential.	• Materials provide recommended targeted instruction and activities to scaffold learning for students who have not yet achieved grade-level mastery. • Materials provide enrichment activities for all levels of learners. • Materials provide scaffolds and guidance for just-in-time learning acceleration for all students.	0/1/2
7.2 Materials include a variety of research-based instructional methods that appeal to a variety of learning interests and needs.	• Materials include a variety of developmentally appropriate instructional approaches to engage students in the mastery of the content. • Materials consistently support flexible grouping (e.g., whole group, small group, one-on-one). • Materials consistently support multiple types of practices (e.g., guided, independent, collaborative) and provide guidance and structures to achieve effective implementation. • Materials represent a diversity of communities in the images and information about people and places.	0/1/2
7.3 Materials include listening, reading, writing, and speaking supports to help Emergent Bilinguals meet grade-level science content expectations.	• Materials include guidance for linguistic accommodations (communicated, sequenced, and scaffolded) commensurate with various levels of English language proficiency as defined by the ELPS. • Materials encourage strategic use of students' first language as a means to linguistic, affective, cognitive, and academic development in English.	0/1/2
7.4 Materials provide guidance on fostering connections between home and school.	• Materials provide information to be shared with students and caregivers about the design of the program. • Materials provide information to be shared with caregivers for how they can help reinforce student learning and development. • Materials contain information to guide teacher communications with caregivers.	0/1/2

Total Points Possible: 8

8 Implementation Supports

Materials provide support for implementation including clear and easy-to-follow guidance and support for teachers.

Science Indicator	Science Guidance	Scoring
8.1 Materials include year-long plans with practice and review opportunities that support instruction.	• Materials are accompanied by a TEKS-aligned scope and sequence outlining the order in which knowledge and skills are taught and built in the course materials. • Material provides teacher clarity in facilitating students in making connections between core concepts, scientific and engineering practices, and recurring themes and concepts. • Materials provide review and practice of knowledge and skills spiraled throughout the year to support mastery and retention.	0/1/2
8.2 Materials include classroom implementation support for teachers and administrators.	• Materials provide teacher guidance and recommendations for use of all materials, including text, embedded technology, enrichment activities, research-based instructional strategies, and scaffolds to support and enhance student learning. • Materials include standards correlations, including cross-content standards, that explains the standards within the context of the grade-level or course. • Materials include a comprehensive list of all equipment and supplies needed to support instructional activities. • Materials include guidance for safety practices including the grade-appropriate use of safety equipment during investigations.	0/1/2
8.3 Materials provide implementation guidance to meet variability in program design and scheduling.	• Materials support scheduling considerations and include guidance and recommendations on required time for lessons and activities. • Materials guide strategic implementation without disrupting the sequence of content that must be taught in a specific order following a developmental progression. • Materials designated for the course are flexible and can be completed in one school year.	0/1/2

Total Points Possible: 6

9 Design Features

Materials are intentionally designed and include the integration of digital technology to engage and support student learning.

Science Indicator	Science Guidance	Scoring
9.1 The visual design of materials is clear and easy to understand.	• Materials include an appropriate amount of white space and a design that supports and does not distract from student learning. • Materials embed age-appropriate pictures and graphics that support student learning and engagement without being visually distracting. • Materials are free of technical errors.	Not Scored
9.2 Materials are intentionally designed to engage and support student learning with the integration of digital technology	• Materials integrate digital technology and tools that support student learning and engagement without being distracting or chaotic. • Materials integrate digital technology in ways that support student engagement with the science and engineering practices, recurring themes and concepts, and grade-level content. • Materials integrate digital technology that provides opportunities for teachers and/or students to collaborate. • Materials integrate digital technology that is compatible with a variety of learning management systems.	Not Scored
9.3 Digital technology or online components are developmentally and grade-level appropriate and provide support for learning.	• Digital technology and online components are developmentally appropriate for the grade-level and align with the scope and approach to science knowledge and skills progression. • Materials provide teacher guidance for the use of embedded technology to support and enhance student learning. • Materials are available to parents and caregivers to support student engagement.	Not Scored

10 Additional Information: Technology, Price, Professional Learning, and Additional Language Supports

The following information will appear on the Texas Resource Review website, providing additional information about the set of materials being reviewed.

Science Indicator	Science Guidance	Scoring
10.1 Technology Specifications	• Technology Specifications form from the publisher is available.	Not Scored
10.2 Price Information	• Price Information form from the publisher is available.	Not Scored
10.3 Professional Learning	• Professional Learning form from the publisher is available.	Not Scored
10.4 Additional Language Supports	• Additional Language Supports form from the publisher is available.	Not Scored
10.5 Accessibility Requirements	• Accessibility Requirements form from the publisher is available.	Not Scored
10.6 Evidence-Based Information	• Information regarding the program's evidence base is available from the publisher.	Not Scored

Appendix

Science (K–12)

The Texas Resource Review Science (K–12) rubric was developed in collaboration with science content experts at TEA, independent science content experts, key stakeholders, and in alignment with other strategic TEA initiatives.