(REVISED 2025) TTSD Best Practices in Science

In Tigard-Tualatin School District, we believe quality science education is characterized by…

An environment that...

- Fosters curiosity, collaboration, confidence and respect so students feel safe to share ideas, take risks, and learn from mistakes
- Connects learning to students' lived experiences and local environments to make science meaningful and relevant
- Strives to provide equitable access to resources, time, and support so that all students can thrive

Content that…

- Integrates priority standards aligning with the three dimensions of NGSS standards: Science & Engineering Practices (what students do), Crosscutting Concepts (how students think), and Disciplinary Core Ideas (what students know)
- Centers on the investigation of phenomena and ever-changing real-world situations/experiences that are adaptable to students' interests, identities, and/or environments
- Provides a vertical alignment throughout a student's K-12 science experience
- Bundles standards into storylines that build understanding over time
- Provides materials that support the process, inspires STEM careers (people in fields, currently and culturally relevant, greatest discoveries in science, real-world application), and vocabulary being taught (visuals, vocabulary cards, manipulatives)
- Is language rich with support for all language learners with access across the district to materials provided in different languages, both in core and supplemental materials
- Allow teacher flexibility (considerate of short class periods, easy setup, clear objectives, prepared materials, to bring in supplemental materials and assessments with differentiation)
- Recognizing multiple historical ways of understanding science
- Includes and values diverse cultural and community perspectives and contributions with a social justice lens
- Leverages technology and data tools to enhance inquiry, analysis and/or modeling and provide teachers with a way of reteaching material

Instructional practices that…

- Engage all students in the Science & Engineering Practices: Asking questions and

defining problems, developing and using models, planning and carrying out investigations, analyzing and interpreting data, using mathematics and computational thinking, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating and communicating information

- Foster collaborative discourse and student-centered inquiry, with hands-on, phenomena-based investigations
- Connect lessons back to the relevant Crosscutting Concepts, encouraging students to go beyond rote memorization - (And post secondary ready)
- Encourage productive struggle, while providing clear scaffolds and supports as needed
- Use formative checks for understanding as instructional tools, guiding responsive teaching and supporting students in identifying next steps in their learning.
- Incorporates Disciplinary Core Ideas (DCIs) by allowing point of entry for all students and builds background knowledge based on student needs to incorporate points of entry for all students.
- Incorporates meaningful extensions
- Clear vertical alignment with unit planning that incorporates ALL components of lessons in a timely, realistic way

Assessment practices that...

- Aligned with three-dimensional learning, established priority standards (and science and engineering practices) for the course, to measure what students know, can do, and understand.
- Make thinking visible by using (different assessment forms) (models, explanations, and evidence-based reasoning, etc.) to show how students (demonstrate) understanding and performance of priority standards.
- Empower student voice and agency through self-assessment, peer feedback, opportunities to reflect on learning processes, and to retake or reattempt (change to reperform?) priority standards.
- Implement Tigard-Tualatin's Standards-Based Teaching, Assessment & Reporting System (STARS), once it has been fully implemented.
- Implement a range of grade-appropriate assessments that authentically capture students' science reasoning, sense-making, and conceptual understanding across multiple modalities