SCIENCE

# Instructional Materials Selection Guidance

KANSAS STATE DEPARTMENT OF EDUCATION

*Kansas leads the world in the success of each student.*

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# Introduction

Selecting instructional materials is one of the most critical decisions a district will make. Finding instructional materials that are aligned to the Kansas Curricular Standards and that meet the needs of your district can be overwhelming, particularly when examining a crowded marketplace. This guide aims to help teachers and administrators feel confident that their choices will positively impact students' academic experiences and achievement. **The Kansas Department of Education (KSDE) believes that both the materials and the process used to select those materials matter.**

KSDE believes that:

- The selection and implementation of high-quality instructional materials, supported by ongoing professional learning, is a transformative school improvement measure.
- Decisions regarding curriculum and instructional materials should be made at the local level, with support and resources provided by the KSDE. These decisions should prioritize the expertise of educators while incorporating the perspectives of students, families, and the community.
- Instructional materials should be aligned to the Kansas Curricular Standards, attend to the vision for Quality Instruction, and be based on research.

KSDE recommends the selection process occur across three phases:




The guidance below is designed to assist districts with prioritizing time while maximizing choice and flexibility. While the guidelines and actions are not exhaustive, they can be customized to address local needs as your district moves through the stages of selecting, adopting, and implementing high-quality instructional materials. The actions include links to tools and resources that offer additional support to ensure the materials selection process is thoughtfully planned, transparent, and well-documented.

**For content-specific guidance, see the KSDE Instructional Materials Selection Guidance for ELA, Math, Science, or Social Studies.**

# Phase 1: Plan

## 1.1 Determine your process.

Develop guidelines for the selection process and create a selection committee.

### Actions:

- Develop a theory of action for the selection process; be prepared to articulate the purpose[1] and goals for the new materials.
- Define the parameters of your selection process (e.g., budget, timing, decision-making, process, policy, technology needs, class schedule restraints, etc.).
    - Determine if there are district, state, or federal policies or requirements that need to be considered in addition to Kansas' Every Child Can Read Act[2] (e.g., RFP procedures, procurement requirements, etc.).
    - Think ahead to materials implementation to determine professional learning needs that might influence selection. For example, consider internal capacity vs. need for professional learning from a publisher, as well as potential costs of implementation support from publishers.
    - Determine if there is a desire to adopt curriculum materials that are aligned in pedagogy K-12 or if decisions will be made independently by grade-band and/or content.
- Create a timeline[3] from selection to launch.
- Assemble a selection committee, ensuring that the committee includes student, teacher, leader, and family/caregiver voice.
- Determine and communicate how you will make a final decision[4] (e.g., single-decision-maker, committee voting committee/stakeholders, or consensus[5]).

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[1] Instruction Partners. (2019). *Key Messages for Maintaining High Expectations for Students*. Curriculum Support Guide. https://curriculumsupport.instructionpartners.org/wp-content/uploads/2019/04/Key-Messages-for-Maintaining-High-Expectations-for-Students.pdf

[2] Every Child Can Read Act. https://www.ksrevisor.org/statutes/chapters/ch72/072_032_0062.html

[3] Instruction Partners. (2019). *Selection Timelines*. Curriculum Support Guide. https://curriculumsupport.instructionpartners.org/wp-content/uploads/2019/02/Selection-Timelines.pdf

[4] EdReports.org. (2020, April 1). *Making Your Decision: A Resource to Support Your Materials Adoption Process*. EdReports. https://edreports.org/resources/article/making-your-decision-a-resource-to-support-your-materials-adoption-process

[5] Cox, D. (2018, June 14). *5 Keys to Successful Consensus When Selecting New Curricula*. EdReports. https://www.edreports.org/resources/article/5-keys-to-successful-consensus-when-selecting-new-curricula

# 1.2 Develop your lens.

Establish criteria for new instructional materials, grounded in an instructional vision for the content area.

## Actions:

- Refer to your district-level instructional vision for science to guide your process. This vision describes what high-quality teaching and learning looks like in science, including alignment to the Kansas Curricular Standards for Science.
    - If your district has not developed an instructional vision for science, leverage the ***KSDE Vision for Quality Instruction in Science***.
- Determine whether materials must align to the district's current scope & sequence for science instruction or if there is flexibility. Consider:
    - ES (K-5): Refer to the ***KSDE elementary school science recommended scope and sequence*** for additional guidance.
    - MS (6-8): Do students take courses that integrate domains (life science, physical science, earth space science) each of 3 years or that are domain-specific each year.
        - Refer to the ***KSDE middle school science recommended scope and sequence*** for additional guidance.
        - Note: KSDE's recommendation is integrated courses across 3 years.
    - HS (9-12): Do students take courses that cover all three domains of the standards (as required for graduation)?
        - Will students take domain-specific courses or will there be integration in core courses? Refer to the ***KSDE high school science recommended scope and sequence*** for additional guidance.
        - For each course, determine if this course is considered a "core" science course or an "advanced" science class. "Core" science classes may also be differentiated into "general" and "honors" sections.
            - If the desired content of a science course is intended to advance beyond the standards *(ie: honors class, advanced science class*), determine if there is a desire to prioritize instructional materials that are aligned to the standards and NGSS framework but may require modification to incorporate concepts beyond the standards or instructional materials that are aligned to science concepts desired in the course but may require modification to support the vision for NGSS quality instruction.
        - Note: High school graduation requirements include three units of science, which should include physical, biological, and earth and space science concepts; at least one unit as a laboratory course; and one unit of advanced science, technology, engineering or advanced math.
            - KSDE recommends a course sequence that allows for every student to have access to all of the high school science standards and recommends integration of science domains in core science courses.
- Use a variety of data points (e.g. assessment data, classroom observation data, perception data, etc.) to analyze the current state of science instruction compared to the vision.

- Use your instructional vision and analysis of your district's starting point for key levers, including educator experience, support and collaboration, to determine if there are additional review criteria that should inform the selection of instructional materials.
    - Determine if learning gaps exist across student groups (students with disabilities, multilingual learners, students of color, students experiencing poverty, etc.) and decide if access to specific supports should be prioritized in new instructional materials.

## 1.3 Build skill.

Build the capacity of stakeholders and selection committee members so they have the expertise to engage in the selection process.

### Actions:

- Provide professional learning for the selection committee to create a shared understanding of the Kansas Curricular Standards for Science, the importance of high-quality instructional materials (HQIMs), content-specific characteristics of HQIMs (the "lens", or review criteria, determined in the previous step of this guide), and how HQIMs support the instructional vision.
- Consider how stakeholders *beyond* the selection committee will understand why new instructional materials are being selected, including the timeline from selection to launch.
    - Provide learning experiences that help stakeholders develop a shared understanding of the instructional shifts, the instructional vision, and evidence-based practices within the content area being selected.

# Phase 2: Study

## 2.1 Know and narrow your choices.

Identify a short list of instructional materials that will be deeply evaluated for alignment to the instructional vision.

### Actions:

- Review relevant state policy (if applicable) and this guidance prior to selection of new instructional materials.
- Learn about instructional materials available for the content area being selected.
    - For additional content-specific insight, contact the ***KSDE Program Manager*** to learn more about high-quality instructional materials for science.
    - Consider contacting similar sized districts to gather information about the instructional materials they are using.
        - Note: For science, this information may give you insight into the use of specific materials. But due to the lower rate of science materials adoption across the state (compared to ELA and math), keep in mind that this information may not provide clear direction.
- Establish a set of questions that the selection committee can use to narrow your district's initial list of materials to consider. As the first "filter", these questions should align with the parameters and instructional vision identified in Phase 1. Suggestions for science:
    - Standards Alignment: How do the materials engage students in all three dimensions of the standards? Is there alignment to the 3D performance expectations of the standards?
    - Student Engagement in Sensemaking: How do the materials support students with actively engaging in the sensemaking process to construct understanding?
    - Role of Phenomena: How effectively do the materials use phenomena to anchor learning and promote inquiry-based exploration?
    - Reducing Barriers to Access: Do the materials provide guidance on strong Tier 1 supports (i.e.: Universal Design for Learning) and/or differentiated supports for student needs?
    - Professional Learning Support: What professional learning opportunities are provided or recommended by the publisher to ensure successful implementation?
    - Cost of Materials: What are the costs associated with consumable and non-consumable materials, and how sustainable are they for our district?
- Apply your district lens via the "filter" questions to decide which instructional materials (between 2-4) you will study more deeply.
    - Leverage information from independent reviews (e.g., EdReports at https://edreports.org, NGSS Design Badge at https://www.nextgenscience.org/badgeunits, etc.) to compare materials' features, alignment, or key anecdotal insights.

- For additional guidance on leveraging EdReports and NGSS Design Badge, see the resource ***Using Third-Party Reviews in the Materials Selection Process for Science*** at the end of this document.
- For instructional materials that have not yet been reviewed through an independent process, use the ***KSDE Science Instructional Materials Evaluation Tool*** to analyze materials for alignment to the standards and instructional vision.
    - Note: Section 1 (*Three-Dimensional Learning, Coherence, and Scope*) of the evaluation tool carries much greater weight in decision-making than Section 2 (*Balanced Assessments, Usability, Teacher Supports*). *Any materials that do not meet or partially meet expectations of Section 1 criteria should not be considered.*
- Use the ***KSDE Science Standards Alignment Toolkits*** to further analyze materials for standards alignment.

# 2.2 Investigate the materials.

## Study the 2-4 sets of high-quality instructional materials selected.

### Actions:

- Establish a structure and process[6] that enables selection committee members to deeply study each set of materials.
    - Before your investigation of the materials, identify (1) what you want to learn about each set of materials, (2) which stakeholders should provide feedback, and (3) who will be engaged in the investigation.
- Determine your approach to investigating the materials. For example, will you investigate the materials using a book study, a field test or pilot[7], PLC or grade-level review, or through a publisher presentation? Or will you use some combination of the four?
    - Note: KSDE recommends using a combination of the approaches above. If a publisher presentation is included, it should be done *after* selection committee members have done their own independent investigation.
- Determine what kind of professional learning may be needed for the selection committee or field test/pilot teachers as they investigate the materials.
- If implementing a field test/pilot of the materials, determine what kind of consumable and/or non-consumable supplies (ie: lab supplies) may be needed for the field test/pilot teachers as they investigate the materials.
- Request samples of the materials and alignment documentation to the Kansas Curricular Standards from publishers, and set up presentations (if needed).

[6] EdReports.org. (2020, April 1). *4 Ways to Investigate Instructional Materials Under Consideration*. EdReports. https://www.edreports.org/resources/article/4-ways-to-investigate-instructional-materials-under-consideration
[7] EdReports.org. (2020, April 1). *Lessons from the Field: Best Practices for Piloting Curriculum*. EdReports. https://www.edreports.org/resources/article/lessons-from-the-field-best-practices-for-piloting-curriculum

    - Use publisher-provided standards alignment documentation alongside third-party reviews (where available) and KSDE non-negotiables to study each set of materials. See: ***Using Third-Party Reviews in the Materials Selection Process for Science***
    - Use time with publishers to have them answer questions from the selection committee that specifically address local priorities and context as well as any strengths and gaps identified by the selection committee.
        - Note: KSDE recommends asking publishers to share information about their materials related to the following topics: *Three-Dimensional Learning, Coherence, Scope, Balanced Assessments, Usability, and Teacher Supports*
- If the curriculum materials you are considering are available through multiple vendors (i.e.: adaptations of open education resources), investigate the similarities and differences of each vendor's product.
- Use the data gathered in this step to further narrow the list of prospective instructional materials, if possible.
    - Determine if there is a need for additional feedback from the field test/pilot teachers or follow-ups with the publishers.

# Phase 3: Act

## 3.1 Make a decision.

Make a final selection, develop a communications plan, and create a strategy for getting materials in educators' hands.

### Actions:

- Review the evidence collected throughout your investigation. In this review:
    - Compare the strengths and gaps of each option,
    - Analyze the feedback from stakeholders, including the field test or pilot teachers,
    - Assess the work needed to successfully implement each option and consider the implications of that on other initiatives and staff capacity, and
    - Consider the materials-based professional learning that may be necessary to implement the new instructional materials.
- Use your decision-making process to make a final selection.
- Communicate the decision, implications, and next steps to all stakeholders.
- Plan for the procurement and distribution of materials.

## 3.2 Plan for Implementation.

Develop an implementation strategy that prepares and supports teachers and leaders to implement the materials.

### Actions:

- Develop a materials-based professional learning strategy, starting with how teachers and leaders will "get to know" the materials through sustained professional learning that centers how teachers will learn to use the new instructional materials.
- Communicate the plans for short- and long- term professional learning that support implementation of the new instructional materials (e.g., teacher and leader professional learning, adjustments to the district's assessments or evaluation tools, classroom observation tools, or progress monitoring methods).
    - Consider how teachers new to the district and/or new to the profession will be trained on materials in subsequent years or even a few months into the first year of implementation.
- Use the ***KSDE Instructional Materials Implementation Guidance*** to develop and execute a thorough plan for sustained implementation.

# Using Third-Party Reviews

Since 2016, the review of instructional materials by third party organizations has played an important role in improving the alignment and quality of instructional materials to college and career-ready standards. As of 2023, EdReports (https://edreports.org/), an independent nonprofit organization, has reviewed approximately 97% of the known comprehensive K–12 ELA and mathematics materials market and a significant proportion of the K–8 science market.[8] With a focus on standards-alignment, the instructional shifts[9], and other important components like usability, the published reports provide information that empowers districts to identify high-quality instructional materials that prepare all students for college and career.

The review criteria for ELA developed by EdReports highlights indicators of quality, including:

- Designed for NGSS (Next Generation Science Standards),
- Coherence and Scope, and
- Usability.

In addition to EdReports, NextGenScience conducts its own third-party reviews and awards a digital badge called the "NGSS Design Badge" (https://www.nextgenscience.org/badgeunits) to science lessons and units designed for the NGSS that have earned the highest rating on the Educators Evaluating the Quality of Instructional Products Rubric for Science (https://www.nextgenscience.org/resources/equip-rubric-science) . The review criteria include:

- 3D Design,
- Instructional Supports, and
- Monitoring Student Progress.

The Kansas Curricular Standards for Science are the NGSS, emphasizing *science and engineering practices*, *disciplinary core ideas*, and *crosscutting concepts*. As such, the ***EdReports Reviews and Evidence Guides, as well as NGSS Design Badge Evaluation Reports provide a strong starting point for Kansas districts to use as a part of their standards-aligned instructional materials selection process***. Since both EdReports and NextGenScience are national organizations, there may be some aspects of individual state standards or requirements that are not reflected in their reviews. Even so, Kansas districts can confidently utilize information from EdReports and NextGenScience reviews as part of their selection process.

**Note that before diving deeply into third-party materials reviews, your district should have already defined and applied its instructional vision along with other contextual data to identify 2-4 materials to study in greater depth. (See the steps "Develop your lens" and "Know and narrow your choices" in the Instructional Materials Selection Guidance.)**

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[8] EdReports.org. (2024, October 29). *State of the Instructional Materials Market 2023*. EdReports. https://edreports.org/resources/article/state-of-the-instructional-materials-market-2023

[9] Student Achievement Partners. *The Shifts*. Achieve the Core. https://achievethecore.org/category/419/the-shifts

# Considerations

When seeking to understand the alignment of instructional materials to the Kansas Curricular Standards for Science, consider the following:

- ✔ **Use the publisher-provided alignment documentation, along with the third party reviews from EdReports and/or NGSS Design Badge, as information in your instructional materials selection process.**
    - EdReports offers an explanation of the review criteria for science[10] in grades K-5, 6-8, and 9-12. The criteria guide the EdReports review process, and the evidence associated with the criteria are included in the final reviews.
    - NextGenScience offers an explanation of the EQuIP rubric that is used to review lessons and units for the NGSS Design Badge. This detailed guide includes For each EQuIP criterion, this resource includes the criteria for review, a detailed description of each criterion, and an explanation of the features of materials that fully meet each criterion.
    - For example, documentation provided by the publisher OpenSciEd illustrates the alignment of their middle school curriculum OpenSciEd to the NGSS (Kansas' standards): OpenSciEd Middle School Scope & Sequence[11].

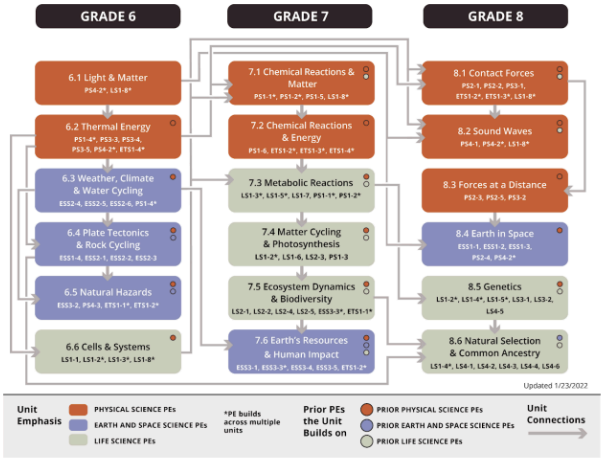
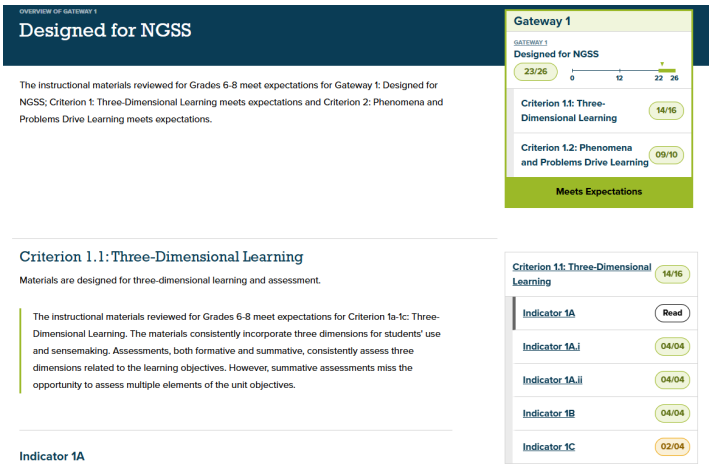



Figure 1: Scope and Sequence Map indicating PE clusters and DCI connections between units

    - In addition to the publisher-provided standards alignment, **EdReports** provides evidence of the quality of OpenSciEd Science for alignment to NGSS: OpenSciEd Science 2022 Report for 6-8[12].

[10] EdReports.org. *About Science Reports and Review Tools*. https://edreports.org/process/review-tools/science
[11] OpenSciEd.org. (2022 February). *OpenSciEd Middle School Scope & Sequence.* https://openscied.org/wp-content/uploads/2024/02/OpenSciEd-Middle-School-Scope-Sequence.pdf
[12] EdReports.org. *OpenSciEd (2022) Report for 6th to 8th.* https://edreports.org/reports/detail/openscied-2023/sixth-to-eighth




- In addition to the publisher-provided standards alignment, **NGSS Design Badge** provides evidence of the quality of each OpenSciEd unit for alignment to NGSS: [How Can Containers Keep Stuff From Warming Up or Cooling Down? EQuIP Rubric for Science Evaluation]()[13]

| Category I Criteria Ratings | | Category II Criteria Ratings | | Category III Criteria Ratings | |
|---|---|---|---|---|---|
| A. Explaining Phenomena/Designing Solutions | Extensive | A. Relevance and Authenticity | Extensive | A. Monitoring 3D Student Performances | Extensive |
| B. Three Dimensions | Adequate | B. Student Ideas | Extensive | B. Formative | Adequate |
| C. Integrating the Three Dimensions | Extensive | C. Building Progressions | Adequate | C. Scoring Guidance | Adequate |
| D. Unit Coherence | Adequate | D. Scientific Accuracy | Extensive | D. Unbiased Tasks/Items | Adequate |
| E. Multiple Science Domains | Adequate | E. Differentiated Instruction | Adequate | E. Coherence Assessment System | Extensive |
| F. Math and ELA | Adequate | F. Teacher Support for Unit Coherence | Adequate | F. Opportunity to Learn | Adequate |
| | | G. Scaffolded Differentiation Over Time | Adequate | | |

***Crosscutting Concepts (CCCs): Adequate***

The reviewers found adequate evidence that students have the opportunity to use CCCs in this unit as students engage in the practices. Although support is provided to develop student ability to engage with CCCs, the development is done at the 3-5 grade band element level. However, there are other opportunities for students to use additional CCCs throughout the unit at the appropriate 6-8 grade band element level.

✔ **Reviewing the alignment of instructional materials to Kansas Curricular Standards may not be enough.** A publisher may be able to provide documentation of the *alignment to the standards*, but EdReports and NGSS Design Badge highlight *differences in quality*.

- Note: When considering multiple sets of instructional resources that "Meet Expectations" by EdReports (i.e. rated "green") and the NGSS Design Badge, the detailed evidence guides can help your district determine which materials may be best for your students based on your district's vision for science instruction and Kansas Curricular Standards.
- For example, while the instructional materials in the scenario above may be aligned with the 6-8 science standards, third-party reviews reveal gaps that could be addressed to further improve the materials.

[13] OpenSciEd.org. (2019, July). *How Can Containers Keep Stuff From Warming Up or Cooling Down? EQuIP Rubric for Science Evaluation*. https://www.nextgenscience.org/sites/default/files/How%20Can%20Containers%20Keep%20Stuff%20From%20Warming%20Up%20or%20Cooling%20Down%20EQuIP%20Review_0.pdf

- The EdReports review points out that although the summative assessments for each unit are three-dimensional, they do not fully address all of the unit standards. A district adopting these materials would need to consider how to gather more complete evidence of students' three-dimensional learning (Indicator 1c: Materials are designed to elicit direct, observable evidence of three-dimensional learning).
- The NGSS Design Badge EQuIP Rubric reveals that while the unit is designed for students to use cross-cutting concepts, many students are not reaching this aspect of the standards at the appropriate grade level. A district adopting these materials would need to spend time planning to better incorporate the 6-8 grade-level elements for cross-cutting concepts (I.B. Three Dimensions: Building understanding of multiple grade-appropriate elements of science and engineering practices (SEPs), disciplinary core ideas (DCIs), and crosscutting concepts (CCCs) to support students' sense-making of phenomena or solution design).

✔ **Standards-aligned *materials* may not always translate to standards-aligned, grade level classroom *instruction*.** Standards alignment is a prerequisite for quality instruction; even so, additional supports are needed to ensure the materials are implemented as intended*, leading to* quality instruction.

- Use the Instructional Materials Implementation Guidance to clarify the roles and responsibilities of district leaders, school leaders, and teachers throughout the implementation process.
- In addition to observation tools and/or protocols provided by the publisher, leverage the content-specific observation tools made available by the KSDE.

# Alignment of Criteria: EdReports

The table below aligns the EdReports review criteria for science with components of ***Kansas' Vision for Quality Instruction in Science***. The number associated with each indicator aligns with one of three gateways that make up EdReports' evaluative process:

- Gateway 1: Designed for NGSS (Indicators 1a-1i)
- Gateway 2: Coherence and Scope (Indicators 2a-2g)
- Gateway 3: Usability (Indicators 3a-3z)
    - Note that Gateway 3: Usability is not included in the alignment table below because it focuses on teacher supports, assessments, student supports, and intentional design.

**The highlighted indicators represent non-negotiables identified by KSDE.** When comparing 2 or more materials that seem equally strong, prioritize a deep-dive into the non-negotiable indicators for further and more nuanced comparison.

| KSDE Vision Component | EdReports Indicators |
|---|---|
| **Sensemaking**<br>*Students* do the work of scientists, seeking to understand and explain how and why the world works the way it does. | • 1a.ii. Materials consistently support meaningful student sensemaking with the three dimensions.<br>• 1i. *(1f. for 9-12)* Materials embed phenomena or problems across multiple lessons for students to use and build knowledge of all three dimensions. |
| **Phenomena**<br>*Students* explore natural phenomena to note observations, ask questions, and make predictions about how the world works. | • 1d. Phenomena and/or problems are connected to grade-level Disciplinary Core Ideas.<br>  o *(9-12)* 1b. Phenomena and/or problems require student use of grade-band Disciplinary Core Ideas.<br>• 1e. *(1c. for 9-12)* Phenomena and/or problems are presented to students as directly as possible.<br>• 1f. *(1e. for 9-12)* Phenomena and/or problems drive individual lessons or activities using key elements of all three dimensions.<br>• *(K-5)* 1g. *(1a. for 9-12)* Materials are designed to include both phenomena and problems.<br>  o *(6-8)* 1g. Materials are designed to include appropriate proportions of phenomena vs. problems based on the grade-band performance expectations.<br>• 1i. *(1f. for 9-12)* Materials embed phenomena or problems across multiple lessons for students to use and build knowledge of all three dimensions. |

| KSDE Vision Component | EdReports Indicators |
|---|---|
| **Three-Dimensional Instruction**<br>*Students* engage with relevant science & engineering practices, disciplinary core ideas, and cross-cutting concepts needed to explain how or why a phenomenon occurs. | • 1a. *(1g. for grades 9-12)* Materials are designed to integrate the Science and Engineering Practices (SEP), Disciplinary Core Ideas (DCI), and Crosscutting Concepts (CCC) into student learning.<br>• 1b. *(1h. for 9-12)* Materials are designed to elicit direct, observable evidence for three-dimensional learning.<br>• 1c. *(1i. for 9-12)* Materials are designed to elicit direct, observable evidence of three-dimensional learning.<br>• 1f. *(1e. for 9-12)* Phenomena and/or problems drive individual lessons or activities using key elements of all three dimensions.<br>• 2a. *(2f. for 9-12)* Materials are designed for students to build and connect their knowledge and use of the three dimensions across the series/course.<br>• 2b. *(2d. for 9-12)* Materials present Disciplinary Core Ideas (DCI), Science and Engineering Practices (SEP), and Crosscutting Concepts (CCCs) in a way that is scientifically accurate.<br>• 2c. *(2e. for 9-12)* Materials do not inappropriately include scientific content and ideas outside of the grade-level/band Disciplinary Core Ideas.<br>• 2d. Materials incorporate all grade-level Disciplinary Core Ideas.<br>  o *(9-12)* 2a. Materials provide opportunities for students to fully learn and develop all claimed grade-band Disciplinary Core Ideas.<br>• 2e. Materials incorporate all grade-level/band Science and Engineering Practices.<br>  o *(9-12)* 2b. Materials provide opportunities for students to fully learn and develop all claimed grade-band Science and Engineering Practices.<br>• 2f. Materials incorporate all grade-band Crosscutting Concepts.<br>  o *(9-12)* 2c. Materials provide opportunities for students to fully learn and develop all claimed grade-band Crosscutting Concepts.<br>• (K-8) 2g. Materials incorporate NGSS Connections to Nature of Science and Engineering. |
| **Discourse & Collaboration**<br>*Students* share ideas, build on and critique one another's ideas, and revise their thinking as new evidence emerges or compelling ideas are shared related to the lesson's content, concepts or phenomenon. | • 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.<br>• 3p. Materials provide opportunities for teachers to use a variety of grouping strategies |

| KSDE Vision Component | EdReports Indicators |
|---|---|
| **Local & Cultural Relevance**<br>*Students* have opportunities to apply scientific knowledge, skills, & problem-solving to real-world examples, making connections to their lives outside of the classroom. Their cultural knowledge, languages, and ways of thinking are valued and incorporated into learning experiences wherever possible. | • 1h. *(1d. for 9-12)* Materials intentionally leverage students' prior knowledge and experiences related to phenomena or problems.<br>• 3r. Materials provide a balance of images or information about people, representing various demographic and physical characteristics.<br>• 3s. Materials provide guidance to encourage teachers to draw upon student home language to facilitate learning.<br>• 3t. Materials provide guidance to encourage teachers to draw upon student cultural and social backgrounds to facilitate learning. |

# Alignment of Criteria: NGSS Design Badge

The table below aligns the EQuIP Rubric for Science criteria with components of ***Kansas' Vision for Quality Instruction in Science***. This rubric is used to measure how well lessons and units are designed for the NGSS; top-rated lessons and units are awarded the NGSS Design Badge. The number associated with each criterion aligns with one of three categories that make up the EQuIP Rubric:

- Category I: NGSS 3D Design (Criteria 1A-1F)
- Category II: NGSS Instructional Supports (Criteria 2A-2G)
- Category III: Monitoring NGSS Student Progress (Criteria 3A-3F)

**The highlighted indicators represent non-negotiables identified by KSDE.** When comparing 2 or more materials that seem equally strong, prioritize a deep-dive into the non-negotiable indicators for further and more nuanced comparison.

| KSDE Vision Component | EQuIP Criteria |
|---|---|
| **Sensemaking**<br>*Students* do the work of scientists, seeking to understand and explain how and why the world works the way it does. | • 1A. Explaining Phenomena/Designing Solutions: Making sense of phenomena and/or designing solutions to a problem drive student learning.<br>• 1C. Integrating the Three Dimensions: Student sense-making of phenomena and/or designing of solutions requires student performances that integrate elements of the SEPs, CCCs, and DCIs.<br>• 1D. Unit Coherence: Lessons fit together to target a set of performance expectations.<br>• 2C. Building Progressions: Identifies and builds on students' prior learning in all three dimensions<br>• 2F. Teacher Support for Unit Coherence: Supports teachers in facilitating coherent student learning experiences over time<br>• 2G. Scaffolded differentiation over time: Provides supports to help students engage in the practices as needed and gradually adjusts supports over time so that students are increasingly responsible for making sense of phenomena and/or designing solutions to problems. |
| **Phenomena**<br>*Students* explore natural phenomena to note observations, ask questions, and make predictions about how the world works. | • 1A. Explaining Phenomena/Designing Solutions: Making sense of phenomena and/or designing solutions to a problem drive student learning.<br>• 1C. Integrating the Three Dimensions: Student sense-making of phenomena and/or designing of solutions requires student performances that integrate elements of the SEPs, CCCs, and DCIs. |

| KSDE Vision Component | EQuIP Criteria |
|---|---|
| **Three-Dimensional Instruction**<br>*Students* engage with relevant science & engineering practices, disciplinary core ideas, and cross-cutting concepts needed to explain how or why a phenomenon occurs. | • 1B. Three Dimensions: Builds understanding of multiple grade-appropriate elements of the science and engineering practices (SEPs), disciplinary core ideas (DCIs), and crosscutting concepts (CCCs) that are deliberately selected to aid student sense-making of phenomena and/or designing of solutions.<br>• 1C. Integrating the Three Dimensions: Student sense-making of phenomena and/or designing of solutions requires student performances that integrate elements of the SEPs, CCCs, and DCIs.<br>• 2C. Building Progressions: Identifies and builds on students' prior learning in all three dimensions<br>• 2D. Scientific Accuracy: Uses scientifically accurate and grade-appropriate scientific information, phenomena, and representations to support students' three-dimensional learning.<br>• 3A. Monitoring 3D student performances: Elicits direct, observable evidence of three-dimensional learning; students are using practices with core ideas and crosscutting concepts to make sense of phenomena and/or to design solutions.<br>• 3F. Opportunity to learn: Provides multiple opportunities for students to demonstrate performance of practices connected with their understanding of disciplinary core ideas and crosscutting concepts and receive feedback. |
| **Discourse & Collaboration**<br>*Students* share ideas, build on and critique one another's ideas, and revise their thinking as new evidence emerges or compelling ideas are shared related to the lesson's content, concepts or phenomenon. | • 2B. Student Ideas: Provides opportunities for students to express, clarify, justify, interpret, and represent their ideas and to respond to peer and teacher feedback orally and/or in written form as appropriate. |
| **Local & Cultural Relevance**<br>*Students* have opportunities to apply scientific knowledge, skills, & problem-solving to real-world examples, making connections to their lives outside of the classroom. Their cultural knowledge, languages, and ways of thinking are valued and incorporated into learning experiences wherever possible. | • 2A. Relevance and Authenticity: Engages students in authentic and meaningful scenarios that reflect the practice of science and engineering as experienced in the real world.<br>• 3D. Unbiased tasks/items: Assesses student proficiency using methods, vocabulary, representations, and examples that are accessible and unbiased for all students. |

# At a Glance

## Using Third-Party Reviews in the Materials Selection Process

- ☐ **Develop an intentional selection process**. For additional support with planning a selection process, see the Instructional Materials Selection Guidance for Science.
- ☐ **Request standards alignment documentation from publishers** of a short list of materials that will be deeply evaluated by the selection committee.
- ☐ **Use publisher-provided alignment documentation alongside EdReports/Design Badge Reviews and KSDE non-negotiables** to study each set of materials.
- ☐ **Set up time with publishers to ask questions** about any alignment gaps and request samples of materials, if needed.
- ☐ **Plan to implement selected materials** in a way that translates meaningfully into quality instruction. For additional support, see the Instructional Materials Implementation Guidance.

# Kansas State Board of Education

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## Vision

Kansas leads the world in the success of each student.

### SUCCESS DEFINED

A successful Kansas high school graduate has the

- Academic preparation,
- Cognitive preparation,
- Technical skills,
- Employability skills and
- Civic engagement

to be successful in postsecondary education, in the attainment of an industry recognized certification or in the workforce, without the need for remediation.

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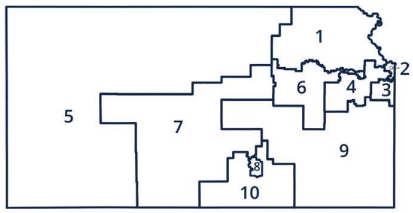


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Kansas divided into the ten State Board of Education districts.

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