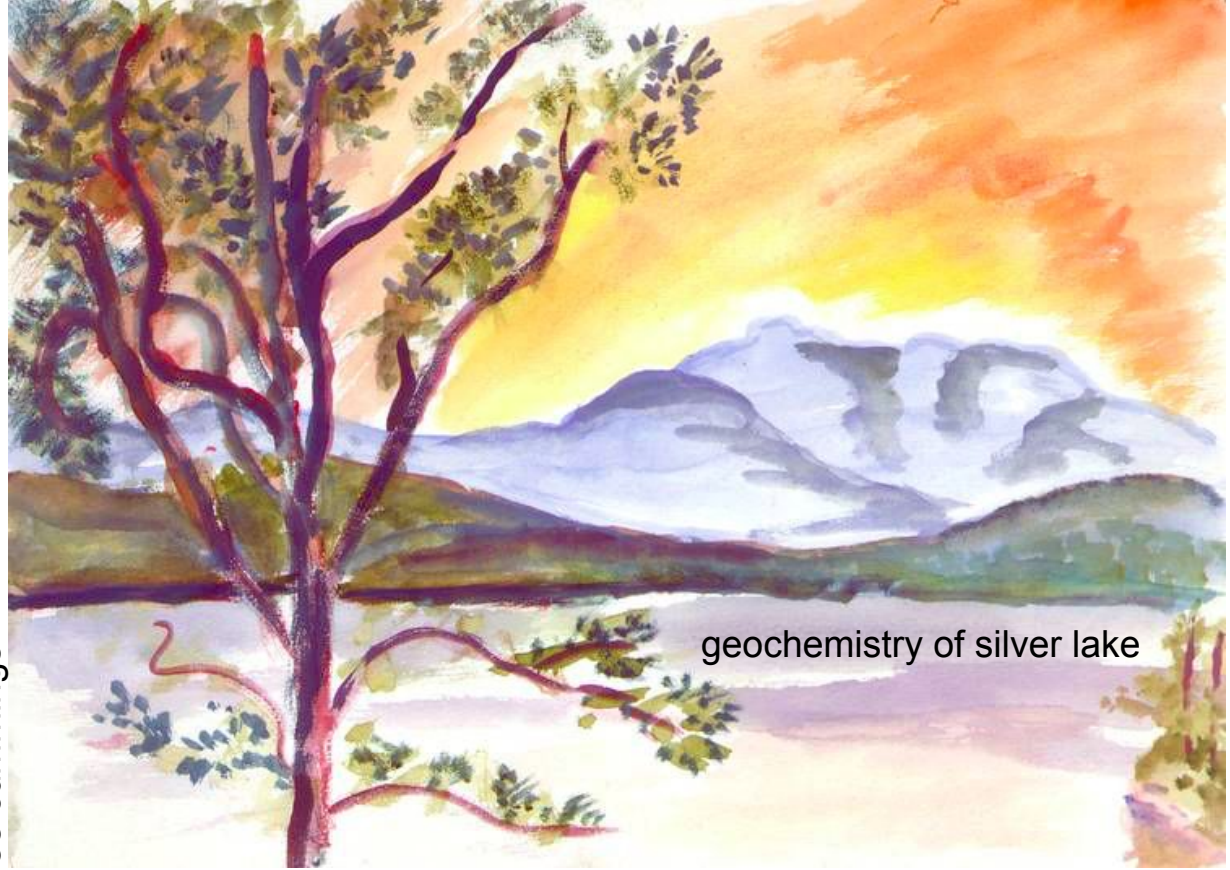
Teaching Science in Context: Bringing in Diverse Voices

Emma Harnisch & Tavar Jones

What is a project for social good you want to bring into your science classroom?

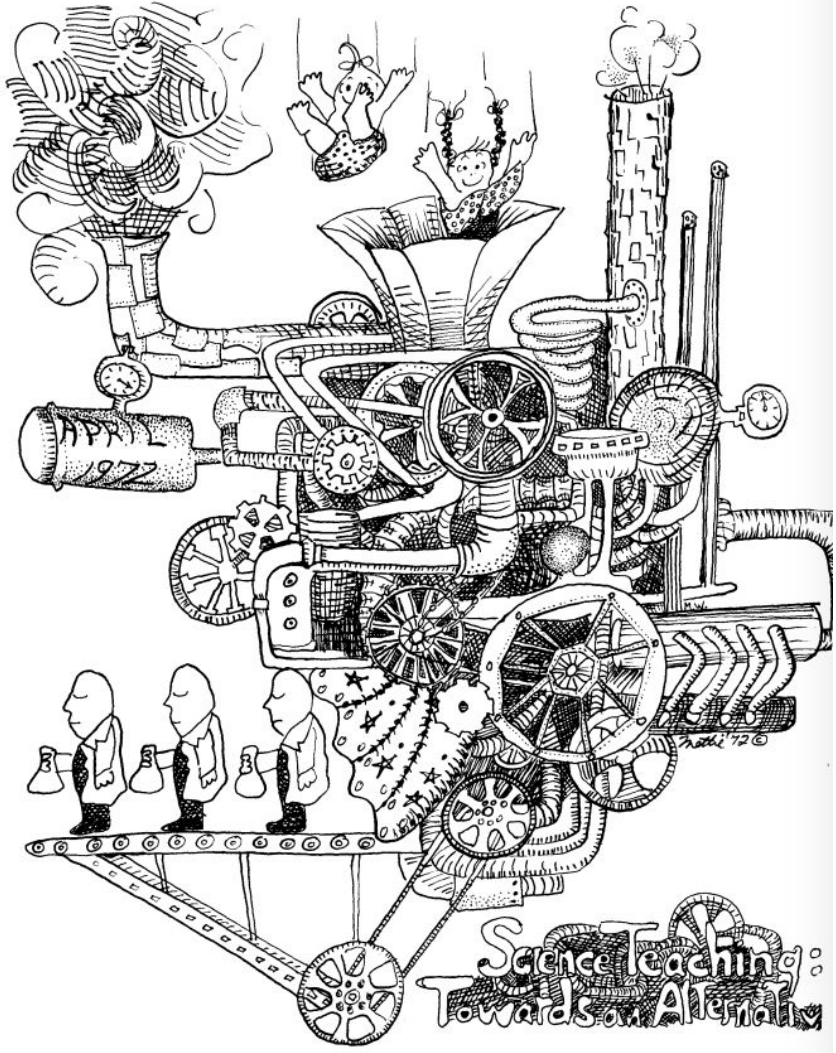
DEFEND
THE
SACRED



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?

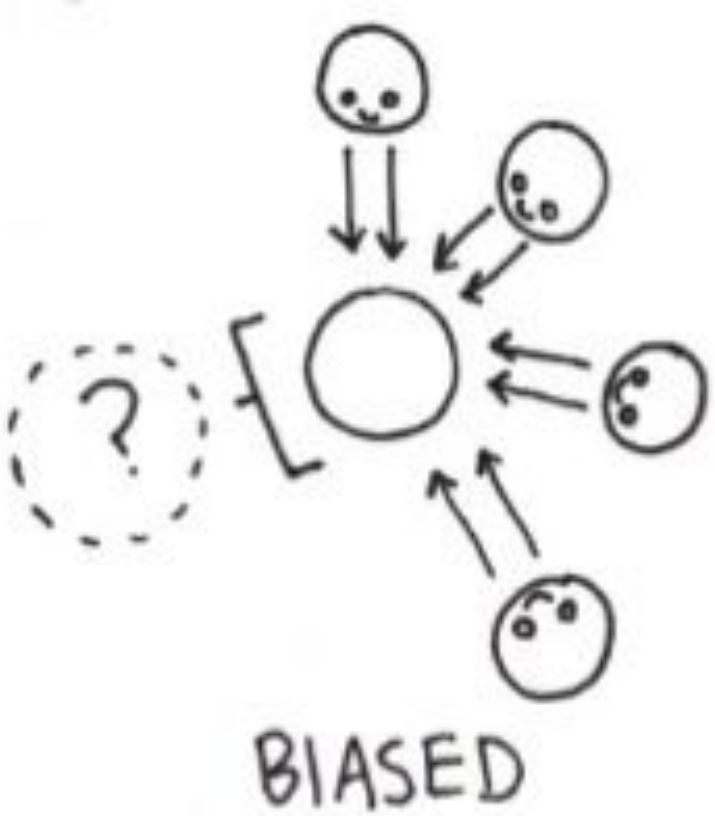
1. Understand the major concepts
2. Identify the gaps
3. Find the resources
4. Create connections
5. Embrace the questions and suggestions

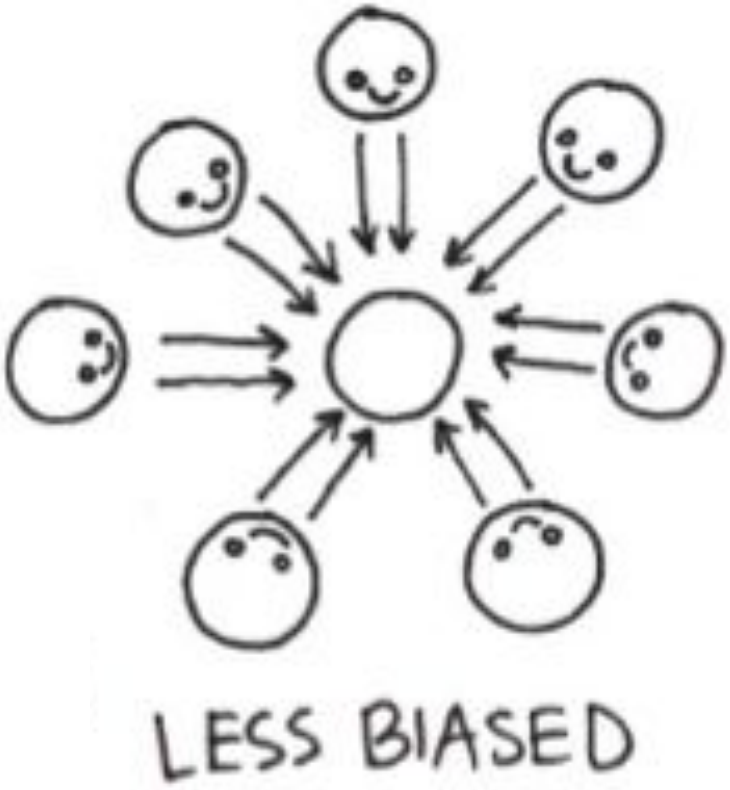


Understand the concept

Identify the gaps & points of entry

Identify the gaps & points of entry





Find the resources

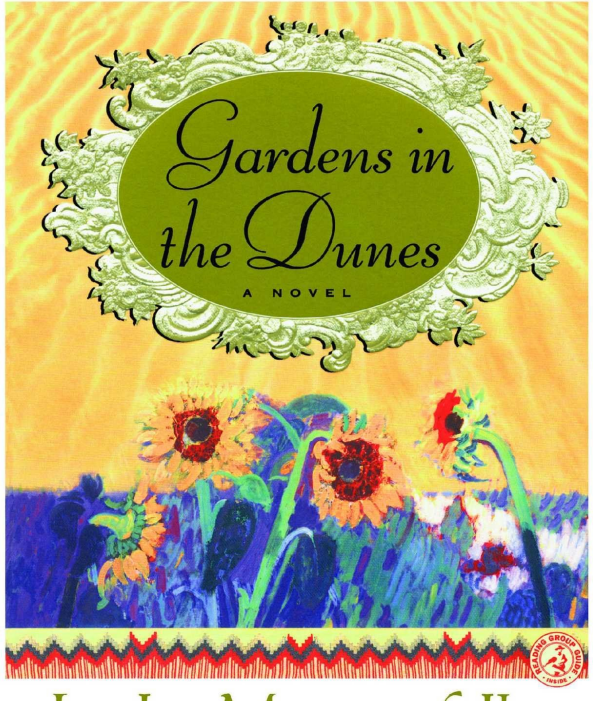
We suggest:

- Art, literature, music
- Social movements
- History
- Media
- Local knowledge

DIVERTED COLORADO RIVER

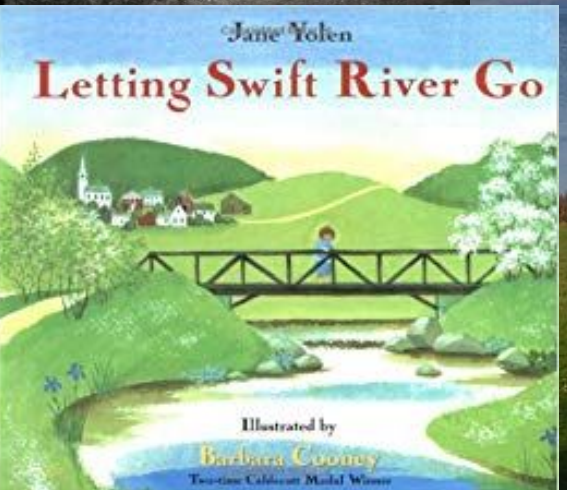
&

"Rich, intriguing . . . a mix of myth, allegory, Victorian children's tale, and adventure yarn, laced with readings in Southwest history."—Suzanne Ruta, *The New York Times Book Review*



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

Youtube and local knowledge

#NasDaily #NuseirYassin

How This Guy Cleaned a Lake. || NAS Daily in Peru ||

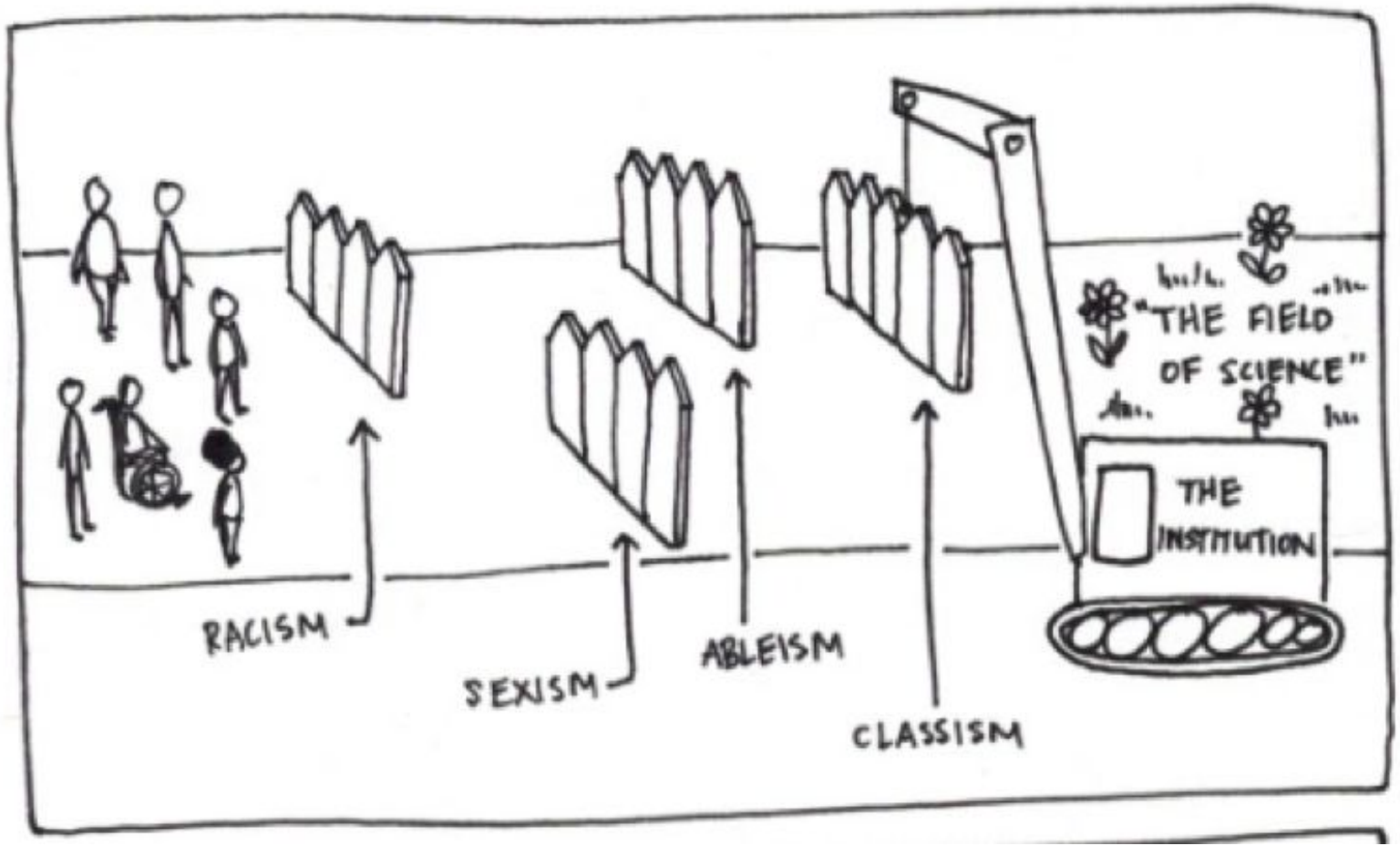
4,722,966 views

279K 3.5K SHARE SAVE

Learning about bacteria with Cowboy Bebop

Structures in space

Make the connections



Embrace the questions and suggestions

Applying to k8

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.]

HUELGA

Chamipa San Agustin Mpio. Auto-
nomo libertad de los Pueblos Mayas
está Usted en territorio
rebelde zapatista aqui el
pueblo manda y el gobierno
obedece. Junta de buen go-
bierno hacia la esperanza,
zona selva fronteriza.

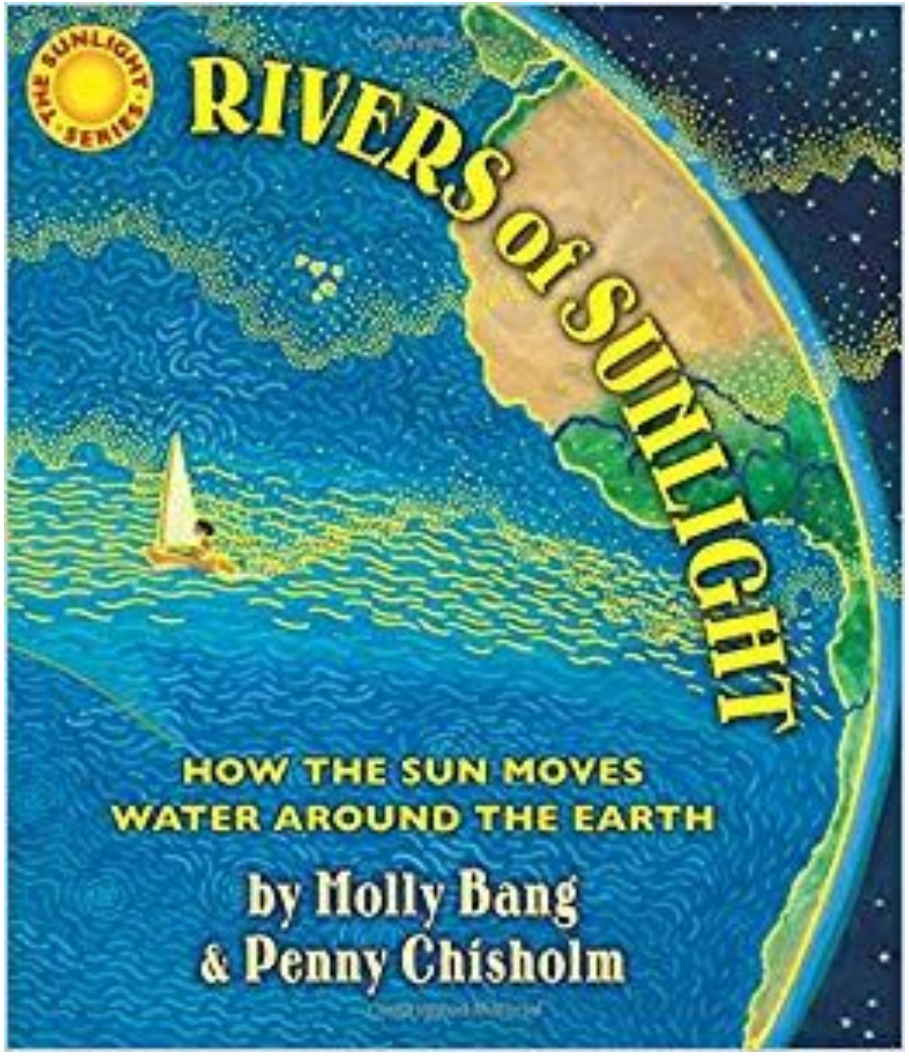
Students who demonstrate understanding can:

2-ESS1-1. **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-ESS2-1. **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-ESS2-2. **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-ESS2-3. **Obtain information to identify where water is found on Earth and that it can be solid or liquid.**


THE SUNLIGHT SERIES
RIVERS of SUNLIGHT
HOW THE SUN MOVES WATER AROUND THE EARTH
by Molly Bang
& Penny Chisholm

KEEP THE EARTH CLEAN
MAKE EARTH GREAT AGAIN.
IF YOU EXPECT ME TO BE RESPONSIBLE! THEN LEAD BY EXAMPLE AND GIVE ME A FUTURE!!!
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