Native Meteorite (NaMe) Project: Map-Based STEM Learning

Alberto Gaucín, Ayomide Ayowole-Obi, Erika Rebollo Díaz, Robby Dai
Instructor: Dr. Binyang Wei

TCU College of Science & Engineering — Department of Computer Science

About The NaMe Project

NaMe aims to tell the story of meteorites that fell on Native Lands, acknowledging their cultural and scientific significance equally. To truly encapsulate the entire history of a meteorite, you must also understand the place in which it fell.

NaMe currently focuses on meteorites fallen on the lands of the Choctaw, Cherokee, and Chickasaw Nations in Oklahoma; but is expected to include other Nations in the future.

About Our Client

Native Earth Native Sky(NENS) is a $3.3 million cooperative agreement between the Oklahoma State University and NASA through NASA's Science Activation Program.*

Dr. Rhiannon Mayne— curator of the Monnig Meteorite Gallery at TCU— received grant funding from NENS to implement a place-based learning platform for Native American youth to learn about meteorites.

* https://education.okstate.edu/research/centers/native-earth-native-sky/

Technologies

Firebase

Tailwind CSS

NEXT.JS

Scan here to see our project in action!

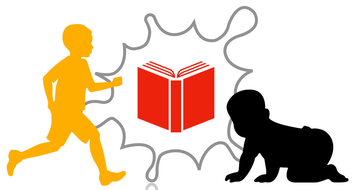
The Goal

- Make an engaging, informational, respectful site for users.
- Create a functional map page which displays meteorite images and text on request for users. *Must be able to filter regions, states, and Native American Nations represented in the project.*
- Create a platform for information storage for K-12 learning links, documents, images

User-Conscious Development

Site Users

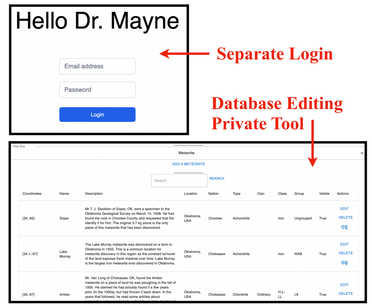
Map users range between of K-12, so it's important to have a friendly interface.



We used medicine wheel colors, a simple layout, and an interactive map to achieve this.

Administrator Login

We built a separate entry point for administrators to ensure the security of editing access to the site.



Logo

Visit our site to read the meaning behind Deante' Moore's logo, created specially for this project.

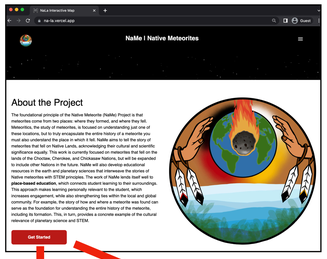
Acknowledgements

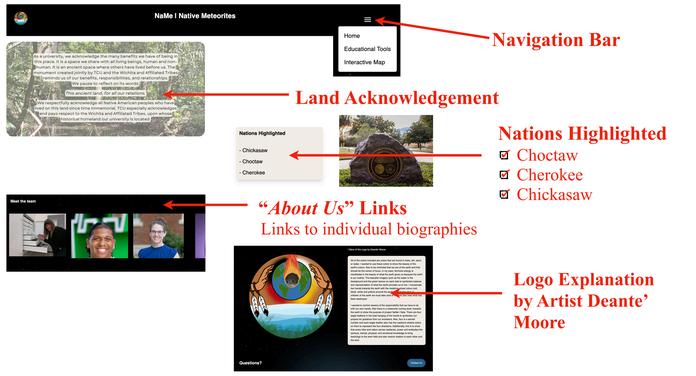
Thank you to the incredible:

- **Dr. Rhiannon Mayne**, for trusting us with your vision and giving us the opportunity to work on this project - *Client*
- **Dr. Bingyang Wei**, for leading us - *Instructor, Advisor*
- **Deante' Moore**, for his art and feedback - *Artist, Artistic Advisor*
- **Korie Hawkins**, for her feedback - *Visual Advisor*

Site Flow

START: Home Page





Find Meteorites

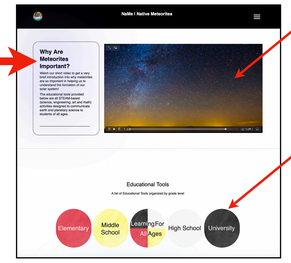
Find Meteorites By Location takes the user directly to the map-based learning tool.

OR

Educational Tools

Educational Tools takes the user to learn more about the Meteorite Story, and to access free-choice learning resources for the classroom and beyond.

Educational Tools Page

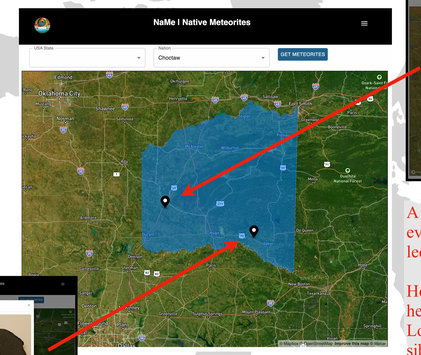


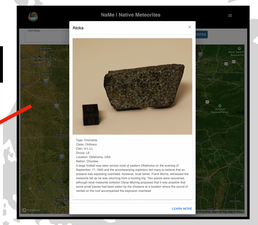
"The Meteorite Story" Interactive
Provides an introduction to Meteorites, entry point to the educational materials that follow.

Educational Tools
- Elementary Level
- Middle School Level
- High School Level
- University Level
- Learning For All Ages

Place-Based Education

Students have the option to filter meteorites by state, or Nation. The results will then be displayed accordingly.

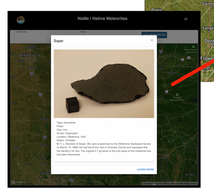




Atoka

Type: Chondrite
Class: Ordinary
Clan: H-L-LL
Group: L6
Location: Oklahoma, USA
Nation: Choctaw

A large fireball was seen across most of eastern Oklahoma on the evening of September 17, 1945 and the accompanying explosion led many to believe that an airplane was exploding in the sky. However, local farmer Frank Morris witnessed the meteorite fall as he was returning from a hunting trip. Two pieces were recovered, although local meteorite collector Oscar Monnig proposed that it was possible that some small pieces had been eaten by chickens! Local meteorite collector Oscar Monnig proposed that it was possible that some small pieces had been eaten by chickens!



Learning is enhanced by meteorite images, information, and links to other resources to learn more.