CATEGORY 1: STANDARDS ALIGNMENT

WHY: "Educational excellence and equity for every student is Goal One of our district's Strategic Plan. Our academic program is grounded in standards-based curriculum, with strong, targeted instruction delivered by highly-qualified teachers to ensure that every student graduates ready for college, career, and life." – SPS Department of Curriculum, Assessment, and Instruction website

WHAT: "Our mission is to provide all SPS science classrooms with a common NGSS-aligned core scope and sequence that is engaging, authentic, culturally responsive, rigorous, and technology-based to be college and/or career ready. Our goal is that all our students will be scientifically literate. This is accomplished through a collaborative, interactive, rigorous science program responsive to the needs of diverse learners." – SPS Science Department Mission Statement

1. The instructional materials present the SEPs (Science and Engineering Practices) in a way that is: Current; Scientifically accurate; Grade-level appropriate
2. The instructional materials present the DCIs (Disciplinary Core Ideas) in a way that is: Current; Scientifically accurate; Grade-level appropriate
3. The instructional materials present the CCCs (Crosscutting Concepts) in a way that is: Current; Scientifically accurate; Grade-level appropriate
4. The instructional program provides phenomena-based science units at each grade level.
5. The instructional program engages students in the engineering design process by solving engineering problems at each grade level.
6. Units are organized as a storyline, anchored by a phenomenon or engineering problem that allows for students to build knowledge to explain the phenomenon or solve the engineering problem.
7. Phenomena and/or engineering problems are presented to students as directly (first hand) as possible.
8. Individual learning activities include at least two of the three dimensions: Science and Engineering Practices (SEPs), Disciplinary Core Ideas (DCIs), and Crosscutting Concepts (CCCs).
9. The instructional program provides opportunities for students to collect evidence using computer-based simulations, hands-on investigations, informational texts, and other media.
10. Instructional materials draw upon students' prior knowledge and experiences related to the targeted learning of SEPs, DCIs, and CCCs.
11. Instructional materials provide students with opportunities to consider the ethical implications of science where appropriate.
12. The instructional program lists grade-appropriate connection(s) to the Common Core State Standards.
13. The instructional program requires students to use and build their knowledge of each grade's (K-5) or grade-band's (6-8) Disciplinary Core Ideas within the following domains, within and across grade levels:
    a. Life Science
    b. Earth and Space Science
    c. Physical Science
    d. Engineering, Technology, and Application of Science

14. The instructional program requires students to use and build their knowledge of the Science and Engineering Practices, within and across grade levels:
    a. SEP 1: Asking Questions (science) and Defining Problems (engineering)
    b. SEP 2: Developing and Using Models
    c. SEP 3: Planning and Carrying Out Investigations
    d. SEP 4: Analyzing and Interpreting Data
    e. SEP 5: Using Mathematics and Computational Thinking
    f. SEP 6: Constructing Explanations (science) and Designing Solutions (engineering)
    g. SEP 7: Engaging in Argument from Evidence
    h. SEP 8: Obtaining, Evaluating, and Communicating Information
15. The instructional program requires students to use and build their knowledge of the Crosscutting Concepts, within and across grade levels:
    a. CCC 1: Patterns
    b. CCC 2: Cause and Effect
    c. CCC 3: Scale, Proportion, and Quantity
    d. CCC 4: Systems and System Models
    e. CCC 5: Energy and Matter
    f. CCC 6: Structure and Function
    g. CCC 7: Stability and Change

CATEGORY 2: ASSESSMENTS

WHY: "The Board of Directors of Seattle Public Schools ... believes that assessments are a critical component of our education system used to inform instruction through identification of student strengths, assessment of learning growth, and diagnosis of barriers, and areas of support." – SPS School Board Policy #2080

WHAT: Includes pre-, formative, summative, self-, and peer-assessment measures that assess three-dimensional learning that provides data used to inform instruction.

1. Assessments engage students in at least two of the three dimensions of teaching and learning: The Science and Engineering Practices (SEPs), Disciplinary Core Ideas (DCIs), and Crosscutting Concepts (CCCs).
2. Assessments are accessible to all learners regardless of gender identification, language, learning exceptionality, cultural, or socioeconomic status.
3. Assessments are designed to yield information teachers may use in planning and modifying instruction.
4. Assessment tools include multiple measures of student progress within a unit.
5. Pre-assessments for each unit are provided to elicit students' prior knowledge and preconceptions.
6. Formative assessments are embedded consistently within the unit of instruction and are designed to elicit understanding to provide evidence of students' progress toward mastering the three-dimensional learning.
7. Summative assessments, at the end of a chapter or a unit, require students to provide a complete scientific explanation for the unit phenomenon, supported by evidence.
8. Summative assessments involve a variety of modalities, including, but not limited to: hands-on or simulation-based performance tasks, open-ended constructed response problems, and scoring of portfolios of student work collected over the course of instruction.
9. Tools are provided for scoring assessment items (e.g., sample student responses, rubrics, scoring guidelines).
10. Guidance is provided for interpreting the assessments (e.g., determining what high and low scores mean for students) that allow for interpretation of levels of student understanding.
11. Instructional materials provide opportunities and guidance for oral and/or written self-assessment and teacher feedback allowing students to monitor their own learning.
12. Instructional materials include opportunities to use digital technology to assess three-dimensional learning.

CATEGORY 3: INCLUSIVE EDUCATIONAL PRACTICES

WHY: "The district shall provide every student with equitable access to a high-quality curriculum, support, facilities, and other educational resources." – SPS School Board Policy #0030

WHAT: Instructional materials support students with learning variabilities, including, but not limited to, standard English learners, English learners, long term English learners, students living in poverty, foster youth, girls and young women, advanced learners, students with disabilities, students experiencing trauma, students below grade level, and students of Native American, Alaskan, Pacific Islander, African American, and Latinx descent.

1. Instructional materials leverage students' knowledge and experiences by eliciting and revisiting ideas throughout the unit.
2. Instructional materials are designed to leverage diverse cultural and socioeconomic backgrounds of students, including honoring the ways they come to know science.
3. Instructional materials include options for how to connect instruction to students' home, neighborhood, community, and/or culture, with a lens on social justice and on sustainability as appropriate.
4. Instructional materials provide an intentional balance of a wide variety of activities within a unit (e.g., simulations, hands-on activities, readings, discourse, kinesthetic activities, etc.) to support students' engagement in content.
5. Instructional materials emphasize the importance of science education to all members of society in a way that is culturally and socially authentic.
6. Teacher resources supply differentiated paths for learners. In particular, resources provide instructional guidance to support students at various skill levels in science.
7. Students express their understanding of the phenomena using multiple modalities, including, but not limited to, discussing, writing, and drawing.
8. Instructional materials provide appropriate accommodations and modifications to support active participation in the learning of science and engineering by all students.
9. Instructional materials are made accessible to students by providing appropriate supports for different reading levels.
10. Instructional materials are available in multiple languages.
11. Instructional materials provide opportunities for students to explore science and engineering careers connected to their lives through relevance and authenticity.
12. Instructional materials integrate technology-based, value-added tools that address issues of equitable access and support the growth of digital literacy skills and engagement for all students.
13. Instructional materials approach the content from multiple cultural and socioeconomic perspectives.
14. Instructional materials include work and innovations in the fields of science and technology done by people from different global societies.
15. Instructional materials include how different global communities experience, and are impacted by, science and engineering.
16. Instructional materials include examples of science innovations that have exploited groups in history to prevent the perpetuation of present and future exploitation.

17. Instructional materials emphasize the importance of using science and engineering to benefit all.

CATEGORY 4: EVALUATION OF BIAS CONTENT

WHY: "As schools work to increase success for all students, it is important to recognize the impact of bias in classrooms, instructional materials, and teaching strategies. Evaluating for bias requires us to learn about others and to respect and appreciate the differences and similarities." – WA OSPI Equity & Civil Rights Task Force

WHAT: Criteria adapted from the Washington Models for the Evaluation of Bias Content in Instructional Materials, WA OSPI Equity & Civil Rights Task Force (Appendix A)

Instructions for Criteria 1-5: For categories represented, evaluate the level of evidence for each of the numbered components: Gender; Sexual Orientation; Ethnicity; Culture; Physical Disability; Physical Characteristics; Age; Family Structure; Socioeconomic Status; Geographic Setting

1. Reflect qualities such as collaboration, compassion, intelligence, imagination, and courage.
2. Represented as central characters in narratives and illustrations.
3. Shown in active decision-making and leadership roles.
4. Shown performing similar work in related fields.
5. Referred to by their names and roles, not their characteristics.
6. Materials include historical and current contributions to science and engineering by members of non-dominant cultures.
7. Groups are identified in gender-neutral language (example: 'firefighter' instead of 'fireman').
8. People of all genders are depicted in non-traditional as well as traditional roles in the family, at work, in leisure activities, and in attitude.
9. Persons with disabilities are shown working and playing as equals with those around them.
10. Where appropriate, instructional materials acknowledge when the dominant culture took credit for discoveries and work done by non-dominant cultures.

CATEGORY 5: INSTRUCTIONAL PLANNING AND SUPPORT

WHY: "[The District will] align instruction, mentoring, evaluation, and support to ensure each and every educator develops strong foundational teaching skills." – SPS Formula for Success

WHAT: "Educators must possess a repertoire of evidence-based instructional strategies in delivering the curriculum to develop talent, enhance learning, and provide students with the knowledge and skills to become independent, self-aware learners, and to give students the tools to contribute to a multicultural, diverse society. The curriculum, instructional strategies, and materials and resources must engage a variety of learners using culturally responsive practices." – The National Association for Gifted Children website

1. Teacher support materials provide storylines that show how units are intentionally sequenced.
2. The instructional program includes features that help teachers understand how the Science and Engineering Practices (SEPs), Disciplinary Core Ideas (DCIs), and Crosscutting Concepts (CCCs) are integrated throughout the materials.
3. Instructional materials contain teacher guidance on the lesson level that explains how the targeted SEPs, DCIs, and CCCs work together to support students in making sense of phenomena or designing solutions to problems.
4. The instructional program provides guidance to teachers on how to engage students in a variety of discourse strategies to support their three-dimensional learning.
5. Teachers are provided with a wide variety of engaging, student-centered learning activities that help students make sense of phenomena and in designing solutions to related problems.
6. The instructional program contains teacher guidance, with annotations and suggestions, for how to successfully implement their units and daily lesson plans.
7. Instructional materials contain explanations of the instructional approaches of the program and identification of the research-based strategies.
8. Teacher support materials provide background knowledge related to the scientific content in each lesson.
9. Where appropriate, teacher background knowledge materials include a global and local perspective.
10. Teacher support materials identify common student preconceptions and suggestions for how to provide feedback and engage students in meaning-making that addresses these preconceptions.
11. Teacher support materials provide guidance with opportunities for checking for understanding and adjusting lessons, if necessary, to ensure three-dimensional learning.
12. Instructional materials document how each lesson and unit align to English/Language Arts and Math Common Core State Standards.
13. Instructional materials include a comprehensive list of supplies needed, as well as a detailed list of preparation tasks, for each lesson.
14. Instructional materials embed clear science safety guidelines for teachers and students across all lessons that are consistent with science safety rules and regulations, when appropriate, lab safety sheets are provided, and digital safety concerns and guidelines are addressed.

15. Instructional materials designated for each grade level are appropriate for one school year, and teacher support materials contain suggested pacing for the school year.
16. Instructional materials contain strategies for informing students, parents, and caregivers about the science program and suggestions for how they can help support student progress and achievement.
17. Instructional materials encourage the meaningful use of technologies (such as video clips or computer simulations) to investigate phenomena that cannot be directly experienced in the classroom, as well as tools used to record, display, and analyze data.
18. Instructional materials provide guidance to teachers on how the use of embedded technology and how science instruction may be improved by the effective use of technology and multimedia literacy skills.
19. Instructional materials include or reference digital technology that provides opportunities for teachers and/or students to collaborate with each other (e.g., websites, discussion groups, webinars, etc.).

20a-e. Electronic learning resources support instruction by:

a. indicating which lessons require technology.
b. having a well-designed user interface.
c. providing technical support.
d. including suggestions for appropriate use.
e. including back up analog-based plans..

SUMMARY

1. Each criterion is scored on a scale of 0 to 4:

   0 = No Evidence; 1 = Minimal Evidence; 2 = Moderate Evidence; 3 = Strong Evidence; 4 = Superior Evidence.
2. Each category's criteria are added together, then divided by the maximum possible score to generate a percentage.
3. Each category's percentage is then converted into points by multiplying by 100.
4. Each category's points are then multiplied by a weighting value:

   Category 1: 0.22

   Category 2: 0.17

   Category 3: 0.20

   Category 4: 0.20

   Category 5: 0.21
5. The resulting scores are added together to generate the summary score for the program.
6. Reviewers record evidence for each criterion as they conduct the review. They leave comments at the end of each category, as well as provide a personal score to reflect whether they feel the total score reflects their personal assessment of the program.