Introduction to Drought

Overview

Students are introduced to the effects of too little water and how it causes drought in an area.

Estimated Time

One class period.

Materials

PowerPoint with teacher explanations and student instructions that can be used as a guide to the lesson. [Slides are numbered in slide notes to correspond to directions below.]

Video segment on droughts in Texas:

- VIDEO—Is Texas running out of water—8 min by Verify Road Trip
- VIDEO—Texas-sized drought for Lone Star state—2minutes 28 seconds CBS
- VIDEO—Texas towns run out of water as drought takes it toll—9 minutes 28 seconds PBS NewsHour (or https://youtu.be/nFraI20yauQ)
- VIDEO—Texas drought video—7:29 Texas House Natural Resources Committee
- VIDEO—Critical Texas drought forecast may alter summer crop planting decisions—3:59 AgriLife Today – Texas Agriculture News
- VIDEO—NASA's SMAP satellite monitors Texas drought—2:12 NSA Jet Propulsion Laboratory

Copies of **Student Worksheet 1—Geography Quadrants Video Observation**—Drought in Texas video notes

Pre-prepared class chart that matches Student Worksheet 1. This can be prepared on large butcher paper, students can use a white board, the chart can be a slide in the teacher PowerPoint.

Learning Objectives

After completing the lesson, students will be able to:

- **Identify** places/regions that suffer from too little water.

- **Describe** impacts by humans and on humans of too little water (population pressures, migration/push-pulls, urban development issues)
- **Explain** environmental and human related reasons there is drought in some regions.
- **Identify** places/regions in Texas that suffer from too little water.

Opening the Lesson

1. Use **Drought Lesson 1 Instructions Power Point slides** to introduce the lesson. (Note: slide 2 with Essential Questions is meant for teacher use and is a 'hidden slide'.)
   - Tell students that they will see some photographs and ask them to speculate on their own regarding the content. Use the OSAE method (Observe, Speculate, Analyze, Evaluate) as a notetaking structure as needed.
   - Some suggestion questions to discuss afterwards include:

     What is happening?

     Where is it happening?

     What impacts do you observe on the environment and on people?
2. Using table or elbow partners, discuss what students have observed in the slides/pictures. They should draw conclusions related to the impact of drought on different aspects of the physical and built environment. (Built Environment—objects on the landscape built by humans—housing, roads, school, cell towers, shopping centers….)
3. Whole group debrief: Solicit feedback from students regarding their own observations and partner observations about the photographs. Use these questions as a guide:
   - What is happening in the pictures?
   - Where do you think it is happening?
   - What impacts do you observe on the environment and what impacts do you think this will have on people?

   To extend the opening, instruct students to discuss and classify pictures as municipal/agricultural/industrial/recreational as well as to think about and discuss which sector would be most impacted.

Developing the Lesson

4. Discuss the basics of drought in general using power point notes provided. [**Drought Lesson 1 PPT Instructions**] Students may take notes as needed depending on their prior knowledge level. A definition for drought is provided in the power point.

5. Distribute **Worksheet 1: Geography Quadrants Video Observation**

   - Instruct students that they will record what they see when they view a video about drought in Texas. (They will write notes in the quadrants on the Worksheet and share their notes with another student.)
   - If needed, explain what type of observation will be in each quadrant:

     Physical Description—describe what they see regarding the terrain/physical landscape

     Human Geography—describe the cultural landscape shown

     What Place/Region—identify the region of Texas where the drought occurred

     Impact/Effect on the built environment (Defined above)

6. **View video and have students record their observations.**

   Link to video—*choose one or two of the Youtube videos provided in Materials*

   You can use a different video that meets the needs of your class situation, be sure it hits all the quadrants of inquiry as stated above.

7. **Pair-Share.** After students have viewed the video and recorded their notes on the handout, instruct them to pair up with a student neighbor and share their notes. They are to add notes to their own if a partner had noted something different. Remind students to be sure and answer the closing question on their handout.

   - Students should be given time to answer the closing question after the video, either on their own, with a partner, etc.…

Concluding the Lesson

8. **Class Discussion:** Using a pre-prepared class chart with the same video observation quadrants on it, (butcher paper, white board, ppt slide, etc.…) record words or phrases that students noted to summarize their observations.

   - CLOSING QUESTIONS—after creating the class chart, use these questions to check for understanding as needed.

     How do places/regions suffer during a time of too little water/drought?

     How are humans impacted by too little water?

     How do humans create situations that lead to too little water?

     What do you think will be the result (effect) (impact) of the drought?

     What happens in regions when drought occurs?

Extension Question

What are some other ways droughts can affect people in a community?

(This can be a closing question as an exit ticket, etc., instead of part of the survey OR as an introduction question in Lesson 2.)

Worksheet 1:

Geography Quadrants Video Observation Form

Name _____ **Date** _____ **Period** _____

While watching the video, take notes in each quadrant/square based on what you observe.

DROUGHT IN TEXAS VIDEO NOTES	
PHYSICAL GEOGRAPHY/LANDSCAPE	HUMAN GEOGRAPHY/ CULTURAL LANDSCAPE/BUILT ENVIRONMENT
PLACE/REGION IDENTIFICATION	IMPACTS & EFFECTS ON THE CULTURAL LANDSCAPE/BUILT ENVIRONMENT

What do you think will be the result (effect) (impact) of the drought?