



# Why is Africa Building a Great Green Wall?

## Desertification of the Sahel



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<b>Grade Level</b>	7th Grade	<b>Time Frame</b>	1-2 class period(s)
<b>Subject</b>	Social Studies	<b>Duration</b>	100 minutes
<b>Course</b>	World Geography		

### Essential Question

How do interactions between humans and their environment impact both the people and the natural environment of the Sahel? What are the causes and effects of desertification in the Sahel? Why is Africa building a Great Green Wall?"

### Summary

In this lesson, students will work together to determine the definition of desertification and create a chart to explain the causes and effects of desertification in the sub-Saharan Sahel region. Then, students will learn how Africa is responding to desertification with a project called the Great Green Wall and how growing the Great Green Wall has changed life in the Sahel. Based on what they have learned about the causes and effects of desertification, students will write their own tweets to raise awareness about the Great Green Wall initiative. This lesson includes optional modifications for distance learning. Resources for use in Google Classroom are included.

### Snapshot

#### Engage

Using the Think-Pair-Share strategy, students hypothesize about color scale representation on an untitled map. Students learn about the driest place on Earth and about the Sahel region of North Africa.

#### Explore

Remaining with their Think-Pair-Share groups, students compare two maps to define desertification.

#### Explain

Working in groups, students read an article and create a chart explaining the causes and effects of desertification in the Sahel.

#### Extend

Students view the short video "Why Does Africa Want to Build a Great Green Wall?" to determine how Africa is responding to desertification and how both desertification and the Great Green Wall project represent human-environment interactions. Students craft tweets using the Tweet Up strategy to raise

awareness of desertification and the Great Green Wall initiative.

**Evaluate**

The Causes and Effects of Desertification chart from the Explain phase of the lesson and the Tweet Up responses from the Extend phase serve as evaluations. Optionally, students may also participate in a Gallery Walk strategy for additional assessment, during which they determine the relationship between different photos and desertification in the Sahel.

## Standards

*Next Generation Science Standards (Grades 6, 7, 8)*

**MS-PS3:** Energy

**LS4.C:** Adaptation

*Oklahoma Academic Standards (Social Studies Practices (7th Grade))*

**7.PS3:** Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems.

*Oklahoma Academic Standards (Social Studies Practices (7th Grade))*

**7.4.1:** Analyze the impact of climate events, weather patterns and natural disasters on human populations and the environment, resulting in forced migrations, scarcity of consumer goods, economic activities, and loss of life.

**7.4.2:** Explain how climate change is affecting environments and human populations.

**7.4.4:** Evaluate the effects of human modification of and adaptation to the natural environment through transformation caused by agriculture, the use of modern irrigation methods, industry, demand for energy, and urbanization.

*Oklahoma Academic Standards for Computer Science (Seventh Grade)*

**7.IM.CT:** Culture

## Attachments

- [Causes and Effects of Desertification \(Article\)—Desertification in the Sahel - Spanish.docx](#)
- [Causes and Effects of Desertification \(Article\)—Desertification in the Sahel - Spanish.pdf](#)
- [Causes and Effects of Desertification \(Article\)—Desertification in the Sahel.docx](#)
- [Causes and Effects of Desertification \(Article\)—Desertification in the Sahel.pdf](#)
- [Causes and Effects of Desertification \(Chart for Students\)—Desertification in the Sahel - Spanish.docx](#)
- [Causes and Effects of Desertification \(Chart for Students\)—Desertification in the Sahel - Spanish.pdf](#)
- [Causes and Effects of Desertification \(Chart for Students\)—Desertification in the Sahel.docx](#)
- [Causes and Effects of Desertification \(Chart for Students\)—Desertification in the Sahel.pdf](#)
- [Causes and Effects of Desertification \(Chart for Teachers\)—Desertification in the Sahel.docx](#)
- [Causes and Effects of Desertification \(Chart for Teachers\)—Desertification in the Sahel.pdf](#)
- [Desertification Think-Pair-Share—Desertification in the Sahel - Spanish.docx](#)
- [Desertification Think-Pair-Share—Desertification in the Sahel - Spanish.pdf](#)
- [Desertification Think-Pair-Share—Desertification in the Sahel.docx](#)
- [Desertification Think-Pair-Share—Desertification in the Sahel.pdf](#)
- [Gallery Walk Images—Desertification in the Sahel.pdf](#)
- [Gallery Walk Journal—Desertification in the Sahel - Spanish.docx](#)
- [Gallery Walk Journal—Desertification in the Sahel - Spanish.pdf](#)
- [Gallery Walk Journal—Desertification in the Sahel.docx](#)
- [Gallery Walk Journal—Desertification in the Sahel.pdf](#)
- [Lesson Slides—Desertification in the Sahel.pptx](#)
- [Tweet Up Templates—Desertification in the Sahel - Spanish.docx](#)
- [Tweet Up Templates—Desertification in the Sahel - Spanish.pdf](#)
- [Tweet Up Templates—Desertification in the Sahel.docx](#)
- [Tweet Up Templates—Desertification in the Sahel.pdf](#)
- [Video Notes Organizer—Desertification in the Sahel - Spanish.docx](#)
- [Video Notes Organizer—Desertification in the Sahel - Spanish.pdf](#)
- [Video Notes Organizer—Desertification in the Sahel.docx](#)
- [Video Notes Organizer—Desertification in the Sahel.pdf](#)

## Materials

<https://learn.k20center.ou.edu/lesson/376?rev=16860>

- Whiteboard space
- Desertification in the Sahel Lesson Slides (attached)
- Desertification Think-Pair-Share handout (attached, one per student)
- Causes and Effects of Desertification in the Sahel (Article) (attached, one per student)
- Causes and Effects of Desertification in the Sahel (Chart for Students) (attached, one per student)
- Causes and Effects of Desertification in the Sahel (Chart for Teachers) (attached)
- Highlighters (optional)
- Video Notes Organizer (attached, one per student)
- Tweet Up Template (attached, one per student or one per two students)
- Gallery Walk images (attached; optional)
- Gallery Walk Journal (attached, one per student; optional)

## Engage

Use the attached **Lesson Slides** to guide the lesson. Begin by displaying slide three. Hand each student a copy of the attached Desertification Think-Pair-Share chart. Using the [Think-Pair-Share](#) strategy, invite students to create individual hypotheses explaining what they think the various colors on the map might represent, based on their prior knowledge. Students should write their hypotheses in the "Think" column next to question one on the chart. Then, to further develop their hypotheses, ask students to pair up or place students in small groups. Ask students to share their hypotheses with their group, discuss, and come to a consensus about what they think the colors on the map represent. Students should write this consensus in the "Pair" column next to question one in their charts. After students have had time to do so, ask each student group to share their thoughts with the class. Lead a brief class discussion to foster understanding of each hypothesis. Then, ask students to summarize what the colors of the map might represent based on shared knowledge in the "Share" column next to question one.

### Teacher's Note: Instructional Strategy

If students struggle with their hypotheses, scaffold the lesson by drawing attention to the United States as a starting place. Students then might note that the southwest region of the United States (Nevada, Arizona, and New Mexico, for example) tends to be hot and dry. They can note the corresponding coloration on the map and apply this thinking to the rest of the world.

### Possible Student Responses

Students should eventually note that yellow and red shades on the map represent how dry or arid the land is. Green areas may be noted as more lush and fertile, whereas lighter yellow areas may be noted as deserts. The title of this map is "Global Distributions of Dryland Subtypes Based on the Aridity Index."

Once the class discussion has established that the yellow and red areas of the map represent the Earth's driest places, ask students where the most arid place on Earth appears to be. Students should note Northern Africa. Move to **slide 4** to read the lesson's essential questions: How do the interaction between humans and their environment impact both the people and the natural environment of the Sahel? What are the causes and effects of desertification in the Sahel? Why is Africa building a Great Green Wall?

To answer these questions, students will learn about an area in Africa called the Sahel, and investigate the interactions between those who live there and their environment.

### Optional Modification For Distance Learning

To make use of this lesson in an online or distance learning environment, sort students into pairs or small groups, and assign each group its own digital version of the Think-Pair-Share chart. Facilitate a class discussion in text or on video about what the areas of the map represent. [Download all attachments to use this lesson in Google Classroom.](#)

## Explore

Move to **slide 5**, which shows a map of the Sahara Desert and the Sahel region. Use this map to illustrate that the Sahara is the largest desert in the world; in fact, Sahara is the Arabic word for 'desert.' Explain that the Sahel is a semiarid grassland along the Sahara's southern edge. Sahel is the Arabic word for 'border,' as the Sahel region is the border between the Sahara Desert and the savannas to the South.

Move to **slide 6** and draw attention to the comparison between two maps: the map of the Sahel area on the left, and the "Vulnerability to Desertification" map on the right. Invite students to use these maps to hypothesize on what the term "desertification" might mean. Ask students to examine these two maps to determine what the term "desertification" might mean. Consider pointing out to students the title of the "Vulnerability to Desertification" map, and discussing with students the meaning of the word "vulnerability" (being at risk for harm, exposed to harm, or endangered). Ask students what they think the title of the second map, "Vulnerability to Desertification," means. Let the class discussion come to the conclusion that the map shows areas that are at risk of desertification. Next, ask students, given the two maps, what the relationship is between the Sahel and the concept of "desertification."

### Intended Student Responses

Seeing the maps side by side, students should note that the Sahel, or certain parts of it, is at high risk of desertification.

Ask students, given the class discussion so far, what the term "desertification" might mean. Students should record their individual hypothesis in the "Think" column next to question two in their Desertification Think-Pair-Share charts. Next, ask students to share their thoughts with their partners or groups. Allow time for each group to come to a consensus and record their answers in the "Pair" column of the chart next to question two. When ready, ask groups to share out their thoughts with the whole class. Students should summarize responses from the class in the "Share" column of the chart of the second question.

### Possible Student Response

Students may conclude that desertification is when land becomes a desert. If the Sahel is at risk of desertification, it could mean the Sahara desert is getting bigger.

Show **slide 7** and discuss the definition of desertification: desertification is the process by which land becomes more and more dry until it turns into desert. This is an advanced form of land degradation. Consider explaining to students that land degradation includes the deterioration or depletion of the soil, hence its inability to support vegetation. Ask students to record this definition in the bottom row of the Desertification Think-Pair-Share chart for reference during the rest of the lesson. Now that students have learned about desertification, the next activity will involve learning about the causes and effects of desertification in the Sahel.

### **Optional Modification For Distance Learning**

While this phase of the lesson does not require major modifications for online or distance learning (aside from digital distribution of the Think-Pair-Share chart, as stated above), you might consider applications like [VoiceThread](#) or [Flipgrid](#) for facilitating video discussions. [Download all attachments to use this lesson in Google Classroom.](#)

## Explain

Hand each student a copy of the attached **Causes and Effects of Desertification in the Sahel (Article)** reading. Working in their groups, students should use the [Categorical Highlighting](#) strategy to highlight causes of desertification in one color and the effects of desertification in a different color. If highlighters are not available, students can circle causes and underline effects. Remind students that the causes of desertification are the things that contribute to making desertification happen. Effects of desertification are the things that occur as a result of desertification.

Allow enough time for students to read and highlight. Once finished, pass out a copy of the attached Causes and Effects of Desertification in the Sahel (Chart for Students). Ask students to work with their groups to fill in the "Causes of Desertification" column with three to four causes of desertification found in the article, with a correlating effect in the "Effects of Desertification" column. Ask students to include a 1-2 sentence summary explaining each cause and effect they list.

Once this is finished, ask for volunteers from each group to share out answers, add missing information, and clarify any misconceptions.

### Possible Student Responses

For a list of causes, effects, and summaries students should cover, see the attached Causes and Effects of Desertification in the Sahel (Chart for Teachers).

### Optional Modification For Distance Learning

For online or distance learners, share digital versions of the article and chart for each group. Student groups can use shared Google Docs as a collaborative workspace, and can circle and underline causes and effects with Google Docs tools. [Download all attachments to use this lesson in Google Classroom.](#)



## Extend

Now that students have learned about the causes and effects of desertification, introduce the next activity, which involves learning about what steps are being taken in the Sahel to prevent it. Move to **slide 8** to show a visual of this effort, called the Great Green Wall.

Explain to students that the Great Green Wall was a project started in 2007 to combat the desertification of the Sahel. Consider visiting the [Great Green Wall website](#) for more information about this project to share with the class, or having students do so if time permits.

Pass out a copy of the attached **Video Notes Organizer** to each student, or ask students to use notebook paper to take notes. Move to **slide 9**, which features an introductory video about the Great Green Wall. Ask students to take notes on their organizer as they watch, answering the question on the hand out: Why is Africa building a Great Green Wall?

Play the video by clicking the link on the slide ([or this link](#)) or using the embedded version of the video below. Consider showing the video more than once if it would help students take notes. As an alternative, if students have access to their own device, they may view the video again on their own or in small groups.

### Embedded video

[https://www.youtube.com/watch?v=4xls7K\\_xFBQ](https://www.youtube.com/watch?v=4xls7K_xFBQ)

Once students have finished taking notes, ask them to share some of their takeaways with their groups. Then, ask for volunteers to share some of their answers with the class.

### Possible Student Responses

Student responses may note that the Great Green Wall is a wall of trees, grasses, and other vegetation intended to span across the Sahel region. The "wall" is built by planting trees and vegetation. The intent of the Great Green Wall is to reverse the effects of desertification, create new green areas of vegetation to help capture moisture in the ground, replenish depleted soil, and refill water wells. The project also creates jobs, increases student population, and keeps people from migrating away from the area as they are better able to provide for themselves and their communities.

Additionally, explain to students that, since its inception, the Great Green Wall initiative has evolved from simply planting a wall of trees to supporting a myriad of conservation strategies. This means planting more sustainable crops rather than cash crops, crop rotation methods, sustainable irrigation practices, grazing rotation methods, etc.

Another important aspect of the Great Green Wall project is raising public awareness. For the next activity, explain to students that the United Nations Convention to Combat Desertification has launched a public awareness campaign on the Great Green Wall, called "Growing a Public Wonder." This campaign aims to boost global awareness of the initiative in public spheres, policy debates, media, and cultural sectors, meant to inspire long-term public and private investment in the initiative. With this in mind, hand each student a copy of the attached **Tweet Up Templates** and move to **slide 10**. Invite students to write a tweet about the Great Green Wall using the [Tweet Up](#) strategy. Students should keep in mind the global awareness initiative and how they can inform the public about the causes and effects of desertification, and how the Great Green Wall combats it.

**Optional: Teacher Twitter Account**

To help students raise public awareness on this issue, consider creating a teacher twitter account and posting students' tweets.

**Optional Modification For Distance Learning**

For online or distance learners, you can have each student complete their Video Notes Organizer independently. Then, facilitate a discussion over students' takeaways from the video. For the Tweet Up activity, have students submit to an appropriate hashtag on Twitter or fill-in and submit their Tweet-Up Template. (It is recommended potential hashtags are searched before assigning to students.)

[Download all attachments to use this lesson in Google Classroom.](#)

# Evaluate

Students' Causes and Effects of Desertification charts and Tweet Up responses can be used as assessments for this lesson. Additionally, see the optional assessment below featuring the [Gallery Walk](#) strategy. This optional assessment involves students participating in a gallery walk to view pictures related to desertification in the Sahel and explain the details of these relationships in their own words.

## Teacher's Note: Prep

Before the gallery walk, open the attached **Gallery Walk Images** and choose which photos you would like students to see. Print those photos and hang them at different points throughout the room. Number the photos.

Pass out a copy of the attached **Gallery Walk Journal** to each student. To start the gallery walk, divide students into groups based on the number of photos hanging in the room. There should be one group starting at each photo. Give students three minutes at each photo to record in their journals how the photo relates to desertification in the Sahel. After one complete round has been made, and every group has visited every gallery photo, have groups return to their first photo. Ask a representative from each group explain how their photo is related to desertification in the Sahel with the class. Students can turn in their charts as a summative assessment.

## Optional Modification For Distance Learning

Gallery Walk/Carousel: If conducting this lesson in an online or distance learning environment, you may choose to omit the Gallery Walk activity. You can substitute a peer review activity, with a website such as [VoiceThread](#). With VoiceThread, you can upload students' posters to the site; then, students can choose whether they would like to make a quick video, a voice memo, or a written note to give feedback on other students' posters. [Download all attachments to use this lesson in Google Classroom.](#)

## Resources

- BBC News. (2017, September 26). Why is africa building a great green wall? BBC News. Retrieved November 25, 2019, from [https://www.youtube.com/watch?v=4xls7K\\_xFBQ](https://www.youtube.com/watch?v=4xls7K_xFBQ)
- Great Green Wall. (n.d.). Retrieved from <https://www.greatgreenwall.org>
- Great Green Wall. (n.d.). Growing a world wonder. Retrieved from <https://www.greatgreenwall.org/about-great-green-wall>
- K20 Center. (n.d.). Categorical highlighting. Strategies. Retrieved from <https://learn.k20center.ou.edu/strategy/fc74060730ea745c8c4f356aa204c85d>
- K20 Center. (n.d.). Gallery walk / carousel. Strategies. Retrieved from <https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f505a54d>
- K20 Center. (n.d.). Think-pair-share. Strategies. Retrieved from <https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f5064b49>
- K20 Center. (n.d.). Tweet up. Strategies. Retrieved from <https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f505fb94>
- United Nations Convention to Combat Desertification. (n.d.). The great green wall initiative. Retrieved from <https://www.unccd.int/actions/great-green-wall-initiative>