TEDNA · PARTNERS MEETING WEBINAR

AI in Action:

Applied Learning with SmartLab

Building STEM identity for Native learners — the new literacy of every industry.

Learning is different here.

ah-HA!

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WELCOME

Thank you for being here.

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Today's story is in three parts.

The WHY

The WHAT

The HOW

Part 1

The WHY: STEM Identity

Why STEM identity matters across every industry — including the industries Native communities lead in.

Part 2

The WHAT: Design Challenges

What SmartLab does build STEM Identity through AI Design Challenges

Part 3

The HOW: SmartLab Approach

The integrated ecosystem that supports the learner's growth.

PART 1

The WHY: STEM identity is the new literacy.

Why are we seeing this shift? Why does it matter?

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THE SHIFT

A new set of basics.

THE OLD BASICS

Reading

Writing

Arithmetic

THE NEW BASICS

- **Critical thinking with data**
- **Designing & iterating to solve problems**
- **Collaborating across disciplines**
- **Working alongside AI — and questioning it**

These are the literacies of every modern industry — agriculture, healthcare, energy, the trades, transportation.

THE NUMBERS

3x

The number of jobs that require STEM skills is roughly 3x larger than the number of jobs labeled as "STEM"[1]

86%

86% of employers expect AI and big data to transform their business by 2030[2]

39%

39% of workers' existing skills will be transformed or outdated by 2030[2]

1: National Science Foundation, National Center for Science and Engineering Statistics, Science & Engineering Indicators (NSB-2021-2).
2: World Economic Forum, Future of Jobs Report 2025 (surveyed 1,000+ employers representing 14M+ workers across 22 industry clusters and 55 economies).
3: World Economic Forum, 2022.

INDUSTRY BREADTH

STEM runs every industry — not just "STEM" Industries

72% of people with a STEM degree work outside traditional STEM jobs — because STEM skills are valued everywhere. The skills travel.

Agriculture

Precision farming, soil sensors, yield models

Transportation

Logistics, autonomous systems, route optimization

Healthcare

Diagnostics, telehealth, electronic records

Skilled Trades

Wind, solar, smart-building, advanced manufacturing

Business & Government

Data-driven decisions, GIS, public policy modeling

Tribal Enterprise

Natural resources, energy sovereignty, community apps

THE WHY

STEM identity isn't a test score. It's a self-belief.

Knowing facts isn't the same as believing you belong in the work. STEM identity is the mindset that says:

> ***I belong here.***
>
> *STEM isn't for someone else. It's for me, my family, my community.*

> ***I can do this.***
>
> *I can master rigorous challenges — and persist when they're hard.*

> ***I add value.***
>
> *My perspective makes the solution better. My voice matters in the room.*

> ***I am future ready.***
>
> *I have the literacies every modern industry needs.*

Built one ah-HA! moment at a time — through active, student-centered learning.

WHY THIS MATTERS HERE

Native learners are underrepresented in the industries shaping their future.

Across U.S. STEM occupations, Hispanic/Latino workers make up 8% and Black workers 11% — well below their share of the workforce. American Indian & Alaska Native representation is smaller still. (NSF NCSES)

The gap isn't capability.

Native learners are as capable as any. The gap is access, exposure, and a learning experience that connects STEM to community.

Identity comes before achievement.

Learners who see themselves in STEM persist. The work is to build that self-belief — early, repeatedly, in their context.

Native communities already lead in STEM-heavy industries.

Agriculture, energy, natural resources, land management, healthcare — the industries that need STEM are central to tribal economies.

PART 2

The WHAT: Teaching AI and Tech Skills to Build STEM Identity

What are we doing about this? What strategies achieve this?

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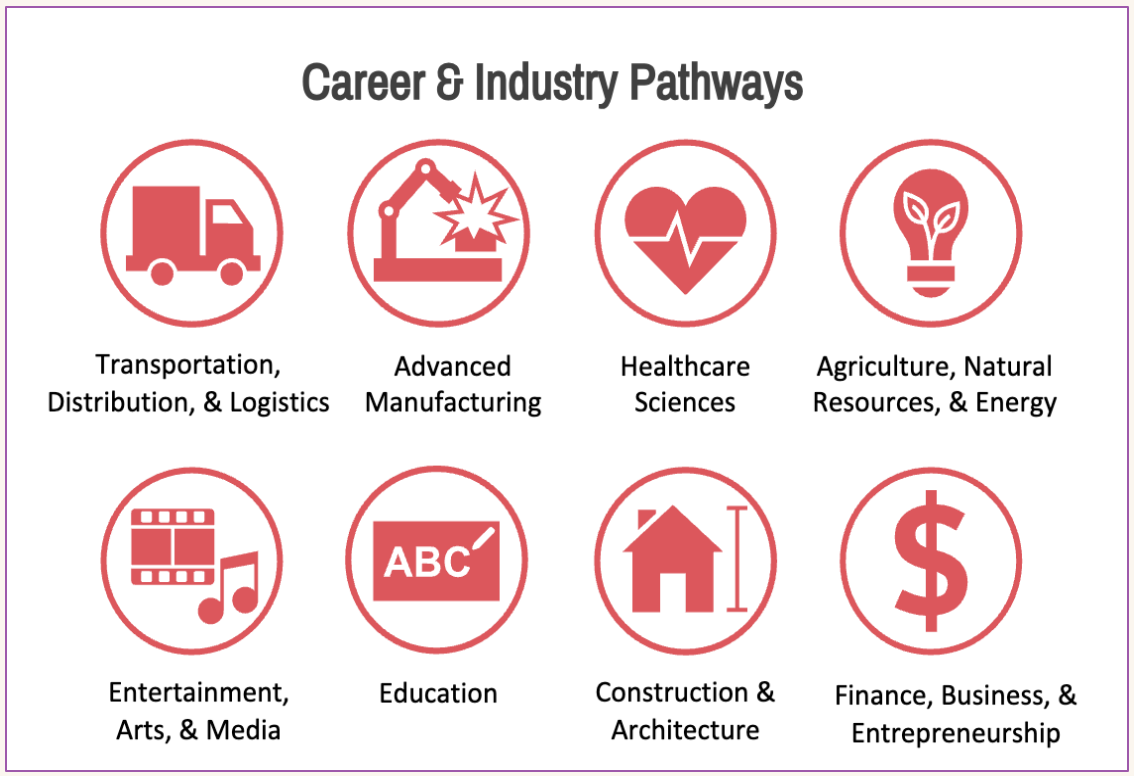
THE WHAT

Industry-embedded Challenges



Unit Challenge

How can we design a robot so that we can improve a manufacturing process?

Each unit presents a challenge that is grounded in one industry that leverages AI or other STEM applications to produce a unique solution.

Unit Snapshot: Harvest Hauler

Program: Explorer | **Grade**: Kindergarten

Challenge: How can we program a self-driving delivery truck so that we can help a farmer get food to our community?

Career & Industry Pathway: Agriculture, Natural Resources, and Energy

Integrated STEM Application: Artificial Intelligence

Tech Corner: indi

Unit Summary

Learners explore maps, algorithmic thinking, and farming. They design a food truck and plan its route to create an automated delivery system to help local farmers distribute food to their community.

Unit Snapshot: Harvest Hauler

indi robot on a sequence of green, yellow, pink, blue, pink, pink, blue, purple coding tiles to get indi from a poultry farm to a wheat farm, dairy farm, and then to a school.

Next to the tiles are cubes made of magnetic tiles to represent the farms and school.

Unit Snapshot: Hospital Helper

Program: Explorer | **Grade**: First

Challenge: How can we program a robot to do simple, everyday tasks in a hospital so that we can make the jobs of hospital staff easier?

Industry & Career Pathway: Health Sciences

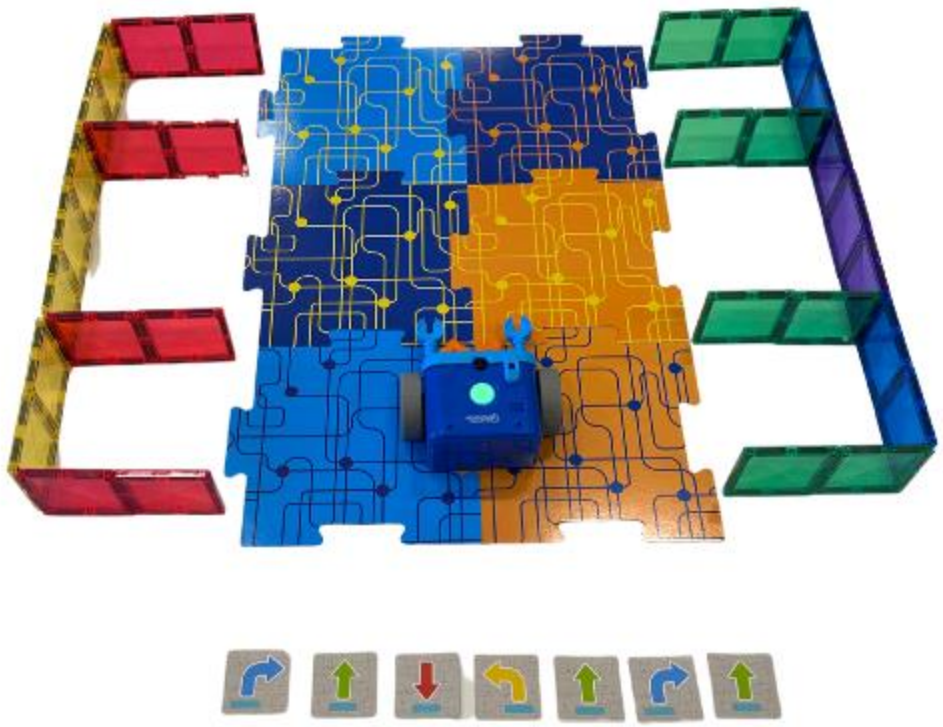
Integrated STEM Application: Applied AI

Tech Corner: Botley 2

Unit Summary

Learners take a virtual tour of a hospital to learn about the different parts – from the cafeteria to the operating rooms. They then use Botley to design a robot that assists the hospital staff with something of their choice, such as deliver meals to patients or clean the floor.

Unit Snapshot: Hospital Helper



The Hospital Helper delivers supplies to different areas of the hospital.

The algorithm shown with the coding cards programs the Botley robot to deliver supplies to the first room on the right and then the second.

Unit Snapshot: Autonomous Avenues

Program: Explorer | **Grade**: Third

Challenge: How can we program autonomous vehicles so that they can navigate our community safely?

Industry & Career Pathway: Transportation, Distribution, and Logistics

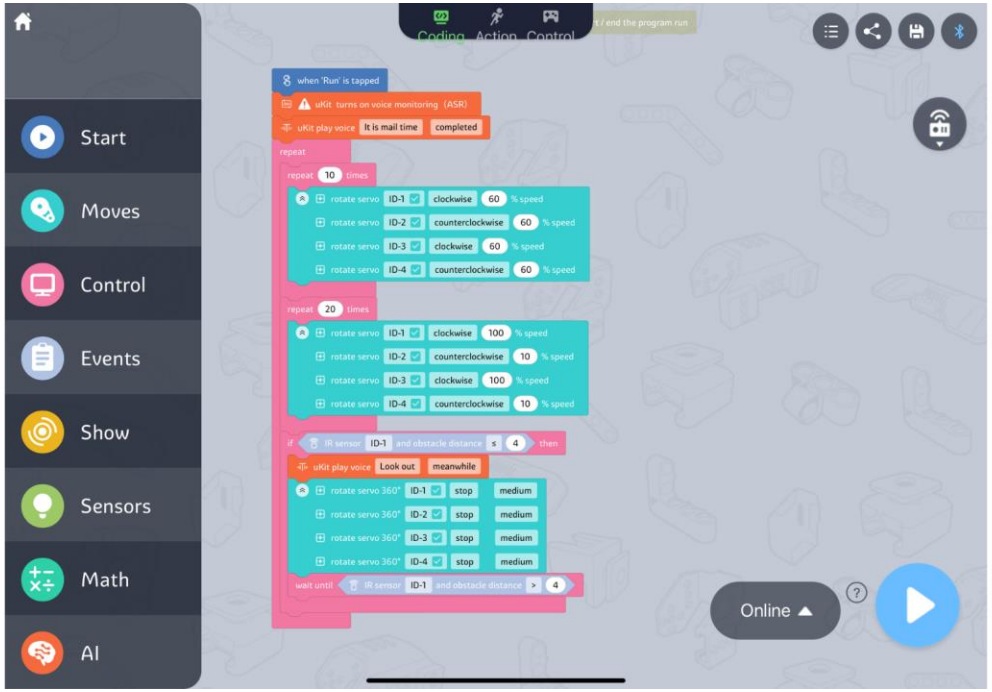
Integrated STEM Application: Artificial Intelligence

Tech Corner: uKit AI Intermediate

Unit Summary

Learners are tasked with programming vehicles to safely navigate a model community filled with roads, intersections, and pedestrian crossings. Learners engage in iterative testing and debugging to perfect their systems. As they refine their programs, learners explore the cutting-edge intersection of robotics, control technology, and AI, ensuring their vehicles move with precision and safety.

Unit Snapshot: Autonomous Avenues



Unit Snapshot: Chatbot Cooldown

Program: Explorer | **Grade**: Fifth

Challenge: How can we design a chatbot so that it can assist learners in regulating their emotions?

Industry & Career Pathway: Education and Training

Integrated STEM Application: Artificial Intelligence

Tech Corner: Scratch

Unit Summary

Learners design a chatbot that assist other students in the classroom. Through collaborative brainstorming and iterative design, they create a chatbot that interacts with users, offering personalized support and promoting a healthier emotional environment. This isn't just about tech skills—it's about fostering empathy and emotional intelligence. Get ready to witness a project that transforms not only the classroom but the hearts and minds of those within it.

Unit Snapshot: Chatbot Cooldown

https://scratch.mit.edu/projects/1095289608

Part 3

The HOW: The SmartLab Approach

How does this work in a classroom? How is it sustainable?

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HOW WE BUILD IT

Five components. One ecosystem.

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An integrated ecosystem that sparks ah-HA! moments and builds STEM identity for learners

HOW WE BUILD IT

Integrated Ecosystem

The SmartLab Approach starts with an integrated ecosystem

ah-HA! Moments

A sudden realization that occurs when learners connect ideas in new, meaningful ways—often sparked by curiosity, hands-on engagement, and problem solving.

Building STEM Identity

A strong STEM identity is a learner's self-belief that I belong, I can master rigorous challenges, and my ideas make an impact.

This mindset takes shape through active, student-centered learning cycles—each ah-HA! moment steadily converting raw curiosity into resilient, purposeful problem solving.

SmartLab learners know:

I belong here.
I can do this.
I add value.
I'm future-ready.

THANK YOU

When Native learners believe

I belong here.
I can do this.
I am future ready.

they lead in the industries that shape the world.

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Questions?

Let's Chat!

If anything you heard today feels like a fit for your learners, connect with us!

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