The California Mathematics Framework:
Technology Integration in Math Curriculum Adoption

Introduction

Governance teams play a key role in the adoption of instructional materials. There are many factors to consider when evaluating whether the materials will meet a local educational agency's (LEA) needs. One element that has become increasingly relevant is the integration of technology into instruction, including emerging tools that use artificial intelligence (AI).

The guiding questions in this document are designed to help board members make informed, strategic decisions about instructional technology components during the review of math curricula for adoption. Throughout this resource, the sections titled "AI insights and oversight" highlight specific governance considerations focused on the responsible, effective, and transparent use of AI in educational technology. These questions are especially critical as AI tools become increasingly embedded in math curricula and instructional practices.

Given the role of governance teams, these questions are primarily based on Chapter 11: Technology and Distance Learning of the 2023 California Mathematics Framework and supported by Chapters 12: Assessment and Chapter 10: Professional Learning.

How to Use This Resource

These questions empower boards to thoughtfully oversee technology-enhanced curriculum adoptions, ensuring instructional quality, fairness, transparency, and accountability for all students. Use these guiding questions strategically during key governance activities, such as:

▸ *Curriculum adoption discussions*
   Clarify the role and effectiveness of technology and AI components in proposed materials.

▸ *Budget planning meetings*
   Ensure technology-related costs are transparent, sustainable, and aligned with district priorities.

▸ *Policy reviews and updates*
   Strengthen policies to protect student data privacy, ensure equitable access, and support ethical technology use.

▸ *Professional development planning*
   Advocate for appropriate teacher training and ongoing support for effective technology implementation.

▸ *Board workshops or retreats*
   Foster meaningful dialogue among stakeholders about responsible, student-centered technology integration and long-term planning.

The questions have been organized below by theme and include both general technology considerations and those associated with AI. They offer a comprehensive range of considerations for governance teams to consider; items in bold bold print indicate priority items.

Strategic Purpose and Alignment

General technology considerations

▸ **How specifically does this technology enhance students' mathematical reasoning, engagement, and problem-solving skills as outlined in the Math Framework?**

▸ **Is there clear evidence or research supporting this technology component as a meaningful addition rather than merely a digital substitute for paper-based activities?**

▸ How does this technology ensure a balanced approach (hands-on and digital) that best supports learning?

AI insights and oversight

▸ **Does the AI component clearly support deeper conceptual understanding, or is it primarily used for skill drills?**

▸ Can teachers clearly understand how the AI personalizes student learning experiences? Is the system's decision-making easy to explain?

▸ What are the potential unintended consequences of overreliance on AI in the curriculum?

Licensing and Cost Structures

General technology considerations

▸ **What type of license is offered (districtwide, schoolwide, or per-student), and how might this choice affect the LEA's future budget or plans to expand?**

▸ Are there any additional fees or recurring costs associated with upgrades, support, or new features for any technology components? What support will be provided to the LEA for any additional expenses related to necessary updates?

▸ Is there a maximum limit to the number of concurrent student users or classes, which could create usage inequities or logistical barriers?

AI insights and oversight

▸ **Does the licensing include AI-specific updates or improvements, or will future AI enhancements require additional fees or separate licensing?**

Student Data Privacy and Security

General technology considerations

- **How have staff affirmed that the technology is fully compliant with the Family Educational Rights and Privacy Act (FERPA), the Children's Online Privacy Protection Act (COPPA), and California-specific data privacy regulations?**

- **Can the vendor clearly explain what student data is collected, how it is protected, and who can access it?**

- Does the vendor regularly conduct independent data security or privacy audits, and will they share these results with contracted LEAs?

AI insights and oversight

- **How does the AI collect, use, or analyze student data? Is there transparency and clarity around how student data feeds AI decisions?**

- What are the vendor's policies on data retention and deletion, and how can the LEA ensure that student data is purged securely when no longer needed?

- Are there clear safeguards against algorithmic bias that might affect recommendations or decisions made by the AI?

Teacher Training and Ongoing Professional Support

General technology considerations

- **What professional development plans are provided to ensure teachers use these technology tools effectively, ethically, and in alignment with instructional best practices?**

- **How are teacher leaders or coaches specifically prepared to support colleagues in effectively using this technology?**

- Does the LEA plan incorporate professional learning for classified staff who may also be asked to use this technology?

- Is ongoing teacher training or coaching provided, and how does the vendor use teacher feedback to improve the technology?

AI insights and oversight

- **What specific training or resources are provided to help teachers understand and effectively use the AI features of this tool?**

- Will professional learning from the curriculum vendor include modules on prompting strategies for AI, ethical AI use guidelines for students, and understanding the limits of AI?

- How will the LEA approach ongoing support for educators as AI technology evolves?

- Are teachers taught to interpret AI-driven data insights to inform instructional decisions and avoid unintended bias?

Accessibility and Digital Equity

General technology considerations

▶ **What plans are in place to ensure all students have fair access to devices, internet connectivity, and multilingual supports for using this technology?**

▶ Does this technology meet accessibility standards (e.g., WCAG: Web Content Accessibility Guidelines) to effectively support students with disabilities and English learners?

▶ Does the vendor provide clear policies or resources that ensure all students have fair and consistent access to the technology?

AI insights and oversight

▶ **Does the AI effectively adapt to meet the individual needs of all students, including students with disabilities and multilingual learners?**

▶ What steps does the vendor take to ensure the AI system supports positive learning outcomes for all students and does not unintentionally widen existing achievement gaps?

Family and Community Engagement

General technology considerations

▶ **How will the district ensure that all students and families are supported in effectively using the technology within the math curriculum, including those with limited technological literacy?**

▶ **How clearly does the platform explain to families their children's math progress and how student data is protected?**

▶ Are there multilingual family communication plans or training resources that clearly explain the technology's role in math instruction and student progress?

▶ Does the vendor offer support or engagement activities to help families use this technology effectively?

AI insights and oversight

▶ **How will the LEA solicit and respond to feedback from families regarding their comfort level with AI, their concerns about data privacy, and their perceptions of AI's impact on their students' learning?**

▶ **How will the LEA address community concerns about AI's ethical implications, such as over-reliance, the potential for cheating, or social impacts?**

▶ How are families informed about AI-driven recommendations or decisions affecting their child's learning?

▶ Are there transparent resources to help families understand the role and limits of AI in their child's mathematics learning journey?

Assessment and CAASPP Readiness

General technology considerations

▸ **How are teachers supported in effectively using digital assessments to provide meaningful and ongoing feedback to students?**

▸ How does the technology specifically prepare students for California's computer-adaptive assessments such as the California Assessment of Student Performance and Progress (CAASPP)?

▸ Does the technology include formative assessment tools aligned with CAASPP's focus on problem-solving, reasoning, and modeling?

AI insights and oversight

▸ **Does the technology offer features that allow for personalized learning based on student performance?**

▸ **How will the district ensure that human educators critically evaluate AI-generated feedback or assessment reports and that they are not the primary determinant for student progression, grading, or retention?**

▸ Does the AI effectively model and prepare students for the computer-adaptive format of CAASPP assessments?

▸ Do AI-generated assessments clearly help teachers adjust their instruction to better prepare students for CAASPP testing?

Monitoring, Feedback, and Accountability

General technology considerations

▸ **What specific metrics and data points will the LEA use to regularly monitor the implementation and effectiveness of the technology in math classrooms?**

▸ What tools or features are included to enable regular monitoring of student engagement and learning outcomes using this technology?

▸ How are data from these technology components shared with teachers, families, and district leadership to support continuous improvement?

▸ What specific accountability measures does the vendor offer to ensure the ongoing effectiveness and responsible use of their technology?

AI insights and oversight

▸ Does the vendor provide evidence-based monitoring of the long-term impacts of the AI components on student learning?

▸ Does the vendor regularly check their AI algorithms for fairness, accuracy, and responsible use of student data, and share those results with LEAs?

Additional Resources

For additional governance team resources about instructional materials adoptions, please visit CSBA's webpage, Adopting Instructional Materials. Further information about artificial intelligence can be found on CSBA's webpage, AI Taskforce: Education in the Age of Artificial Intelligence.