

**Pillar 1, PreK–5:
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PreK–5 Innovative use of Technology



Evidence

Elevated ideas reflect the developmental, social, emotional needs for PreK-5.

- Young people like to move! Embodied learning advances SCT concepts ground learning in body movement, observation of physical to access concepts helps
- Balance playfulness and effective learning
- Families are the primary instigators of children’s STEM, making connections with what students are doing at home and at school is important
- Build trust and safe spaces for students to share about their lives

Engaging families and teachers as co-creators in culturally relevant contexts can help build a sense of ownership and help increase children’s’ engagement and their social and emotional investment in STEM.

- Families and teachers working and learning together.
- Making tools more accessible and inclusive to different populations
- Seeing STEM professionals from their community.
- Developing tools in culturally relevant contexts and providing experiences for families less familiar with technology experiences
- Use “nudging” to build upon students’ competencies and strengths, consider “wrap around” for the technologies

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Challenges

- **Technological infrastructure in schools**
 - Wifi strength, old equipment, compatibility issues, lack of tech support in schools.
 - We need to assure that we design our tech to integrate schools' infrastructures.
 - This has implications for data sharing, e.g., safety concerns with tech (important to be flexible!)
- Technologies are rapidly changing, and schools aren't using the tech: **What are some change strategies?**
- Family recruitment and engagement: **How do you get families involved?**
- **Interest:** How do we encourage STEM learning among those who may not be interested? E.g., Storylines are important
- **Accessibility** challenges, especially informal and rural learning
- **Language barriers** for students → Community partners are a solution!
- **How to scale?** E.g., PD scope, technology (physical) prototype production

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Research

- **Accessibility and Identity**
 - How do you create culturally relevant curriculum that engages many different identities?
 - In what ways do the types of technological experiences impact identity development? (e.g., recognition, competence beliefs)
 - How well do students connect with STEM career exploration?
- Incorporate questions related to **families** and their engagement in environments
- How does what we do translate to careers late on in life?
- What are the **critical elements of technological innovation** that are flexible and accessible, and how much customization can be built in?
- How do we create dynamic classrooms to meet societal needs in a **rigid education system**? (risk-taking, flexibility can help).
 - The barriers of K-12 formal ed requirements/policies/restrictions are so massive that projects often move to the non-formal space.
- How do we get **TRUE buy-in** from school leadership?
- **How do we help educators hold complexity and make progress?**
 - What technology tools may help?
 - What if they record their teaching and provide feedback?