I-WIN
Illinois Work-Based Learning Innovation Network

Team-Based Challenge Template

PROJECT OVERVIEW	
Team-Based Challenge Title	STEM Challenge
Source	Illinois Science & Technology Institute (ISTI)
Industry Partners	2021 Partners: AbbVie Foundation, Arity, Baxter International, Inc., Caterpillar (Chicago, Decatur, and Peoria), CME Group, Homefield Energy, Horizon Therapeutics, John Deere, Lenovo Foundation, Microsoft, Northrop Grumman. 2022 partners pending. This program brings in new industries and partners each year.
Endorsement Area	Health Science & Technology; Information Technology
Problem to Investigate/Scope	The STEM Challenge program partners Illinois high schools with some of the state's most innovative companies over 4-6 months to explore, create, and build innovative solutions to authentic industry problems. We work with companies to develop customized, interdisciplinary challenges that reflect current priorities or pressing industry needs. Students apply classroom learning to investigate, develop, and refine solutions (new products, prototypes, apps designs, etc) that they ultimately present back to the company.
Project Outcomes	ISTI's STEM Challenge Program is designed to better prepare the next generation of innovators and to build a more inclusive, diverse STEM talent pipeline. Strategic programmatic elements ensure that high school students across Illinois are qualified for and knowledgeable about STEM jobs. This goes beyond traditional "STEM skills", and better prepares the workforce to solve complex problems, and to collaborate effectively. This program aims to deliver outcomes based on key leading indicators for future success and defining characteristics in STEM, such as dosage and confidence. We've mapped these outcome areas to measurable and quantifiable data that will demonstrate progress in the following areas: build student problem solving skills, increase engagement with STEM mentors, improve student confidence in their STEM skills, build student teamwork, collaboration and communication skills, build student interest and awareness of STEM careers and pathways, and improve teacher practice and use of new strategies or techniques.

PROJECT OUTLINE			
Stage:	Topics/Events:	Timeline:	Deliverables:
Preparation	Teacher Professional Development (Best practices and Human Centered Design) Mentor Training (DEIA and Trauma informed mentorship)	October - November	Planning document, completion of trainings, PD materials
Project Plan	-Kick Off Event -Refine problem/question - Develop an approach to addressing	December-January	Kick off agenda, Mentor Matching Engine communication, status updates to Industry Mentors
Project Execution	- Understand (research), Synthesize, Ideate, Prototype - Ongoing communication through The Mentor Matching Engine	February-early March	Status updates to Industry Mentor through Mentor Matching Engine; site visit to company in traditional year
Project Presentation	- Prep project Report - Prep project Presentation Identify next steps - How to implement?	March	Draft presentation to Industry Mentor, feedback on feasibility, final iterations
Close Out	- Evaluation - Networking - Feedback from peers/ industry mentors	April	Final presentation Statewide Showcase

For more information on ISTI's STEM Challenge Program, contact Becky Goldberg and Emily Cooper at ISTI.

One specific example of ISTI's STEM Challenge can be found below. This challenge was developed in partnership with their industry partner, Microsoft. The project outline for this challenge can closely mirror the project outline for the STEM Challenge overall.

PROJECT OVERVIEW	
Team-Based Challenge Title	Microsoft Challenge
Source	Illinois Science & Technology Institute (ISTI) & Microsoft
Industry Partner	Microsoft
Endorsement Area	Information Technology
Problem to Investigate/Scope	As a direct report to Microsoft, you are being asked to use Microsoft's Power Platform to solve a unique problem that impacts a specific user group. You will select a problem that is occurring, at least in part, due to access to or knowledge of how to use technology and the need to connect many users, data, and platforms. When you pick a user group think about what is preventing them from receiving the information they need. Is it access? Where does the disconnect begin? Problem areas include: Medical History Connectivity, Voter Turnout, and Digital Education Gap. User groups include: People age 65+, Rural Americans aged 18+, Americans living with a physical disability or impairment aged 18+
Project Outcomes	Students understand growing technology both creates and fills opportunity and socioeconomic gaps. Students grasp how companies can keep empathy at the forefront of their design to solve these problems. Students are better prepared to enter STEM jobs through gaining qualifications, such as working with Microsoft's Power Platform, and increased knowledge about the STEM field. They gain knowledge through working directly with Mentors at Microsoft and solving a real-world, complex problem facing technology companies such as Microsoft.

This resource was created by Education Systems Center at Northern Illinois University.

The Illinois Work-Based Learning Innovation Network (I-WIN) is designed to help employers, educators, and students leverage innovative models for scaling high-quality work-based learning opportunities in school districts and community colleges across the State. This network explores ways to create equitable opportunities for students through both in-person and virtual learning. For more information on I-WIN and additional work-based learning resources, visit edsystemsniu.org/i-win/.

To access a resource bank of Team-Based Challenge templates, visit edsystemsniu.org/i-win-resources/.