Teaching Science in Context: Bringing in Diverse Voices

Emma Harnisch & Tavar Jones
What is a project for social good you want to bring into your science classroom?
If we teach science without creativity or context, we lose sight of the ways in which our practice can be warped and sold to systems we cannot control.
So, how do we do this?

1. Understand the major concepts
2. Identify the gaps
3. Find the resources
4. Create connections
5. Embrace the questions and suggestions
Understand the concept
Identify the gaps & points of entry
Identify the gaps & points of entry

BIASED

LESS BIASED
Find the resources

We suggest:

- Art, literature, music
- Social movements
- History
- Media
- Local knowledge
Diverted Colorado River

Gardens in the Dunes

Leslie Marmon Silko

Author of Ceremony and Almanac of the Dead

House in Greenwich now underwater (image from UMass Special Collection, circa 1910) to build the Quabbin Reservoir in 1938
Learning about bacteria with Cowboy Bebop
Structures in space
Make the connections
Embrace the questions and suggestions
Students who demonstrate understanding can:

**MS-LS2-2.** Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. [Clarification Statement: Emphasis is on predicting consistent patterns of interactions in different ecosystems in terms of the relationships among and between organisms and abiotic components of ecosystems. Examples of types of interactions could include competitive, predatory, and mutually beneficial.]

**MS-LS2-5.** Evaluate competing design solutions for maintaining biodiversity and ecosystem services.* [Clarification Statement: Examples of ecosystem services could include water purification, nutrient recycling, and prevention of soil erosion. Examples of design solution constraints could include scientific, economic, and social considerations.]
Champa San Agustín Mpio, auto-
nombre libertad de los pueblos mixis.
está usted en territorio
rebelde zapatista aquí el
pueblo manda y el gobierno
obedece. Junta de buen go-
biero hacia la esperanza.
Zona selva fronteriza.
Students who demonstrate understanding can:

2-ESS1- Use information from several sources to provide evidence that Earth events can occur quickly or slowly. [Clarification Statement: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which occurs slowly.] [Assessment Boundary: Assessment does not include quantitative measurements of timescales.]

2-ESS2- Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.* [Clarification Statement: Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.]

2-ESS2- Develop a model to represent the shapes and kinds of land and bodies of water in an area. [Assessment Boundary: Assessment does not include quantitative scaling in models.]

2-ESS2- Obtain information to identify where water is found on Earth and that it can be solid or liquid.
RIVERS of SUNLIGHT

HOW THE SUN MOVES WATER AROUND THE EARTH

by Molly Bang & Penny Chisholm
KEEP THE EARTH CLEAN
IT'S NOT URAN
MAKE EARTH GREAT AGAIN.
UNIVERSITY EXETER AGAINST CLIMATE CHANGE
IF YOU EXPECT ME TO BE RESPONSIBLE, THEN LEAD BY EXAMPLE AND GIVE ME A FUTURE!!!