Desertification: Cause and Effect
Students will learn about the causes and effects of desertification.

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Grade Level: 6-8
Duration: 4-5 class periods

Overview
The desert environments around the world are expanding every day due to both natural causes such as drought, wind, erosion, and evaporation, as well as human causes such as overgrazing, poor conservation practices, and lack of crop rotation. This process of the desert becoming larger is called desertification and is threatening the Sahel in Northwest Africa.

Purpose
In this lesson student will be familiarized with the causes and effects of desertification, through a variety of modalities including: taking vocabulary notes, reading of an environmental article, completing cause and effect graphic organizers and writing an expository essay.

National Geography Standards
ELEMENT TWO: PLACES AND REGIONS
4. The physical and human characteristics of places.

ELEMENT THREE: PHYSICAL SYSTEMS
7. The physical processes that shape the patterns of earth's surface.

ELEMENT FIVE: ENVIRONMENT AND SOCIETY
15. How physical systems affect human systems.

Arizona Geography Standards
ESSENTIALS 3SS-E7
Explain the effects of interactions between human and natural systems, including the changes in the meaning, use, and distribution of natural resources, with emphasis on:
PO 3 how and why humans modify ecosystems, including deforestation and desertification.

Arizona Language Arts Standards
READING STANDARDS: ESSENTIALS
R-E2 Use reading strategies such as making inferences and predictions, summarizing, paraphrasing, differentiating fact from opinion, drawing conclusions, and determining the author's purposes and perspective to comprehend written selections.
PO 5 Determine cause and effect relationships.

WRITING STANDARDS: ESSENTIALS
W-E4 Write an expository essay that contains effective introductory and summary statements and fully develops the ideas with details, facts, examples, and descriptions.
PO 3 Use personal interpretation, analysis, evaluation, or reflection to evidence understanding of subject.
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### Materials
- Physical Map of Africa
- Physical Map of Africa Answer Key
- Teacher background notes
- Vocabulary T-chart
- Vocabulary T-chart Answer Key
- Cause and Effect Student Model #1
- Cause and Effect Key for Model #1
- Environment Article
- Cause and Effect Sequence #1,2,3
- Cause and Effect Sequence #1 and #2 Key
- Writing Prompt for Cause and Effect of Desertification
- 6-Point Rubric on Ideas and Content
- 6-Point Rubric on Word Choice

### Objectives
The student will be able to:
- locate the Sahel, Sahara Desert, Kalahari Desert, Namib Desert, Atlas Mountains, Ethiopian Highlands, Drakensberg Mountains, savanna, and Ttropical rainforest, Nile River, Congo River and Great Rift Valley on a map of Africa.
- define vocabulary words related to desertification.
- read an environmental article on desertification.
- diagram cause and effect sequences of desertification on a graphic organizer.
- write an expository essay on the causes and effects of desertification.

### Procedures

#### SESSION ONE
1. Brainstorm with the students: *What is like in Africa? What is the landscape like, the people, etc? Write on the chalkboard as the students give their impressions.*
2. Distribute the physical map of Africa and have students label and color the regions.
3. Discuss the physical geography of each of the regions, as they copy and color. (Information on the regions is located in the teacher background notes.)
4. Distribute the vocabulary T-chart and have students fill in the definition from the overhead.

#### SESSION TWO
1. Distribute the Cause and Effect Student Model #1. Discuss the Cause and Effect Sequence Example, then demonstrate how to diagram the sequence into the Graphic Organizer.
2. Distribute the article about the environment. Discuss how the cause and effect sequence model can be used to interpret information in the article.
3. Instruct students that while they read the article, to look for examples of cause and effect sequences.
4. Distribute the Cause and Effect Sequence #1 to guide students in completing the cause/effect sequence on Desertification. Help students diagram on the graphic organizer.

#### SESSION THREE
1. Redistribute the environmental article and hand out Cause and Effect Sequence #2 and #3.
2. Allow students to work in pairs and explain they will need to perform the following tasks:
   - Reread the article and identify specific causes/effects examples of desertification.
   - On Cause Effect Sequence #2, formulate a complete three-step sequence in full sentences.
   - Diagram the three-step sequence on the graphic organizer.
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♦ Do Cause and Effect Sequence #3 next utilizing the above procedures.

♦ SESSION FOUR

1. Distribute writing prompt and discuss the criteria for the writing assignment.

2. Distribute the Word Choice and Ideas and Content 6-point rubrics for the expository essay

3. Students write a Cause and Effect expository essay utilizing the Cause and Effect Sequences #1, #2, #3 and Vocabulary T-Chart.

Assessment

Grade the Cause and Effect sequencing graphic organizer #1,#2,#3.

Utilize the Idea and Content six-point rubric on cause and effect and the Word Choice six-point rubric to grade the paper. Mastery is 4 out of 6.

Extensions

Cause and Effect on destroying the rainforest

Cause and Effect on deforestation (e.g. different types of forests, such as deciduous or temperate coniferous).

Have students compare desertification with deforestation.

Write a paragraph comparing and contrasting desertification with deforestation.

Sources

The following can by found at the local, city, county, or school libraries:
* Expanding Deserts by Paula Hogan
* The Spread of Deserts by Ewan McLeish
* Last Frontier for Mankind: Deserts by Lawrence William

United Nations Secretariat of the Convention to Combat Desertification
http://www.unccd.int/main.php

UN Food and Agriculture on desertification
http://www.fao.org/desertification/

Land Degradation and Desertification

National Geographic Video "Africa's Physical Features"

NGS Picture Pack transparencies "Geography of Africa"