

STEM Equity Project

By Filiberto Vecenti

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Land Grant Office
Extension and Outreach

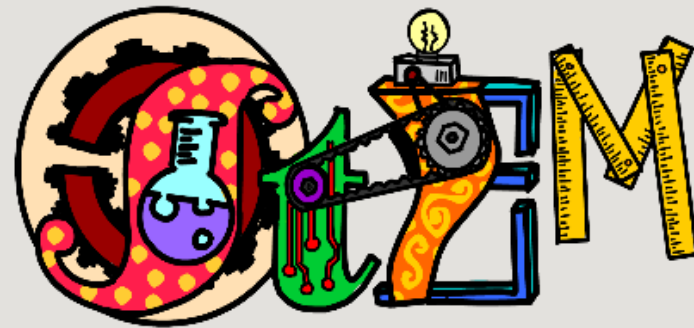


Abstract

The purpose of this Equity Project to develop and create Navajo infused Educational teaching modules: Curricula design and material development; Faculty development and teacher preparation; Student experiential learning; Student recruitment and retention; Instructional delivery systems and strategic partnership. The design of this program is in two-parts; 1) to prepare interdisciplinary science students for entry-level positions in food, agriculture, natural resources and human sciences through a 5-week summer STEM Curriculum development program in collaboration with Center of Dine Teacher Education. 2) Provide continuing educational professional development workshops for Navajo Nation teachers to integrate STEAM into their curriculum/lessons. Increase youth participation in STEAM related activities through Dine College. Findings of recent phases of this Equity project is making an impact on moving forward with improving project management; Keeping STEAM Team on course, defining the project goals and objectives, creating deadline, and working with sufficient team skills. In conclusion, the project will incorporate multiple evaluations to monitor the progress and efficacy of the program. The project will include school outreach activities, advisory meetings, teacher workshops, and k-12 summer student programs.

STEM Objectives

- Curricula design and material development
- Support STEM Methods Courses
- Design and Implement an annual STEM Festival
- Design & Implement Workshops
- Establish and Convene an STEM Curriculum Group
- Developing Networking Partnerships
- Online Resources





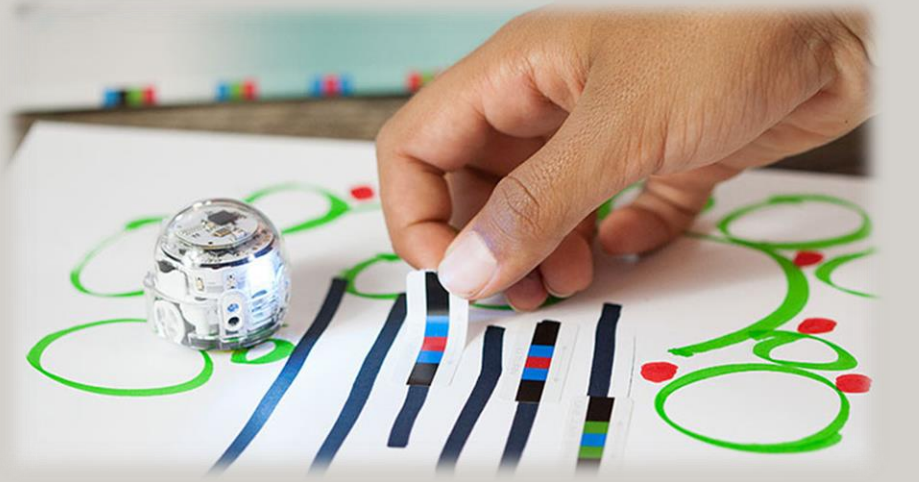
Curricula design and material development

- ▶ The curriculum development team conducted meetings and made decisions about current modules to be used for target audience, intended outcomes, content, methods and evaluation strategies.
- ▶ Processes the STEM team are as follows:
 - ▶ Planning: Identifying educational teachings that combines with Navajo traditional teachings with science activities for specific grade levels.
 - ▶ Content/Method: using Arizona Common Core standards and Navajo Language & culture standards to select contents. Research and design experiential lessons plans
 - ▶ Implementation: team suggested dates & times to implement curriculum materials and began to test and revise curriculum. Interns & Staff assisted heavily on the project to create working kits for participants.
 - ▶ Evaluation: Since the pilot event using STEM curriculums were successful team suggested to gather more evaluations on the curriculum and if needed revise.

Support STEM Methods courses

Outreach program with local elementary and high schools

- ▶ Sessions during enrichment hours STEM Activities
 - ▶ STEM enrichments are conducted to spark student interest from the earliest grades through High school.
 - ▶ Provide experiential learning opportunities for educators
 - ▶ Designed to provide exciting, engaging, hands on experiences.



STEM classroom Kits

- ❖ OzoBots bits
- ❖ Sphero Mini
- ❖ Sphero RVR
- ❖ Metal ring Puzzles
- ❖ Wooden Puzzle set
- ❖ Knot tying kits
- ❖ Snap Circuit kits (Light & NR)
- ❖ Engineering Straw Construction kit
- ❖ Monoprice 3D Printer V2
- ❖ Etc.



Youth Camp

Camps are design to provide hands on project base learning to k-12 students on the Navajo Nation. The program also allows networking and to create partnerships with other STEM organizations to bring education on natural resources to the program. The camps usually consist of variety facilitators/presenters to provide hands on learning resources and hands on project base learning techniques to students.

- Students gain awareness and understanding of safeguarding and restoring valuable natural resources by evaluating the health of a watershed through
- collecting basic ecology data at local streams and lakes, classifying plant vegetation,
- identifying sources of pollution and human impacts, and observing wildlife habitat,
- forest,
- rangelands and watersheds.



The poster features a green and blue color scheme with a background image of corn. It includes the Dine College Land Grant Office logo, event details, and contact information. Three circular callouts highlight key features: 'FREE 7-day Camp', 'Hands-on Activities', and '12-17 Years old'. A 'Register today!' callout is also present.

Dine College
Land Grant Office
Extension and Outreach
Presents
2020 VIRTUAL AGRICULTURE CAMP

FREE
7-day
Camp

Hands-on
Activities

12-17
Years
old

Free 7-day Online Educational Camp
Explore the natural and cultural relationships with land, livestock, and water, including environmental protection and restoration practices.
Highly preferred candidates with access to a Computer, internet &  zoom

Application Available at www.dinecollege.edu & Land Grant Office Facebook

Begins: Sunday, July 19, 2020
End: Saturday, July 25, 2020

Extended Deadline: July 17, 2020

*Please scan all completed documents

Register today!

USDA

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Design & Implement Workshops

STEM workshops are schedule annually during the year for spring and fall. Workshops are hosted around school calendars to allow plans to attend the event in spring and fall seasons. Partnerships are created with organizations and institutions to bring STEM related resources to Navajo schools. MOU are created to allow students to participate in STEM enrichment workshops. During the STEM Enrichment workshops, Students are given hands on project base learning related to STEM. During teacher workshops, professional development hours are given in a certificate form.

- Virtual Teacher workshops
- Virtual Camp
- STEM enrichment
- Virtual Partnerships
- Other Virtual events



STEM Festivals

The STEM Festival emphasizes science, technology, engineering & math activities. STEM facilitator partners will consist of individuals representing different institutional research/outreach programs, faculty members, students, local community members and Universities. Activities conducted are relevant to student's grade levels where facilitators run sessions with students throughout the day.

- Non-competitive celebration of great ideas and problems in STEM
- Facilitators provide expertise & Innovative Ideas
- Organizations share valuable contacts & information
- support and services between Departments, Institutes, & Universities

STEM Festival



STEM Festival SPRING 2020
CANCELLED...



Dine College
Land Grant Office
Extension and Outreach

aps presents

STEM

BHP

SPRING

FESTIVAL

April 20 & 21, 2020

Event starts @ 9 AM

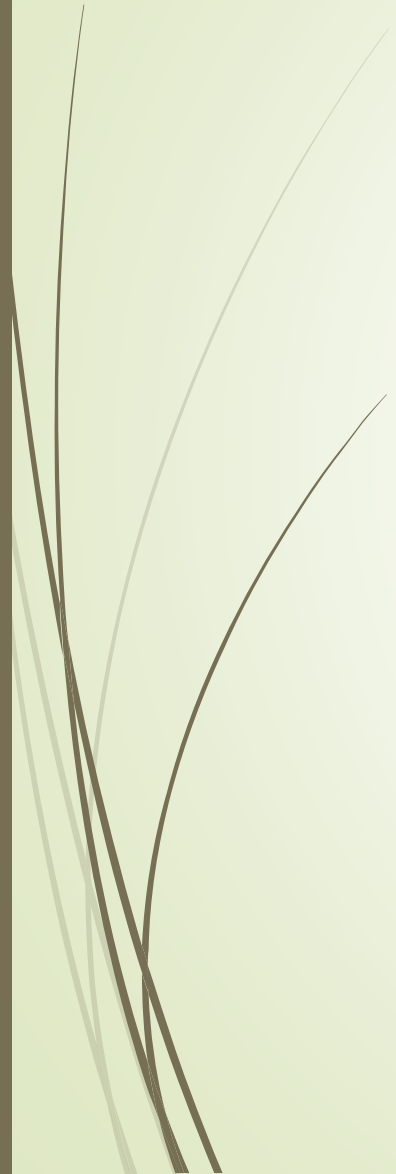
Tsail Campus GYMNASIUM

April 20 (4th- 8th grade) & April 21 (Highschool)

Lunch will be on your own

Registration due April 13, 2020 @ 5pm

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Questions?