



Topic: Building a Native American Style Bread Oven Grades: 4-6

An integrated lesson plan covering the time period of two months or more. In the beginning, about 3 hours per week would be needed. During construction, 10 to 15 hours per week would be needed. Some of the construction time could be outside of school hours.

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Lesson-Planning Approach

Some learners perceive their “world” as a whole, where all things are interconnected and dependent upon each other. These “integrated” students face major challenges in coping with our dominant educational, social, and economic systems, which tend to present information in a linear fashion without the necessity of integration into meaningful context. Integrated students are at-risk of failing as they attempt to grasp information in ways that do not match their experience. Among large populations of at-risk students are many from Native American and similar cultures who do not regard their world as a sum of parts but as a blend of all that they experience.

This lesson plan does include some traditional, linear approaches to delivering information (checklists, rules, analysis, problem solving and organization). In addition to the traditional, linear delivery of information, this lesson plan also includes some of the following strategies, designed to appeal to at-risk students as they learn academic/life skills:

- ❖ Integration of technology
- ❖ Story telling/anecdotal information
- ❖ Non-competitive group and team work
- ❖ Performance-based assessment and rubrics
- ❖ Visual presentations and practice through technology and other means
- ❖ Project-based assignments that integrate family and community
- ❖ Activities appealing to multiple intelligences (Gardner)

Lesson Overview

Many Native American cultures use outside bread ovens of various sizes and shapes. When bread is made for ceremonial occasions, it is made in these ovens. They are interesting, attractive and functional structures.

For this lesson, students will discover the elements in building such a bread oven, the cultural and historical elements as well as the functional ones, and go through the processes to construct one.

Lesson Objectives

Lesson Project: Bread Oven

When students have completed this project they will be able to ...

- Conduct research on the Internet and in encyclopedias
- Do field research with knowledgeable individuals
- Develop a project plan of action
- Anticipate materials and labor needed
- Develop a proposal
- Make a scale drawing
- Present issues to authority figures and groups
- Organize small groups to accomplish project goals
- Work cooperatively in small groups
- Develop leadership skills
- Measure in one, two and three dimensions
- Estimate materials and time
- Develop a timeline
- Develop a project report

Integration of Other Functional/Academic Skills: Students will be able to...

Math:	Measure in feet, inches, and yards Convert between feet, inches, yards, including fractions and Decimals Calculate area and volume Draw to scale
Reading:	Do research on the Internet and in encyclopedias.
Language Arts:	Report to the group, written and/or verbally, develop a written proposal, present a proposal verbally, telephone etiquette, follow directions, give directions, present an argument verbally, develop a written report of the project
Social Studies:	Work in groups Do independent and group research Determine research approach Do library, internet and field research Determine levels of authority

State/National Standards (Complete as Appropriate)

Math: Measurement, area, volume, conversion, estimating
Language arts: Present an argument to an individual, to a group.

Websites

None were found that were helpful. Students should discover that.

Pre-requisites

None

Required Materials

- Measuring devices
- Graph paper
- Note paper
- Encyclopedias
- Yard stick
- Measuring tape(s) (16' or 25')
- Construction tools

Handouts

Required Equipment/Technology

- Internet access
- Telephone access
- MS Word for students
- Calculators

THE LESSON

Note: Students do not learn from what you do but from what you have them do.

What you say is less likely to be remembered than what they say. Ask questions, give few answers.

This more of an outline than a detailed set of instructions. Add your own ideas and personality to the lesson.

During this whole project, the role of the instructor is more that of a coach than that of a source of information. Whenever possible, let students do the research, ask the questions, come up with the answers or possibilities, work out their differences, even go in the wrong direction. The instructor can try to keep up the students' enthusiasm, show them their progress, encourage them.

Activity

Instructor Notes

Determine if there is interest in or need for a Bread Oven on the school grounds or some other accessible place.

If there is not interest or need, don't do this lesson.

Determine what makes up a bread oven.

How can we find out?
Internet, encyclopedia(?), ask someone who knows, go look at a bread oven.

See about not only what is apparent, but also what is not visible. i.e. what holds up the roof, what is under the floor.

Make a materials list

This will likely include commercially available materials and some that are not commercially available.

Determine amounts of materials needed

This will involve linear, square and cubic measurement

Determine costs for materials

Have students research on the Internet, at stores, by phone

Determine time needed to complete project

Develop a timeline. Periodically assess progress.

- D**evelop a written proposal (in order to get permission and funding) Include a scale drawing
- A**sk permission to make a bread oven. Principal, School Board, Home Owner
- Verbally and in writing
 - Get written permission
- O**der materials (find and get materials)
- C**onstruct Try to let students work out problems in both construction and in group cooperation as much as possible.
- T**est it out What do you burn?
Does the first firing include bread?
How do you make bread dough?
(Let students find the answers)
- D**evelop a written report of the project Include reason for the project, historical use and development of bread ovens, project development, progress, timelines, budget, results

Rubrics

(You will likely be able to develop additional rubrics. This is a start.)

Organization

1. Is able to foresee needs and anticipate problems easily.
2. Is able to anticipate needs but doesn't foresee problems.
3. Does minimal advance planning.
4. Follows others

Measurement

1. Can measure and convert in one, two and three dimensions.
2. Can measure in one and two dimensions, has some problems with conversion and/or three dimensions.
3. Can measure in one direction, has problems with conversion and/or two and three dimensions.

Research

1. Can determine what research is needed and develop approaches to obtain it.
2. Can determine some of the research needed but has some problems developing approaches to obtain it.
3. Has trouble determining what research is needed.

Communication

1. Demonstrates willingness to develop written and oral presentations.
2. Is willing to develop written presentations but is reluctant to present orally.
3. Is unwilling to present orally and written product is not well presented.

Leadership

1. Organizes others and is willing to participate in the work.
2. Is willing to participate in the work but follows the lead of others.
3. Needs coaxing to participate.

Reporting

1. Easily develops and organizes lists and reports.
2. Can develop a report in an abbreviated or outline form.
3. Is reluctant or unable to develop a report.

Perseverance

1. The project is completed near the anticipated time, looks good and works well.
2. The project is completed late or looks only fair or does not work well.
3. The project is deficient in 2 aspects (time, looks, works).
4. The project is deficient in 3 aspects (time, looks, works).
