



Creating a Bench Area

Grade : Sixth

An integrated lesson plan covering 20 sessions of approximately 1 hour each.



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

Students will create a bench area and the benches for the area. They will also incorporate a native plant area that borders the bench area. Once they have completed the project, they will prepare a Powerpoint presentation to present to the class.

Lesson Objectives

Lesson Project: Creating a bench area and native plant area on the River Path property that can be used by both the school as an outdoor classroom and by the town as a gathering area.

Project Objectives: When students complete this project, they will be able to...

- create an area near the school that can be used as both an educational and a relaxation area.
- compute area and perimeter through their everyday uses
- apply processes that are involved in every phase of the project (ie contacting Parks and Rec. in Mancos, finding and purchasing the supplies, etc.).

Additional Skills

Math:

- To apply measurements using both fractions and decimals
- To design projects that require measuring and manipulation areas and perimeters

Reading:

- Follow written instructions

Technology:

- Explore sites that offer different bench designs
- Photograph sites and work in progress
- Create and present a PP show

Integration of Other Functional/Academic Skills: (Critical thinking is required throughout the lesson.) Students will be able to...

- Design a functioning bench
- Design a plant arrangement
- Plant in an arranged planting area

State/National Standards (Complete as Appropriate)

- Reading and Writing Standard #1 – Students will read and understand a variety of materials.
- Math Standard #5 – Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.
 - BM 5.1 – Estimating, using, and describing measures of distance, perimeter, area, volume, capacity, weight, mass, and angle comparison.

- BM 5.4 – Developing and using formulas and procedures to solve problems involving measurement.
- Math Standard #6 – Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving these problems.
 - BM 6.2 – Constructing, using, and explaining procedures to compute and estimate with whole numbers, fractions, decimals, and integers.
- Science Standard #5 – Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.

Websites

Required:

www.fortunecity.com/westwood/smith/338/proj00.html - bench plans

www.conservation.state.mo.us - bench plans

Support:

www.forestry.about.com/index.htm -search “how to plant a tree”

www.gardening.about.com - search “how to plant annual flowers” and “how to plant shrubs and trees”

Pre-requisites

- Students will need to know how to use different measuring devices.
- Students will need to know how to find area of irregular shapes and perimeter of irregular shapes.

Required Materials

- Grid Paper
- Rulers
- Tape Measures

Handouts

- “A Plan for Benches” Proposal

Required Equipment/Technology

- Powerpoint Technology
- Lumber
- Shovels
- Posthole diggers
- Plaster of Paris
- Trowels
- Camera (digital if possible)

THE LESSON

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

Preparation (Before Lesson)

Activity	Time Estimate	Instructor Notes
Assigning photographer and documenter for each group		One person per day will be assigned to be the photographer for the project. One person from each group each day will be in charge of documenting what that group does for the day (this will be used at the end of the project).

Presentation

Activity	Time Estimate	Instructor Notes
Assessing the Area to be used	60 minutes	On the first day, I will take the class down to the River Path. Once we are down there I will open up a discussion about how much we have used this area this year. This will lead to the fact that the one thing missing out there is proper seating. This is to establish both a need and a purpose for the project.

Practice and Performance

(Students help you perform the project steps. You help them perform project steps. They perform steps with little or no instructor help.)

Activity	Time Estimate	Instructor Notes
Determine Area	30 minutes	<ul style="list-style-type: none"> Determine the size of the area we will be working with regard to our needs. This will be done by each group with each group drawing a plan for the area and its dimensions. After each group has finished planning out their area, we will go back to the class and each group will present their plan. We will then have a class vote on which one we will work with. This may end up being a conglomeration of more than one plan. Once we have decided on a plan, we will contact the Parks and Rec. Director and present our proposal to her. If she approves it, we will move on to the next phase. If she sees some areas that need attention, then we will go back and revise our plan. Next we will begin the initial preparation of the area. We will first mark off the area that we have decided on
Drawing up plans	30 minutes	
Plan Approval	----	
Area	60-120	

Preparation	minutes	<p>will first mark off the area that we have decided on. Next, we will begin to remove any rocky material and smooth out any areas that need it.</p> <ul style="list-style-type: none"> • While some group members are working on this, others will be designing the benches. These will also have to be approved by the class and Parks and Rec. • After bench approval, we will gather the materials necessary to build the benches through wood donations and purchasing the necessary hardware from the local hardware store. • The benches will then be put together. • They will then be anchored into place by digging postholes and cement. • The last step will be deciding on the plants that we want to incorporate into the perimeter of the bench area. We will have a guest speaker come in and talk about native species of plants. We will then decide on what we have a budget for and each group will design a specific area of the perimeter. • We will then purchase the plants and plant them. We will have a guest speaker teach the students how to properly plant the plants. • Each group will then take the photographs from the project and create either a powerpoint presentation or a book to explain the project every step of the way.
Bench Design	60-120 minutes	
Gathering Materials	----	
Bench Construction	120-180 minutes	
Bench Placement	120 minutes	
Plant Planning	120 minutes	
Planting of Plants	120 minutes	
Project Presentation	240-300 minutes	

Lesson Assessment Strategy (Formative – As the lesson progresses)

Preparation, Presentation and Overall Implementation (Instructor)

- Is the handout useful?
- Are the guest speakers useful?
- Is there enough time/ too much time for any phases of the project?
- Are the checklists adequate or do they need more information?
- Is the rubric adequate to assess the final presentations?

Performance and Practice (Student)

- This project will take approximately four weeks. They will be assessed on the group's plans (they must have the proper amount of square footage for the area and the proper materials involved). Each student will be assessed on participation each day (this includes the documenter and the photographer). They will also be assessed on how his or her

group's bench turns out. They will be assessed using a rubric on the group presentation or book also.

- Are the students using the skills that they have learned regarding area and perimeter in this "real world" setting?
- Are they creating usable benches?
- Are the assessments appropriate for the project?
- Are the groups working together well regarding documentation and photography?

Technology

- Is the technology used appropriate for the lesson?
- Are the web sites useful or do other sites need to be explored?
- Can the students do the Powerpoint presentation without using a template?
- Do the students need more training in Powerpoint to make their presentations better?

NAME _____

A Plan for Benches Proposal

1. Determine the length of your bench.

2. Determine the width of your bench.

3. Determine the length of the legs of your bench.

4. How many legs are there?

5. How is your bench held together?

6. What materials are used in your bench?

7. Using the grid paper provided, draw a scale front, top and side view of your bench proposal.

Activity Checklist

	Assign a group member to be a documenter of the project
	Determine the Area of the section of land we are working with
	Look at the examples of benches on the Internet
	Plan Area layout
	Prepare Area
	Finish the A Plan for Benches Proposal
	Build benches and place benches
	Determine plan for plants in the area
	Learn how to plant and plant plants (Internet support)
	Prepare Powerpoint or book to present to the class
	Present to the class

Technology Checklist

	Open Powerpoint
	Insert a floppy disk
	Choose “Design Templates”
	Choose a design that your group wants to work with
	Go to “File” and “Save as” – save it under your name on to the disk in Drive A
	The first slide is your Title Page so come up with a catchy title and remember to include the group members names
	Your presentation must be at least eight slides long
	Start from the beginning of the project and explain what happened using both words and digital pictures
	Phase One – The Area of the land
	Phase Two – Preparing the Land
	Phase Three – Bench designing
	Phase Four – Bench building
	Phase Five – Bench Placement
	Phase Six – Plant the Area
	Phase Seven – the Presentation
	Once all of your slides are completed, go to “View” and “Slide Sorter” and choose the transition you want
	Go to “View” and “Slide Show” to watch your presentation to ensure that it is all there before you present it to the class.

Lesson Rubric

<u>Category</u>	<u>0-1 points</u>	<u>2-4 points</u>	<u>5-6 points</u>	<u>7-8 points</u>	<u>9-10 points</u>
<u>Photograph use</u>	No photographs	1 photo used	2-3 photos used	4-5 photos used	6 or more photos
<u>Documentation</u>	No documentation	documentation used is brief and non descriptive. Some phases of the project are missing.	documentation used goes into all of the phases of the project. Some explaining is done.	All phases are presented and explained	All phases are presented and explained. Reflection on the project is presented with details.
<u>Layout of presentation or book</u>	layout is unorganized and missing categories.	layout is organized but all categories are present.	layout is chronologically organized. All categories are present. Used template.	layout is chronologically organized. All categories are present. Used template with some added features.	layout is chronological. All categories are present. No template used and added features.
<u>Class presentation</u>	No organization. Not everyone participated. No professionalism.	Poor organization. Some did not participate. Some categories were missed.	Organized. Some did not participate. All categories covered.	Well organized. All participated. All categories covered.	Creatively organized. All participated. All categories covered with reflection.