



TEACHING CLIMATE SCIENCE PRINCIPLES

High School Earth Science Scope and Sequence Connecting Climate and Drought

Unit Question: What are the local impacts of drought and how do we build resiliency?

Climate Science Principle: [Climate change will have consequences for the Earth system and human lives](#)

Lesson & Question	What we do and figure out	Connection to Climate:
Lesson 1: Connecting with Special Places in Nature 30 minutes Water is Safety, Comfort, and Fun What is your favorite water memory? 	• Identify emotions that students have for places in nature through drawing • Identify students' everyday connections to nature • Build reciprocal relationships with natural places	Climate change and its impacts have a direct, significant impact on mental health and well-being. This activity encourages the expression and processing of climate emotions by sharing a connection to nature while also reducing stress.
Navigation to Next Lesson: After connecting with the importance of water in their own lives and the lives of others through personal stories and drawings, students learn about how drought in the Colorado River basin impacts the lives of millions of people.		

Lesson 2: Megadrought in the Colorado River Basin 180 minutes What is causing the ongoing megadrought in the Colorado River Basin? 	- Analyze and interpret long-term temperature and precipitation data to evaluate the cause of a decades-long drought (megadrought) across the Colorado River Basin. - Construct conceptual models to explain the cause of megadrought conditions across the Colorado River Basin.	The major river in the southwest is the Colorado River which supplies the water for several states and over 40 million people. However, rising temperatures, the result of human-caused climate change, and shifting precipitation patterns are causing the ongoing megadrought (2000-2024) in the Colorado River Basin. The megadrought is amplified by the increasing demands for water for agriculture, hydropower, and freshwater.
Navigation to Next Lesson: After learning about megadrought in the Colorado River Basin, students will then explore drought conditions in their area.		
Lesson 3: Adapting to Extremes: Exploring the Science of Drought in Colorado 120 minutes	- Analyze environmental data to classify patterns of drought severity in Colorado. - Communicate information about the causes and effects of drought in your community.	Climate change is altering precipitation patterns and temperature conditions which is affecting the availability of freshwater resources, reducing reliable access to water for many people.
Navigation to Next Lesson: Having examined drought on multiple scales, students will play a scenario-based game to collaboratively mitigate community challenges brought about by drought conditions.		
Lesson 4: Drought Game 120 minutes Actions communities can take to protect and prepare themselves for drought	- Evaluate information on drought conditions to appropriately use community resources to respond to a drought in their community by assessing the causes and effects of extreme drought. - Design solutions to address drought risk	When teaching about climate impacts, it's a good idea to touch on solutions to climate change. Ideally, students can feel informed and empowered, rather than discouraged about the world's problems.

	using a system model of a community drought response effort.	In this role-playing game, students explore their role as community members and develop a plan for how to work together to prepare for and respond to a drought event. The community members need to assess the costs and benefits of different resilience measures and keep their community from entering Critical Drought conditions.
Navigation to Next Lesson: Challenge students to summarize what they've learned by creating a social media post to share with the community.		
Lesson 5: Closure Activity How can we mitigate the impacts of drought?	Construct a social media post, including a photo and a short description to advertise a drought resilience strategy you plan to implement in your community.	