

COURSE TITLE: American History
GRADE LEVEL: Second Grade
UNIT: Limestone

Abstract:

This unit explores how limestone has shaped communities. Students explore the way in which a community, such as Bedford, Indiana relied on the limestone industry as a source of employment, while other communities such as Mammoth Cave, Kentucky depended on preserving limestone and tourism to support their people. Students explore the process of limestone mining and determine why architects consider limestone a desirable building material. Students also compare and contrast the careers associated with limestone mining and preservation.

Focus Questions:

1. Why is limestone a valuable building material?
2. Why do some communities rely on mining limestone for revenue while others rely on preserving it?

Benchmarks	Assessment Tasks	Key Concepts
<p>Compare and contrast the geographic features of Bedford, Indiana and Mammoth Cave, Kentucky and determine why one community excavated limestone while the other preserved it. (2.1.1; 2.1.2; 2.1.7; 2.3.1; 2.3.3; 2.3.5; 2.3.8; 2.4.1; 2.4.2)</p> <p>Analyze and describe why limestone is a valuable building material, research nationally recognized Bedford limestone structures in the US and organize them into a timeline. (2.1.5; 2.1.7; 2.4.1; 2.4.2; 2.4.3; 2.4.7)</p> <p>Analyze and describe the various careers found in the limestone industry and describe the working conditions associated with each. (2.2.4; 2.4.1; 2.4.3; 2.4.5; 2.4.7)</p> <p>Visit the quarry where limestone was mined for the Empire State Building and determine whether or not the site should be preserved as historic (2.1.2; 2.1.7; 2.2.4; 2.4.1; 2.4.2)</p> <p>Research inactive quarries in</p>	<p>Compare and contrast the geographic features of Bedford, Indiana and Mammoth Cave, Kentucky on a map and create a compare and contrast list of reasons why each community is ideal for limestone mining or preservation. (2.1.1; 2.1.2; 2.1.7; 2.3.1; 2.3.3; 2.3.5; 2.3.8; 2.4.1; 2.4.2)</p> <p>Investigate and complete a mini-history about an assigned historically significant limestone structure found around the US that was created with Bedford limestone and add it in its proper chronological order to the class timeline. (2.1.5; 2.1.7; 2.4.1; 2.4.2; 2.4.3; 2.4.7)</p> <p>Research careers associated with the process of limestone mining, transportation, and architecture and natural preservation, select the one they most relate to and write letters to a professional who holds this job. (2.2.4; 2.4.1; 2.4.3; 2.4.5; 2.4.7)</p> <p>Record evidence of a quarry’s historical value, determine whether it should be preserved and explain the values in conflict in a journal entry. (2.1.2; 2.1.7;</p>	<p>Preservation Architecture Recreation Geography Community Resources</p>

Bloomington and use evidence to debate whether or not they should be cleaned up or preserved for their historical qualities. (2.1.2; 2.1.7; 2.2.4; 2.4.1; 2.4.2)	2.2.4; 2.4.1; 2.4.2) Research inactive quarries in Bloomington, choose a side and present evidence in a structured debate. (2.1.2; 2.1.7; 2.2.4; 2.4.1; 2.4.2)	
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Instructional Resources

<http://www.nps.gov/history/preservation.htm>

<http://www.nps.gov/macal/learn/historyculture/index.htm>

<http://www.nps.gov/macal/learn/nature/index.htm>

<https://www.indianalimestonecompany.com/our-story/>

<http://www.bedfordlimestone.net/index.php?page=about>

<http://academic.brooklyn.cuny.edu/geology/powell/613webpage/NYCbuilding/IndianaLimestone/IndianaLimestone.htm>

<https://igs.indiana.edu/MineralResources/Limestone.cfm>

<http://mcpl.info/sites/default/files/Timeline.pdf>

<http://quarriesandbeyond.org/states/in/indiana.html>

Mammoth Cave and the Kentucky Cave Region: Images of America- Bob & Judy Thompson

The Kentucky Cave Wars: The Century that Shaped Mammoth Cave National Park- David Randolph Kem

59 Illustrated National Parks: Celebrating 100 Years of Wilderness and Wonder- Joel Anderson & Nathan Anderson

Catalog of Lessons

Lesson 1: Comparing Limestone Communities

In this lesson, students examine the Bedford, Indiana and Mammoth Cave, Kentucky communities. Students begin class with a discussion and answer warm up questions: *Does anyone know where limestone comes from-where can limestone be found? What do we use limestone for? Why might we preserve limestone in one area but mine it in another?* Then, students analyze physical maps and compare and contrast the geographic features of these two communities. Students work in groups to create compare and contrast lists and present their findings to the class.

Lesson 2: Bedford Beauty: Examining the Qualities of Indiana Limestone & Historically Significant Structures

In this lesson, students analyze why limestone is a valuable building material. During brief direct instruction, students examine the three key qualities of Indiana limestone that sets it apart from other types: *it is more durable than typical limestone, it can be cut into very large blocks, is easy to carve and can hold fine detail.* Students then work in groups of 3-4 to research an assigned national structure made from Bedford limestone. After orally presenting their information to the class, students then place their structure on a class timeline.

Lesson 3: Building a Career: Jobs in the Limestone Industry

In this lesson, students travel individually from station to station to analyze the various careers found in the limestone industry and describe the working conditions associated with each. Each

student explores and records information concerning miners, architects, construction workers and preservation specialists/ park rangers. Students then select the career that most interests them and write a letter to an individual in one of these professions.

Lesson 4: Questioning History: Examining a Historic Limestone Quarry

In this two-day lesson, students travel to the quarry where the rock for the Empire State Building was quarried. Students record their observations of the area in order to prepare for a discussion on day two. On the next day, students work in small groups to share their evidence and argue whether or not this site should be preserved and recognized as a historic sight or that it should be mined. Student groups report their findings to the class and the teacher records their responses on a large sheet of paper. Students then write a journal entry that answers the following questions: *What are the values in conflict- why is it beneficial to hear all points of view during a disagreement? Should we protect historically significant Indiana limestone? What can you do as a citizen to ensure that Indiana limestone is protected?*

Lesson 5: Altering the Environment: Determining the Fate of Inactive Quarries

In the final lesson of this unit, students research inactive quarries in Bloomington, such as Furst Quarry, and debate whether or not the land should be cleaned up or preserved as a historic site due to its connection to our state's history with the limestone industry. Students will work in groups of 3-4 to compose a list of evidence-based reasons arguing for one side or the other. Students then report out in a structured debate while the teacher records their responses on a t-chart.

Assessment Task 1:

GRADE LEVEL: Second Grade

UNIT: Limestone

Abstract

In this task, students compare and contrast the geographic features of Bedford, Indiana and Mammoth Cave, Kentucky on a map and create a compare and contrast list of reasons why each community is ideal for limestone mining or preservation.

Prompt

In groups of 3-4, students compare and contrast physical maps of Bedford and Mammoth Cave in order to create a list comparing and contrasting reasons why one community is more suited to mining limestone than the other.

Directions

Students begin class with a discussion and answer warm up questions: *Does anyone know where limestone comes from-where can limestone be found? What do we use limestone for? Why might we preserve limestone in one area but mine it in another?* Then, students analyze physical maps and compare and contrast the geographic features of these two communities. Students work in groups to create compare and contrast lists and present their findings to the class.

Procedure

Lead students in large group discussion then, break students off into groups of 3-4. Provide students with 15-20 minutes of time to analyze maps and create their compare and contrast lists. Use remaining class time to have students orally present their findings. Students' compare and contrast lists, as well as maps, will be posted at their local library.

Scoring Rubric

Benchmark	1	2	3	4
Compare and contrast the geographic features of Bedford, Indiana and Mammoth Cave, Kentucky and determine why one community excavated limestone while the other preserved it. (2.1.1; 2.1.2; 2.1.7; 2.3.1; 2.3.3; 2.3.5; 2.3.8; 2.4.1; 2.4.2)	Student list fails to meet the minimum requirements.	Student list provides 3 points of comparison and difference between Bedford, IN limestone and the type found at Mammoth Cave, KY	Student list provides 4 points of comparison and difference between Bedford, IN limestone and the type found at Mammoth Cave, KY.	Student list provides 5 or more points of comparison and difference between Bedford, IN limestone and the type found at Mammoth Cave, KY.

Assessment Task 2:

GRADE LEVEL: Second Grade

UNIT: Limestone

Abstract

In Task 2, students investigate and complete a mini-history about an assigned historically significant limestone structure found around the US that was created with Bedford limestone and add it in its proper chronological order to the class timeline.

Prompt

In groups of 3-4, students analyze an assigned building of historical significance made of limestone, present their findings to the class and determine its correct location on a timeline.

Directions

Students begin class analyzing why limestone is a valuable building material. During brief direct instruction, explain to students why Indiana limestone is uniquely useful for building. Identify the three key qualities of Indiana limestone that sets it apart from other types: *it is more durable than typical limestone, it can be cut into very large blocks, is easy to carve and can hold fine detail.* Then, break students into groups of 3-4 to research an assigned national structure made from Bedford limestone. After orally presenting their information to the class, students then place their structure on a class timeline.

Procedure

Provide brief direct instruction concerning the value and practicality of Bedford limestone in construction. Divide students into groups of 3-4 and assign each group a historic limestone building to analyze. Provide 15-20 minutes of time for research, and then have students present their findings to the class and organize their building on the class timeline. Students' timeline will be displayed at their local library.

Scoring Rubric

Benchmark	1	2	3	4
Analyze and describe why limestone is a valuable building material, research nationally recognized Bedford limestone structures in the US and organize them into a timeline. (2.1.5; 2.1.7; 2.4.1; 2.4.2; 2.4.3; 2.4.7)	Student does not meet minimum requirements, may contain inaccurate facts about their assigned building or incorrectly position their structure on the class timeline.	Student includes 3 facts about their assigned building that reflect the usefulness of Bedford limestone in construction and correctly places their building on the time line.	Student includes 4 facts about their assigned building that reflect the usefulness of Bedford limestone in construction and correctly places their building on the time line.	Student includes 5 or more facts about their assigned building that reflect the usefulness of Bedford limestone in construction and correctly places their building on the time line.

Assessment Task 3

GRADE LEVEL: Second Grade

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Abstract

For this task, students research careers associated with the process of limestone mining, transportation, architecture and natural preservation. Then, they select the one of these careers they most relate to and write letters to a professional who holds this position in order to thank them for their work and ask more questions.

Prompt

Students travel from station to station to learn about careers associated with limestone mining and preservation. After choosing a career that appeals to them the most, students write a letter to a professional who works this job to thank them and ask additional questions.

Directions

Students travel individually from station to station to analyze the various careers found in the limestone industry and describe the working conditions associated with each. Each student explores and records information concerning miners, architects, construction workers and preservation specialists/ park rangers. Students then select the career that most interests them and write a letter to an individual in one of these professions.

Procedure

Provide students with 5 minutes to record information from each station. Then, as a class, have students share which limestone related profession interested them most and why. Provide 20-30 minutes of class time for students write letters to an individual who works in the limestone profession they are most interested in. Student letters will be sent to the various local professionals they correspond with.

Scoring Rubric

Benchmark	1	2	3	4
Analyze and describe why limestone is a valuable building material, research nationally recognized Bedford limestone structures in the US and organize them into a timeline. (2.1.5; 2.1.7; 2.4.1; 2.4.2; 2.4.3; 2.4.7)	Student does not meet minimum requirements, may contain inaccurate facts a limestone profession, does not ask any questions.	Student's letter deviates from proper format, shares 3 facts about a specific limestone profession and asks 3 questions.	Student's letter follows proper format, shares 4 facts about a specific limestone profession and asks 4 questions.	Student's letter follows proper format, shares 5 or more facts about a specific limestone profession and asks 5 or more questions.

Assessment Task 4

GRADE LEVEL: Second Grade

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Abstract

In task 4, students visit the quarry that supplied limestone for the construction of the Empire State Building, record evidence of its historical value and determine whether it should be preserved in a journal entry.

Prompt

During this two-day lesson, students take a field trip to the historically significant quarry and write down their observations in field notes, then engage in a discussion concerning the historicity of the area and the importance of conflict.

Directions

On day one: During the field trip to the quarry, encourage students to use the following questions to guide them as they record their observations in their field notes: *Some people believe this quarry is historically important and that it should be preserved- why is that? What makes this quarry historically significant? Should we preserve this quarry- how might that impact this community? Why might some people argue for continued mining- if we stop mining do you think that would help or hurt the community?*

On day two: Students work in small groups to share their evidence and argue whether or not this site should be preserved and recognized as a historic sight or that it should be mined. Student groups report their findings to the class and the teacher records their responses on a large sheet of paper. Students then work individually to write a journal entry that answers the following questions: *What are the values in conflict- why is it beneficial to hear all points of view during a disagreement? Should we protect historically significant Indiana limestone? What can you do as a citizen to ensure that Indiana limestone is protected?*

Procedure

Provide time for students to record observations in their field notes during the field trip. On day two, provide 15-20 minutes for students to share their notes in groups of 3-4 and lead large group discussion. Provide the rest of class time for students to write their journal entries. Students' journals will be shared with the Indiana Geological Society.

Scoring Rubric

Benchmark	1	2	3	4
Visit the quarry where limestone was mined for the Empire State Building and determine whether or not the site should be preserved as historic (2.1.2; 2.1.7; 2.2.4; 2.4.1; 2.4.2)	Journal answers no questions.	Journal answers 1 question.	Journal answers 2 questions.	Journal answers all questions.

Assessment Task 5

GRADE LEVEL: Second Grade

UNIT: Limestone

Abstract

In this task, students research inactive quarries in Bloomington, choose a side and present evidence in a structured debate.

Prompt

In groups of 3-4, students research inactive quarries, record evidence and determine whether or not they should be cleaned up or preserved as historical sites.

Directions

Students research inactive quarries in Bloomington, such as Furst Quarry, and debate whether or not the land should be cleaned up or preserved as a historic site due to its connection to our state's history with the limestone industry. Students will work in groups of 3-4 to compose a list of evidence-based reasons arguing for one side or the other. Students then report out in a structured debate while the teacher records their responses on a t-chart.

Procedure

Split students into groups of 3-4, assign them an inactive quarry and provide 15-20 minutes of time to research and collect evidence for their designated side in the argument. Provide 15-20 minutes of class time for the debate and record responses on the t-chart. The class t-chart will be shared at a roundtable discussion at a local library.

Scoring Rubric

Benchmark	1	2	3	4
Research inactive quarries in Bloomington and use evidence to debate whether or not they should be cleaned up or preserved for their historical qualities. (2.1.2; 2.1.7; 2.2.4; 2.4.1; 2.4.2)	Student presents 2 reasons during the debate; may not be evidence based.	Student presents 3 evidence-based reasons during the debate.	Student presents 4 evidence-based reasons during the debate.	Student presents 5 or more evidence-based reasons during the debate.