



Topic: Case of the Missing Cookies

Grade: 8th

An integrated lesson plan covering 3 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

Detectives often use the scientific method to solve crimes. Students will imagine that they are a detective who has been asked to solve the theft of cookies from a jar in the student cafeteria. They will write down the steps involved in the method used to solve this terrible crime.

Lesson Objectives

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

- ? To produce a Microsoft Word 2000 document with formatting.
- ? use a full range of strategies to comprehend technical writing
- ? use background knowledge of subject and text structure to make complex predictions of content and purpose of the text
- ? choose vocabulary and figures of speech that communicate clearly
- ? draft, revise, edit, and proofread for a legible final copy
- ? apply skills in analysis, synthesis, evaluation, and explanation to their writing and speaking
- ? write in science using the technical vocabulary of the subject accurately

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

Science Standard I

- ? Scientific investigation, design, conduct, communication & evaluation

Strategies to Address Native Americans and At-Risk Students

- ? Explain purpose of the lesson.
- ? Present whole picture of skill before isolating component skills/concepts.
- ? Be highly structured and predictable.
- ? Provide constant structure.
- ? Recognize and build on learners' strengths and prior knowledge.
- ? Simplify language but not content.
- ? Reinforce main ideas and concepts through rephrasing rather than through verbatim repetition.
- ? Allow time to respond.
- ? Work with an aide or the Resource teacher.
- ? Create outcome-based assessments.

Colorado State Standards

- ? Students read and understand a variety of materials.
- ? Students write and speak for a variety of purposes and audiences
- ? Students write and speak using conventional grammar, usage, sentence structure, punctuation, capitalization, and spelling.
- ? Students apply thinking skills to their reading, writing, speaking, listening, and viewing.

Websites

Required: N/A

Support: N/A

Pre-requisites

- ? Have an understanding of the scientific method.

Required Materials

- ? List of the steps involved in the scientific method.
- ? "Minutes Mysteries" by Michael Avallone, ISBN: 0-590-05368-4

Handouts

- ? List of steps involved in the scientific method (handout 1)
- ? Activity checklist (handout 2)
- ? MS checklist (handout 3)
- ? Lesson Rubric (handout 4)

Required Equipment/Technology

- ? Computer lab

THE LESSON

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

Preparation

Activity	Instructor Notes										
Discuss what a detective does.	Share the story “Minutes Mysteries” by Michael Avallone, ISBN: 0-590-05368-4										
Review the steps in the Scientific Method.	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Problem/Question</td> <td style="width: 50%;">6. Conclusion</td> </tr> <tr> <td>Observation</td> <td>7. Write a Report</td> </tr> <tr> <td>Hypothesis</td> <td>8. Scientific Theory</td> </tr> <tr> <td>Experiment</td> <td>9. Scientific Law</td> </tr> <tr> <td>Collect Data</td> <td></td> </tr> </table>	Problem/Question	6. Conclusion	Observation	7. Write a Report	Hypothesis	8. Scientific Theory	Experiment	9. Scientific Law	Collect Data	
Problem/Question	6. Conclusion										
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Collect Data											
Look over and discuss handouts.	Go through each handout and allow questions & clarification.										

Presentation

In partners students will develop a prewriting web to generate ideas for the story they are going to write together.	Review what a web is and that it should include a list of suspects and motives. Remind them they need to include all the steps in the Scientific Method some way in their story.
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Performance and Practice

Part I

Instructions for students	Teacher notes
Together write a rough draft of the story being sure to include all the steps in the Scientific method. Their story should also include an introduction, body, and conclusion.	Monitor the classroom so you are available for individual help.

Part II

Complete the Ms Word checklist with your teacher.	If students do not know MS Word, work with them through the MS Word Checklist (Handout 3) so that they can write the final draft of their story in MS Word. Clip can be added.
Each student needs to write a final draft of their story in MS Word and turn it in. Clip can be added.	Collect student work and congratulate everyone on a great achievement by reviewing the objectives and noticing accomplishments in each area. Complete the rubric on each student.

Lesson Assessment Strategy (Formative – As the lesson progresses)

Preparation, Presentation and Overall Implementation (Instructor)

1. Are the instructions and expectations for the class clear from the beginning?
2. Am I spending sufficient time on modeling the skills I want students to acquire?
3. Is there enough variety in the lesson to appeal to most learning preferences?
4. How many learning intelligences am I addressing?
5. Are students “connecting” to lesson objectives? How?
6. How is this lesson “integrated?”

Performance and Practice (Student)

1. Do all students have the skills to follow instructions? If not, what measures am I taking to address the challenge?
2. Are all students participating in the activities either by active observation or by voicing their thoughts?
3. Am I identifying the strengths of each student and pairing/grouping people accordingly? What results am I getting?
4. How are students performing? Are all of them able meeting 80% of the lesson objectives? If not, what am I doing to help them achieve more?

Technology

1. Is the technology working?
2. How are students reacting to the technology, and what do I need to remember when I teach this lesson again?
3. How are students applying or wanting to apply their technical skills in other areas?

Steps in the Scientific Method

1. Problem/Question
2. Observation
3. Hypothesis
4. Experiment
5. Collect Data
6. Conclusion
7. Write a Report
8. Scientific Theory
9. Scientific Law

Activity Checklist

Handout 2

In partners students will develop a prewriting web to generate ideas for the story they are going to write together.	
Together write a rough draft of the story being sure to include all the steps in the Scientific method. Their story should also include an introduction, body, and conclusion.	
Complete the Ms Word checklist with your teacher.	
Each student needs to write a final draft of their story in MS Word and turn it in. Clip can be added.	



INTEGRATING TECHNOLOGY

Word I Check List-Case of the Missing Cookies

Session Objectives: (1) to explore Microsoft Word 2000 and apply its basic features

Skills Checklist

<input type="checkbox"/> Open Microsoft Word 2000	
<input type="checkbox"/> Navigate menu and toolbars bars (Alt-Tab; Set Up; Tool Options)	
<input type="checkbox"/> Create new document – blank document	
<input type="checkbox"/> Format text – style (bold, italic, underline)	
<input type="checkbox"/> Format text - justification	
<input type="checkbox"/> Copy / paste, Find/Replace	
<input type="checkbox"/> Insert picture from Clip Art Gallery if desired	
<input type="checkbox"/> Save document as a DOC file	

Rubric for Case of the Missing Cookies

Criteria: specific behaviors, products, and qualities we are looking for in a student's work	In Progress	Basic	Proficient	Advanced
Scientific Information	Several steps are missing or out of order. Little effort has been put into the assignment.	Some of the steps of the scientific process have been left out or are out of order. Little imagination has been shown.	Most of the steps involved in the scientific process have been included in a creative way.	All the steps involved in the scientific process have been included in the correct order and in a very creative & imaginative way.
Organization	The story leaves us confused. There is no introduction or conclusion.	The story is in an order that makes sense most of the time. It is missing either the introduction or conclusion.	The story tells things in an understandable order with an introduction and conclusion.	The story tells things in an order that is very understandable with a good introduction & conclusion
Writing Conventions	Mistakes really get in the way of understanding the writing. There is no real evidence that this paper has been proofread or edited.	There are numerous mistakes in the final draft.	If you had proofread the paper better, you would have caught the few remaining mistakes.	Even careful reading reveals no glaring errors. The paper reads as if you spent lots of time proofreading and editing.