

# Desert Deception: Believe It or Not?

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**Grade Level** 6  
**Duration** 2 class periods

## National Standards

### GEOGRAPHY STANDARDS

#### Essential Element: One:

#### The World in Spatial Terms

1. How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

#### Essential Element: Physical Systems

8. The characteristics and distribution of ecosystems and biomes on Earth's surface

### NEXT GENERATION OF SCIENCE STANDARDS

#### MS. Weather and Climate

**MS-ESS2-6** Weather and climate are influenced by interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography, all of which can affect oceanic and atmospheric flow patterns.

## Common Core Standards (Arizona's College and Career Ready Standards)

### ELA COMMON CORE (Grades K-5) or Reading Standards for 6-8 for Literacy in History/Social Studies

#### Integration of Knowledge and Ideas

6-8.RH.7 Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

6-8.RH.8 Distinguish among fact, opinion, and reasoned judgment in a text.

### 6-8 Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects

#### Text Types and Purposes

**6-8.WHST.1** Write arguments focused on *discipline-specific content*.

a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.

b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.

c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.

d. Establish and maintain a formal style.

e. Provide a concluding statement or section that follows from and supports the argument presented.

#### Production and Distribution of Writing

**6-8.WHST.4** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

a. Produce clear and coherent functional writing (e.g., formal letters, envelopes, procedures, labels, timelines, graphs/tables, experiments, maps, captions, charts, diagrams) in which the development, organization, and style are appropriate.

## MATHEMATICS COMMON CORE

## Other Arizona Standards

### SOCIAL STUDIES Grade 6

#### Strand 2 World History

#### Concept 2 Early Civilizations

PO2. Determine how the following factors influenced groups of people to develop into civilizations in Egypt, India, Mesopotamia and China:  
D. geographic factors

#### Strand 4 Geography Concept 1: The World in Spatial Terms

PO 3. Interpret maps, charts, and geographic databases using geographic information.  
PO 5. Interpret thematic maps, graphs, charts, and databases depicting various aspects of world regions.

**STANDARDS**

**Statistics and Probability**

6M.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

<b>SIOP Elements</b>		
<p><b>Preparation</b>                      Adapting content                      Linking to background  <b>Linking to past learning</b>                      Strategies used</p>	<p><b>Scaffolding</b>  <b>Modeling</b>                      Guided practice                      Independent practice                      Comprehensible input</p>	<p><b>Grouping Option</b>                      Whole class  <b>Small groups</b>  <b>Partners</b>  <b>Independent</b></p>
<p><b>Integrating Processes</b>                      Reading                      Writing                      Speaking                      Listening</p>	<p><b>Application</b>                      Hands on                      Meaningful                      Linked to objectives  <b>Promotes engagement</b></p>	<p><b>Assessment</b>                      Individual  <b>Group</b>  <b>Written</b>                      Oral</p>

**TESOL Standard(s)**

**ESL: English for Content**

**Through The Use Of ESL Methodologies, The Student Will:**

**EFC-A. Create, read, and interpret visual information relating to science, social studies, and math.**

- A1. Draw and label maps.
- A2. Construct and interpret graphs.
- A3. Create number lines.
- A4. Create charts to organize information.
- A5. Create visuals to present information.

**EFC-C. Compose in a variety of forms.**

C1. Use Math, Social Studies, and Science target vocabulary.

**EFC-D. Communicate clearly using math, science, and social studies target vocabulary.**

- D1. Prepare and present oral reports.
- D2. Participate in small and large groups.

**EFC-E. Comprehend reading materials.**

- E1. Read a variety of Math, Science, and Social Studies materials.
- E3. Use new English vocabulary.
- E4. Distinguish between fact and opinion.
- E6. Scan material for relevant information.

## Arizona English Language Proficiency Standards

### Stage IV

#### Basic Comprehension of Oral Communications-

**Standard 1: The student will listen actively to the ideas of others in order to acquire new knowledge.**

B-9: determining main ideas and supporting details from content area presentations and discussions.

**Standard 2: The student will express orally his or her own thinking and ideas. The student will communicate orally by:**

#### Language

**Standard 2: The student will acquire English language vocabulary and use it in relevant contexts. The student will demonstrate knowledge of vocabulary by:**

B-14: using reference materials, print and/or electronic, to identify meanings, spelling, pronunciation, and usage of words.

#### Reading

**Standard 4: The student will analyze text for expression, enjoyment, and response to other related content areas. The student will demonstrate knowledge of reading comprehension by:**

B-4: answering who, what, where, when, why, which and how questions about text.

B-8: summarizing the main idea and supporting details from text.

B-21: applying understanding of content area vocabulary within math, science and social studies texts.

B-28: interpreting information in functional documents (*e.g., maps, schedules, letters, graphic organizers*) for a specific purpose.

#### Writing

**Standard 1: The student will express his or her thinking and ideas in a variety of writing genres.**

B-4: writing a paragraph based on research using topic sentences, main ideas, relevant facts, details, and concluding statements.

## Overview

Deserts cover about one-fifth of our Earth. A desert is defined as an arid region that receives less than 10 inches of precipitation per year. The desert biome is unique with plants and animals that can survive with very little water. Traditionally, deserts have had sparse settlements but now there are some very large American cities that are in desert regions such as Las Vegas, Nevada, and Phoenix, Arizona.

## Purpose

In this lesson students create a climograph and learn how deserts can be found in various parts of the world. They will also learn about Hadley Cells and why there are deserts.

## Key Vocabulary

**climograph:** a graph that shows average precipitation and temperature for a place

**desert:** land with little rainfall

**number line:** a line with equal spaces and the points equal the numbers shown

**dot plot:** chart of data using circles to mark the points of data

**histogram:** a bar graph with no spaces between bars

**line graph:** a chart that connects data points with a line

**box plot:** a way to graph data through quartiles

**data:** numerical information

## Materials

- Computer, Internet access and projector
- The World Map
- Desert Map Work and Answer Key
- Graph paper
- Markers or highlighter pens
- Whiteboards and dry erase markers



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- Document camera for showing group graphs (optional)
- Vocabulary Cards
- Vocabulary Test and Answer Key

### Objectives

The student will be able to:

- Identify desert climates along similar latitudinal coordinates.
- Identify the appropriate graph to use with a set of data
- Create a graph to properly illustrate the data set provided.

### Procedures

*Prerequisite Skills: Students can locate places by latitude and longitude. Students know how to make bar and line graphs.*

#### SESSION ONE

##### Engage:

1. Open the lesson by exploring the website: <http://discoveringegypt.com/pyramids-temples-of-egypt/pyramids-of-giza/> to learn about the desert climate of Giza, Egypt. **(Integrating Processes: Reading)**
2. As the website is explored, have students write at least 5 descriptions of the Egyptian desert using their senses. **(Application: Promotes engagement)** Have students share their responses and record them on the whiteboard.
3. Then ask, "Are deserts around the world all the same or are they different?"

##### Explore:

4. Distribute the World Map and the Desert Map worksheet. **(Integrating Processes: Writing)** Have students locate the five desert cities by latitude and longitude and give each group a city to graph. **(Grouping option: Small groups)** Before students begin, model how to make a climograph by using the following information for Antarctica (another desert—believe it or not). **(Scaffolding: Modeling)**

#### Average Precipitation in Inches

Jan	.7	July	.5
Feb	.8	Aug	.5
Mar	.6	Sept	.4
Apr	.6	Oct	.5
May	.9	Nov	.5
June	.9	Dec	.4

#### Average Temperature in Fahrenheit

Jan	30	July	-21
Feb	19	Aug	-23
Mar	4	Sept	-17
Apr	-2	Oct	-9
May	-6	Nov	11
June	-4	Dec	22

5. Explain how the graphs will be scored.

##### Explain:

6. When groups have completed their graph, **(Preparation: Linking to Past Learning)** have those who worked on one city gather and share to make sure their graphs are correct. Then have the one person from this larger group share orally the graph of his/her city with the class. **(Integrating Processes: Speaking and Listening)**

#### SESSION TWO

7. Have students return to their small groups and complete the questions and essay either individually or as a group. **(Integrating Processes: Writing) (Assessment: Group or Individual, Written)**

##### Elaborate:

8. Show Why Does the Earth Have Deserts? <https://www.youtube.com/watch?v=T6Us1sPXBfA> (2 minutes) You may want to show it more than once. **(Integrating Processes: Listening)**
9. Have students draw a sketch and write out the steps so they can remember the concept of Hadley Cells and the creation of deserts. Now return their World Map from Session One and have them color in the deserts of the world using an atlas or reference map. Add a symbol for desert into their legend with their five dots of color. **(Grouping option: Individual)**

##### Evaluate:

10. Pair up students. **(Grouping option: partners)** Introduce the idea that mathematicians use a variety of graphs dependent on the kind of data they wish to display. Hand out vocabulary cards to students. Have them discuss which ones of these kinds of graphs would work for showing climate information such as precipitation and temperatures.

### Assessment



## Desert Deception: Believe it or Not!

### Science

The sketch and the written steps regarding Hadley Cells and the creation of deserts can be graded. Mastery will be seen as all steps given in correct order and an accurate drawing.

### Mathematics, Social Studies, and Reading

Group climographs can be graded using the scoring guide provided on the worksheet. Mastery will be considered 40 points or higher.

### Writing, Social Studies, and Reading

The questions and the essay question can be graded for accuracy according to points given. Mastery will be considered 80% or higher.

Vocabulary Test can be given. Mastery will be considered 80% or higher.

### Social Studies

Map work can be graded for accuracy. Mastery will be considered 80% or higher.

## Extensions

- Expand on the creation of different kinds of graphs and their uses in other lessons.

- Connect through a science experiment simulating Hadley Cells.
- Research rainforest regions with other data sets and do similar activities.

## Sources

### Latitude and Longitude finder

[http://www.worldatlas.com/aatlas/latitude\\_and\\_longitude\\_finder.htm](http://www.worldatlas.com/aatlas/latitude_and_longitude_finder.htm)

### World Map from Arizona Geographic Alliance

<http://geoalliance.asu.edu/azga/>

### Rainfall and Temperature Information

<http://www.weatherbase.com>

### Why Does the Earth Have Deserts?

<https://www.youtube.com/watch?v=T6Us1sPXBfA>

### Map of Main Deserts of the World

[http://www.armystudyguide.com/content/army\\_board\\_study\\_guide\\_topics/desert\\_operations/map-of-the-main-desert-ar.shtml](http://www.armystudyguide.com/content/army_board_study_guide_topics/desert_operations/map-of-the-main-desert-ar.shtml)



Education Studies Department  
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