



Lesson: Drought

Dry, Drier, Drought in Colorado

Driving Questions:

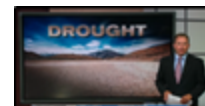
- What causes drought?
- How is drought measured and monitored?
- Which areas in Colorado are more vulnerable to drought impacts?
- In what season are drought impacts most likely to occur

Word Bank	
Natural Hazards	naturally occurring phenomenon such as flood, wildfire, extreme heat, or drought, which may disrupt or damage a community.
Drought	a prolonged drier-than-normal period in a natural climate cycle that results in water-related problems.
GIS	an abbreviation for <i>Geographic Information System</i> , which is a computer-based process that gathers, manages, analyzes, and visualizes spatial data.
Precipitation	any type of water that forms in the Earth's atmosphere and then drops onto the surface of the Earth (e.g., rain, snow, sleet or hail).
Snow Water Equivalent (SWE)	the amount of water contained in the snowpack at a location (if the entire snowpack were to melt).

Activity 1: Drought, wildfire, and weather: What's the connection in Colorado?

1. What do you know about drought? In one minute, jot down as much information as you know about droughts in the "What I Know" section of the KWL Chart on page 2.

Watch the [drought news clip](#) (2:43) to get a feel for the impacts of drought on people and the environment, and how drought conditions are mapped.



Next, watch [Assessing Drought in the United States](#) to learn how scientists assess the causes and impacts of drought in our country, including Colorado.



2. Write down your observations and questions about drought as a natural hazard in the "What I Wonder" section of the KWL Chart.





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KWL Chart	
What I Know #1	
What I Wonder #2	
What I Learned (Activity 3)	

3. List the four categories of drought, in order from least to greatest level of drought, and their color coding.

4. Which organization tracks the level of drought across our country?





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Activity 2: Stations

Activity 2.1 What is drought, its causes, and impacts?

Build your understanding of the causes, effects, and historical impact of drought by watching the National Geographic [Droughts 101](#) clip.



Next, use the [Drought in America: Slow moving, far reaching](#) website to build your knowledge about drought.

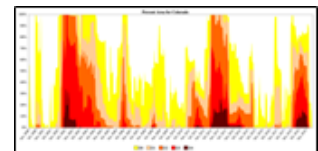


5. What is drought?

6. What are some causes and impacts of drought?

Activity 2.2 What were past droughts in Colorado like?

Review the graph of [Drought History in Colorado](#) graph (scroll down the webpage and click the “Percent Area for Colorado” graph). Record your observations about the drought trends and patterns that you notice in Colorado from 2000 to the present.



7. Which years did Colorado experience extreme drought (D3) and exceptional drought (D4)? Which specific timeframe had the greatest level of exceptional drought (D4)?

8. When Colorado is experiencing drought (D1-D4), especially intense drought (D3, D4) what percentage of the state is generally affected?





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Next, explore the [Drought Data Snapshots](#) interactive to compare and contrast the 2012 drought in Colorado.

Use the adjustable timeline located below the map screen to move the “Year” tab over two marks to the right to select 2012, and slide the “Day” tab from the far left (January) to the far right (December) to observe changes in the map data (spatial data) over the year.



9. During 2012, which month and what general location in Colorado first experienced extreme drought (red)?

10. During 2012, which month and what general location in the state was first affected by exceptional drought (dark red)?

11. Which month of 2012 was the severity and expanse of drought the greatest in Colorado, and what was the primary level of drought?

12. What was the statewide level of drought in Colorado at the end of December 2012?





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Activity 2.3 What is the story of the 2018 American Southwest Drought and its severity in Colorado?

The American Southwest is defined as New Mexico, Colorado, Utah, Nevada, Southern California, and Arizona.

Review the maps of the 2018 southwest drought; first the map from the start of the year and then at the map at the end of the year:

- [Dry Southwest still waiting on winter in January 2018](#) (start of 2018)
- [Intense drought in the U.S. Southwest persisted throughout 2018, lingers into the new year](#) (end of 2018)



Now read a short article from the Denver Post from May 2019:

- [Finally! Colorado's drought is nearly officially over](#)

13. What were the drought categories throughout Colorado at the start of 2018? Which areas of the state had the greatest drought level, and which areas had the lowest? *Note: the dates for each map are in the bottom left corner of the animation.*

14. What were the drought categories throughout Colorado at the end of 2018? Which areas of the state had the greatest drought level, and which areas had the lowest?

15. How do snowpack levels affect the potential for drought in Colorado?





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Activity 2.4 Drought Preparation & Response How can our community prepare for and respond to drought?

Watch the video [To Escape Drought, Slow and Steady Wins the Race.](#)

Then, review the [Drought Ready.gov](#) webpage. In your *Drought Diary student handout*, write down key tips for your community to manage drought.



16. What are ways that your family and community can do to conserve water during a drought?

17. Drought increases the risk of wildfire due to vegetation drying out and dying. What are some fire prevention actions you and your family can take during a drought?

Activity 3 : How can communities know about and manage their drought risk in Colorado?

Activity 3.1 Drought Expert Interview

Watch the short video with Doug Kluck who is the NOAA Regional Climate Services Director for the Central Region of the country.

[Drought Expert Video](#)



These materials were developed by CIRES Education & Outreach at CU Boulder.
<https://cires.colorado.edu/outreach/projects/HEARTForce>





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