

Inferno Arizona

Author	Amethyst Hinton Sainz
Grade Level	7
Duration	3 class periods

Adapted from: Extreme Event: Building Disaster Resistance,
Koshland Museum of Science, Washington, DC.

National Standards	AZ Standards	Arizona Social studies Standards
GEOGRAPHY STANDARDS Element 4: Human Systems 11. The patterns and networks of economic interdependence on the Earth's surface 13. How the forces of cooperation and conflict among people influence the division and control of Earth's surface Element 5: Environment and Society 14. How human actions modify the physical environment 16. The changes that occur in the meaning, use, distribution, and importance of resources Essential Element 6: The Uses of Geography 18. How to apply geography to interpret the present and plan for the future	ELA Writing Text Types and Purposes 7.W.1 Write arguments to support claims with clear reasons and relevant evidence. a. Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), 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. SCIENCE STANDARDS U1: Scientists explain phenomena using evidence obtained from observations and or scientific investigations. Evidence may lead to developing models and or theories to make sense of phenomena. As new evidence is discovered, models and theories can be revised. U2: The knowledge produced by science is used in engineering and technologies to solve problems and/or create products. U3: Applications of science often have both positive and negative ethical, social, economic, and/or political implications.	GEOGRAPHY Examining human population and movement helps individuals understand past, present, and future conditions on Earth's surface. 7.G3.3 Evaluate the influences of long-term, human-induced environmental change on spatial patterns and how it may cause conflict and promote cooperation. CIVICS Process, rules, and laws direct how individuals are governed and how society addresses problems. 7.C4.3 Analyze the purpose, process, implementation, and consequences of decision making and public policies in multiple settings. 7.C4.4 Explain challenges people face and opportunities they create in addressing local, regional, and global problems at various times and places. Apply a range of deliberative and democratic procedures to make decisions and act in local, regional, and global communities. ECONOMICS By applying economic reasoning, individuals

seek to understand the decisions of people, groups, and societies.

7.E2.1 Explain how economic decisions affect the well-being of individuals, businesses, and society.

DISCIPLINARY SKILLS AND PROCESSES

Thinking within the discipline involves the ability to analyze relationships among causes and effects and to create and support arguments using relevant evidence.

7.SP4.3 Organize applicable evidence into a coherent argument.

7.SP4.4 Compare the central arguments in multiple secondary sources on a related topic using multiple types of sources.

SIOP Elements

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

Arizona English Language Proficiency Standards

Stage IV

Basic

Writing

Standard 1: The student will express his or her thinking and ideas in a variety of writing genres, as demonstrated by:

B-3: taking notes using a teacher selected and student created graphic organizer or cloze notes.

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

Comprehension of Oral Communications

Standard 1: The student will demonstrate understanding of oral communications by:

B-6: following multi-step instructions/directions, procedures and processes which contain specific academic content vocabulary.

Standard 2: The student will communicate orally by

B-6: making predictions about academic content using complete sentences.

Overview

Each year wildfires burn through portions of Arizona and other states, and often threaten communities. These fires require immediate and complex responses from many different groups. The knowledge, resources, and strategies required to limit the risks of fire damage to both human and biological habitats raise critical questions for students to consider from a variety of perspectives.

Purpose

In this lesson, the students will learn about the 2002 Rodeo-Chediski fire in Arizona. The students will learn information about the fire, the physical geography of the area, the habitats threatened by the fire, the communities in the area of the fire, as well as some of the strategies used to fight the fire. Students will participate in a simulation of fighting the wildfire. Afterward, they will reflect on what policies should be made to best prepare for the incidence of wildfire in Arizona and reduce the risks to both human and wildlife habitats. This lesson includes strategies for teaching diverse learners.

Key Vocabulary

agency: a government department that is responsible for a particular activity or area

cooperation: people working together

competition: a struggle by two or more groups who want to own or control the same thing

evacuate: to move people away from danger

evacuee: a person who has to leave because of danger

federal: related to the national government

fuel: anything that the fire can burn

resource: a supply of something useful (such as money or people) and can be used when it is needed

Materials

- Extreme Natural Events photos such as the slideshow at National Geographic site: <https://www.nationalgeographic.org/activity/extreme-natural-events/>
- Inferno Arizona PowerPoint
- Notes Organizer
- Colored pencils
- Pass-Around Cards (copied on different colors of paper and in color if possible)
- Note Taking Sheet for Pass-Around Cards
- Vocabulary Cards
- Vocabulary Test and Answer Key
- Simulation Teacher Script—Phase One
- Simulation Teacher Script—Phase Two
- Role Cards (copied on different colors of paper)
- Simulation Worksheet
- Table Tents - Role Types (copied on different colors of paper, same colors as Role Cards)
- Resource Cards (copied on different colors of paper, same colors as Role Cards)
- Phase 2 Scenario Sheets
- Notes Organizer Rubric
- Written Proposal Paragraph Rubric
- Internet Access
- Computer and Projector

Objectives

The student will be able to:

1. Identify appropriate resources to respond to a wildfire.
2. Reflect on the simulation and explain how cooperation and competition for resources affect the ability of a community to respond to a disaster such as wildfire.
2. Write a proposal that would help an Arizona community prepare for future fires, based on their knowledge of the Rodeo-Chediski fire.

Procedures

Prerequisite Knowledge

Students should be familiar with how forest fires start and spread, and should have a general idea of the

types of resources and strategies used to fight wildfires.

Background Knowledge

The teacher should have knowledge of the Rodeo-Chediski fire. This Wikipedia page is short and very useful. <http://bit.ly/29WhA3T>

Before the Lesson

The Inferno Arizona PowerPoint will guide the instruction. You will want to look through it before teaching the lesson.

SESSION ONE

Engage

- Show Slides 1-2. Discuss images of extreme natural events using the slideshow found at National Geographic and linked in the Inferno Arizona PowerPoint. Add the names of various kinds of natural events (earthquake, flood, etc.) to a word wall.
- Show Slide 3. Ask students what kind of extreme natural events would be likely to happen in their city/town/state and brainstorm a list.
- Show Slide 4. Have students work with partners to brainstorm a list of possible responses to one of the events the class identified. **(Grouping Option: Partners)**
- Share out. If one partner wrote the notes, the other partner presents ideas. Record student ideas on chart paper or on a PowerPoint slide for future reference.

Explore

- Students should have partners or trios; these can be the same partners as the “Engage” activity, as long as they are seated near each other.
- Show Slide 5. Introduce the activity by explaining that students will be learning a little bit about the Rodeo-Chediski fire and other information that will help them understand the simulation the next session.
- Show Slide 6. Hand out the Notes Organizer. Show students the maps of Arizona using the storymap linked in the PowerPoint. Point out the Mogollon Rim, places of higher elevation, and the areas of Tonto National Forest, Apache Sitgreaves National Forest and Fort Apache Reservation. Also point out the locations of the five communities featured in the simulation (Phoenix, Show Low, Heber-Overgaard, Springerville and Whiteriver). Students should add details to the Arizona map on the notes organizer. It is your choice how much detail you think they should have. Colored pencils might be a good idea here.
- Distribute the Note Taking Sheet for Pass-Around Cards and the Pass-around Cards. There are six

different cards so you will most likely need more than one copy of each card for passing.

- Ask one group member to read the Pass-Around Cards aloud to their group and stress that together they will choose key ideas to write on the Note Taking Sheet. When finished, they should pass the card on to the next group until all cards are read and written about. **(Grouping: Small group, Integrated Processes: Reading, Listening, Writing)**

- Have each student quickly come to the board and write down one important or interesting fact that he or she learned. After students are seated, if you have time, review the board together for a few minutes. **(Assessment: Individual)**

SESSION TWO

Explain

- Post or pass out the vocabulary cards. As bellwork, have students discuss the words and quiz each other.
- Show Slide 6. Follow the Simulation Teacher Script—Phase One.
- Show Slide 7. After Phase 1, follow Simulation Teacher Script—Phase Two. **(Application: Promotes Engagement)**

SESSION 3

Elaborate:

- Show Slide 8. Begin the day by reviewing the vocabulary. Help students make connections to the material in the simulation. **(Preparation: Linking to Previous Learning)**
- Have students stand and mix around the room to some music. Stop the music and have students share one thought from their Section 3 of the Simulation Worksheet with a person near them. Repeat once or twice more. **(Application: Promotes Engagement)**
- Show Slides 9-12. Share with students some information about the actual aftermath of the fire.
- Review vocabulary and clarify any misconceptions.

Evaluate:

- Show Slide 13. Tell students that the communities learned many lessons from the Rodeo-Chediski fire but that right now they will put themselves in the place of a community leader deciding what the community should do to prepare for the next fire. Share the writing prompt on the slide. Give students time to think and individually write. Students should write an organized paragraph proposing at least one important step and giving evidence from the various worksheets completed

during this lesson to support the proposal. **(Grouping Option: Independent)**

b. Show Slide 14 and discuss the rubric so students understand how the writing assignment will be graded. **(Assessment: Written, Individual)**

c. Have students take the vocabulary quiz.

(Assessment: Written, Individual)

d. If there is time, revisit the student ideas from the “Engage” activity. Ask students, now that they have experienced a simulation, what they would add to their ideas to prepare for an extreme natural event in their own city.

Assessment

Vocabulary can be graded with the Vocabulary Quiz. Mastery will be considered 6/8 correct.

The Notes Organizer completed in Session One and the Simulation Worksheet in Session Two can be graded using the Notes Organizer Rubric. Mastery will be considered 18 points or higher.

The Written Proposal Paragraph can be graded using the Written Proposal Paragraphs Rubric. Mastery will be considered 53 points or higher.

Extensions

- It would make sense to move from this into an investigation of whether or not forest thinning, controlled burns, etc. are beneficial to forests.
- Create a fire prevention poster, Youtube video or audio podcast.
- Research species whose habitat was destroyed or threatened during the fire. What were the effects of this fire on these species?
- Bring in a Forest Service or National Park ranger and interview him or her as a class about wildfires or other related topics.
- Research the likelihood of the extreme natural events that students identified for their own community.
- Research students' local disaster preparedness plans.

Sources

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