

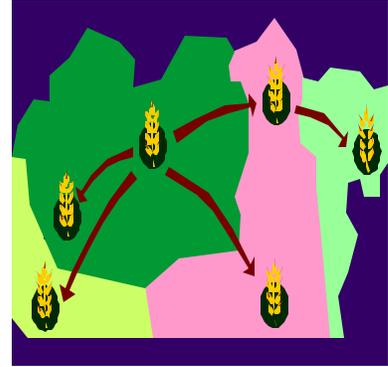


Topic: Way to Go! Create a Road Map Game

Student Reading Level:
Grade 5 to Adult

An Integrated Lesson Plan
Covering three or four
sessions
of one hour each

Gloria J. Edwards



Lesson-Planning Approach

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

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 that 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)
- ❖ Application of Scientific Method to formulate and solve a problem.

Lesson Overview

In this lesson, students create a travel game using a common road map of the state or area of their choice. The students will be able to interpret map symbols, calculate mileages and scales, use creative writing, and develop map interpretation skills using a fun and creative approach. The game may also be applied to other maps (country or world maps) once the basic game has been created.

Lesson Objectives

Project: Create and play a travel game with common road maps.

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

- ❖ **Understand and Use** a road map.
- ❖ **Create** travel games using a common road map.
- ❖ **Work together** as a group to accomplish game creation and completion.
- ❖ **Research and Interpret** general map symbols and meanings.
- ❖ **Calculate** map mileage and scale.
- ❖ **Write** creative playing cards depicting game rules and travel events.
- ❖ **Use technology** to research maps and map interpretation.

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

- Math:** Use math to calculate mileage, scale, elevations, and other numerical information.
- Reading:** Read information on maps, symbols and meaning, and map interpretation.
- Writing:** Write creative playing cards to be used to determine play in turns of the game.
- Technology:** Use the internet for relevant sites; use computers to create playing cards.
- Science** Apply the basics of geography and cartography in understanding maps and related surroundings.

State/National Standards

<http://www.cde.state.co.us/cdeassess/sci.htm#standards>

Reading and Writing

1. Students read and understand a variety of materials.
2. Students read, select, and make use of relevant information from a variety of media, reference, and technological sources.
3. Students write and speak using conventional grammar, usage, sentence structure, punctuation, capitalization, and spelling.
4. Students apply thinking skills to their reading, writing, speaking, listening, and viewing.
6. Students read and recognize literature as a record of human experience.

Geography

1. Students know how to use and construct maps. Globes, and other geographic tools to locate and derive information about people, places, and environments.
2. Students know the physical and human characteristics of places, and use this knowledge to define and study regions and their patterns of change.
5. Students understand the effects of interactions between human and physical systems and the changes in meaning, use, distribution, and importance of resources

Mathematics

3. Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning used in solving these problems.
4. 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.

Colorado Department of Education: Adult Basic Education Skill Assessment Checklist Standards:

Level One:

- 1R16 - Interpret single legend maps and request and clarify directions.
- 1R1 – Recognize and use the following parts of speech: nouns, pronouns, conjunctions, adjectives and verbs.
- 1R3 – Interpret common abbreviations
- 1R9 – Interpret and follow directions on basic signs and directories
- 1R10 – Recognize and use signs relating to transportation
- 1W6 – Write basic notes
- 1R17 – Interpret product labels, and give and follow directions
- 1M10 – Interpret basic charts (compare and contrast)
- 1M1 – Add, subtract, multiply, and divide whole numbers
- 1M2 – Round off to nearest whole number and estimate reasonable answers
- 1W9 – Write a solution to a functional problem (follow a sequence, summarize)

1R20 – Read, comprehend, compare, and respond to fictional works from various ethnic backgrounds (reading extension in understanding place names in other languages)

Level Two:

2R7 - Interpret and use simple maps related to travel.

2W3 – Write a well-developed paragraph

2R5 – Interpret, request, clarify, give, write, and follow basic directions for a location

2W8 – Write basic directions for a process or a task (sequence information)

2W9 – Describe a problem-solving strategy for a given situation

2M13 - Interpret tables and charts

2M1 – Add, subtract, multiply, and divide fractions and decimals

2M2 – Determine Equivalent fractions, decimals, and percents

2M20 – Demonstrate ability to use a four-function calculator to do basic functions and calculate decimals and percents

2M18 – Interpret fractional standard distance measures

2M2 – Determine equivalent fractions, decimals, and percents

2R14 – Read a passage or sample realia to determine fact and opinion

2R16 – Read a passage or sample realia and find the main idea and details

2R17 – Read a passage or sample of realia and summarize

2R18 – Recognize and use Standard English parts of a sentence: nouns, pronouns, verbs, conjunctions, adjectives, adverbs, prepositions, comparatives, superlatives, direct and indirect objects.

2W10 – Use appropriate punctuation and capitalization

Websites

Required: (Use these sites for reading and background information)

<http://math.rice.edu/~lanius/pres/map/> (Basic map information, history, and math exercises)

www.geography.about.com/mapscale/index.htm (More extensive exercises explaining scale, proportion, and map interpretation)

Support: (Use these sites for additional information and future reference)

<http://www.geography-games.com/index.html> (Geography games)

www.surfaquarium.com/newsletter/maps..htm (Map education, lessons, and links)

www.usgs.gov/learningweb/students/project.htm (Educational information and lessons about geography and cartography)

Pre-requisites

Read at fifth grade level or above.

Possess basic computer skills to conduct word processing and search the web.

Required Materials

- ❖ Road maps of state, country, or world (state map is suggested for beginning game).
- ❖ Paper for printing out playing cards (perforated business card forms can work, too).
- ❖ Playing pieces: personal coins, jewelry pieces, or other playing markers.
- ❖ Die or dice
- ❖ Highlighters/Markers (optional)

Handouts

- ❖ Activity Checklist and Game Ideas and Suggestions ([Handout One:Activity Checklist](#))
- ❖ Lesson Rubric (Handout Two)

Required Equipment/Technology

Network accessible computers, also equipped with a word processing programs.

THE LESSON

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

Preparation (Days One and Two: 1 - One Hour, 2 - One Hour – or more if necessary)

Activity	Instructor Notes
1. Look at various road maps, or a map of the United States, and choose a state that you would like to work/play with. You may choose the state you live in, or perhaps a place you would like to visit. Take time to look your map over. Become familiar with the map scale and symbols, and understand their meaning.	<ul style="list-style-type: none">• Have the class discuss familiarity with maps. What is their prior knowledge of working with maps? Are there stories about problems from not knowing how to read a map?• Examine differences in the road maps, and explain that the group will be developing a travel game with the map of their choice (or the whole class may use copies of the same map).• Tape a common state road map to the wall and introduce the keys, legends, scale, and orientation.
2. Read the internet sites and become familiar with map terms such as legend, scale, and orientation by doing the internet lessons. Study your own map and its legend and scale. Be able to calculate your own map scale.	<ul style="list-style-type: none">• Have students become familiar with the basics of maps by reading the definition, history, and terminology of maps. Start with: http://math.rice.edu/~lanius/pres/map/• Then have students study scale, symbols, and other information at:• www.geography.about.com/mapscale/index.htm

Performance and Practice (Day Two- One Hour)

<p>1. Each person now writes an assortment of 5 or 10 playing cards to be used with the game. As in other board games, make instructions on the cards that have players move forward, back, take a detour, or gain or lose turns based on travel events. You may use Microsoft Word and use clip art to make them look special. Turn into the teacher for review and editing.</p>	<ul style="list-style-type: none"> • The group may practice using the business card option formatted in MS Word to make playing cards easily printed out and cut apart. • Have students make playing cards that involve problem-solving with map information or interpretation of the legends. Refer to Handout One for ideas and suggestions.
<p>2. Now, write your rules of the game. The object of the game is to get to the Finish first on your chosen route. The game can include two to four players per map. For example, at every fifth town or road intersection, pull a game card. Other map features could have rewards, such as skip ahead two or three towns when landing near an airport.</p>	<ul style="list-style-type: none"> • The class may be divided up into groups for this part. Each group can then make brief presentations on their cards and rules, and can swap game cards, or put all cards into a box and re-deal cards randomly to each group. A set of rules can be agreed on for the whole class.

Presentation (Day Three – One Hour, additional time if needed for extra playing and extension)

Activity	Teacher notes
<p>1. Play your game. Agree on the Starting point (perhaps a town in the southwest corner of the map), and the Finish point (a town or location in the northwest corner of the map). Players can choose their beginning routes. Keep in mind that you may get detoured from your route by a playing card. The first person to the Finish town wins.</p>	<ul style="list-style-type: none"> • Use the road map as a travel board game with one other person or a group of up to four players (this depends on how many main roads your map has). Use coins, small objects, or pieces of jewelry for playing pieces. Each member of the game chooses a different route to take to the finish. Using a die or dice, move ahead the number of towns on the map as shown on the dice (for example: the die rolls 7, move ahead 7 towns or points along the road).
<p>3. Writing extension: As you play, make a list of five unique place names from your map and find out their original meaning. Present your list and meanings to the group.</p>	<ul style="list-style-type: none"> • Many place names on maps have unique origins in other languages. Have students select an assortment of place names (they may appear in English, French, Native American, or Spanish)

	<ul style="list-style-type: none"> • Have them find out the definition of these names and how they relate to the shape of the land or area on the map.
5. Discuss Rubric	<ul style="list-style-type: none"> • Have students perform self-assessment of their performance in reading, writing, scientific method, use of technology, and creation of the map game.

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? Do the students need help with the video or tape recorders?
2. How are students reacting to the technology, and what do I need to remember when I teach this lesson again?
How are students applying or wanting to apply their technical skills in other areas?

Handout One:

Activity Checklist

Activity Checklist

<ul style="list-style-type: none">• Discuss maps and the need for understanding them.
<ul style="list-style-type: none">• Choose game map.
<ul style="list-style-type: none">• Read internet sites, do activities to understand scale and legends.
<ul style="list-style-type: none">• Write playing cards.
<ul style="list-style-type: none">• Write rules of the game.
<ul style="list-style-type: none">• Play game.
<ul style="list-style-type: none">• Writing extension: list five unique place names
<ul style="list-style-type: none">• Present to group.
<ul style="list-style-type: none">• Discuss lesson rubric.

Game Ideas and Suggestions

Game Card Ideas:

Loose or gain turns by:

- Loose a turn while calculating total miles traveled (represented by small numbers between towns and intersections),
- Calculate the map ratio (if one inch equals 5 miles on the scale, how many inches is that on the ground: one mile = 5,280 feet).
- Lose or gain turns due to weather events, construction, the invention of new travel or flying machines, detours due to aliens in roadway, etc.
- Figure your closest elevation by looking at the key or landform.
- The cards can also include the economics and environment of their map location, and use up situations particular to that area (tornadoes, hurricanes, cattle drives, sudden winter storms followed by heavy ski traffic, go to state capital and lose turns dealing with state politicians.)
- Many place names on maps have unique origins in other languages. Select an assortment of place names (they may appear in English, French, Native American, or Spanish) and have them find out the language and meaning of these names and how they relate to the shape of the land or location on the map.

Handout Two: Lesson Rubric

Name:
Teacher:
Date:
Course:

Way to Go! Travel Map Game

Criteria:	Level 1	Level 2	Level 3
Is able to work productively in a group to accomplish tasks	Fully able to work productively in a group to accomplish tasks	Somewhat able to work productively in a group to accomplish tasks. Needs some help working cooperatively.	Limited ability to work productively in a group to accomplish tasks. Needs help working cooperatively.
Is able to interpret map information: symbols, legends, keys, calculate mileages, ratios and scales	Fully able to interpret map information: symbols, legends, keys, calculate mileages, ratios and scales.	Somewhat able to interpret map information: Needs some help with symbols, legends, keys, calculate mileages, ratios and scales.	Limited ability to interpret map information: Needs extensive help with symbols, legends, keys, calculate mileages, ratios and scales.
Used creative writing, grammar and spelling to make playing cards and rules of game.	Used creative writing to make playing cards and rules of game with proper grammar, spelling, and effective instructions.	Used creative writing to create playing cards and rules of game, errors in spelling and grammar exist in more than 20% of writing, instructions somewhat effective.	Used limited creative writing ability to create playing cards and rules of game. Errors in spelling and grammar exist in more than 50% of writing, playing instructions ineffective.
Is able to use internet sites to research and understand maps.	Is able to use internet sites to research and understand maps independently.	Is able to use internet sites to research and understand maps with occasional help.	Is able to use internet sites to research and understand maps with continuous help.
Created and participated in final map game project.	Effectively created and participated in final project.	Partially participated in creation and use of final project.	Minimal participation and use of final map game project.