



Topic: Even Grass Won't Grow

Grade: 5-8

An integrated lesson plan covering the time period of two months or more. About 3 to 5 hours per week would be needed

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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

At one school, there were spots on the front lawn where grass just wouldn't grow, even after repeated plantings, watering and fertilizer. After the maintenance crew gave up, it became an appropriate lesson for students.

Lesson Objectives

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

- Conduct research on the Internet and in encyclopedias
- Discover and/or determine available resources
- Do field research with knowledgeable individuals
- Develop a project plan of action
- Anticipate materials and labor needed
- Develop a proposal
- Request and obtain funding
- Organize small groups to accomplish project goals
- Work cooperatively in small groups
- Develop leadership skills
- Measure in one and two dimensions
- Estimate materials and time
- 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
Estimate material needs

Reading: Do research on the Internet and in encyclopedias.

Language Arts: Report to the group, written and/or verbally, develop a written proposal, telephone etiquette, follow directions, give directions, develop a written report of the project, write letters.

Science: Determine needs for plant growth
Chemical evaluation of soil

Social Studies: Work in groups
Do independent and group research
Determine appropriate resources
Outline previous attempts and results
Do library, Internet and field research

State/National Standards (Complete as Appropriate)

Math:	Measurement, area, conversion, estimating
Language arts:	Present to an individual, to a group, write a business letter
Science:	Plant nutrients, plant germination and growth, environmental affects on plant growth
Social Studies:	Personal interviews, research plans

Websites

Pre-requisites

None

Required Materials

- Measuring devices
- Note paper
- Encyclopedias
- Measuring tape(s) (16' or 25')
- Grass seed and gardening 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

Discuss the problem of bare ground
Grass won't grow

Present this as a problem. Let students determine their interest in solving the problem.

Determine what has been tried before

- Develop a written report
- Report to the class

Interview maintenance staff and others
Assign individuals or small groups
Throughout this project the groups working on various aspects will report verbally to the class as appropriate.

Research possibilities

Develop a research plan

Students ask others for suggestions
Who would really know?
A farmer? A university extension agent?
A garden shop or nursery?
Let students make the contacts in person or by phone and report back.
Have students arrange for an expert to view the area and/or evaluate soil samples as needed.

Take soil samples and send for evaluation

Work with university extension agent

D evelop a plan	What can be tried? Agree on a plan to try.
D etermine materials needed and costs	What needs to be purchased? What can come from home? What does the school already have or can get?
A pply for permission and funding Verbally? In writing?	Principal, maintenance chief
K eep a log of activities	
P repare soil	Fertilize? Add chemicals? Till? Other?
P lant	
D iscuss how to protect the area	Dogs? People? Chemicals? Other? What would keep grass from growing?
I mplement protection of area	
W ater as appropriate	
E valuate growth	Does grass grow better in some places than others? Why?
D evelop written report	Photographs? Before and after?

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).
