

Math

Analysis of Bar Graphs

You are a chairperson of a major corporation. You have just read the business section of The Record and saw the “Consumer Confidence” graph. You have called an emergency meeting of your Board of Directors for 8:00 A.M. tomorrow.

You need to present in writing to your board, your evaluation of the graph as it affects your business. As a result of your evaluation of this graph, you also are to present a business plan to include: affect on sales, affect on gross profit, marketing and advertising expenses, and anticipated seasonal trends.



Math
Division: Whole Number and Decimals

You are planning a nineteen-day trip this summer to tour three cities in the United States. Since it is March, it is important to begin planning this trip immediately.

After selecting three United States' cities, you will drive from Old Tappan to the first city by car at a cost of \$1.00 per gallon for gasoline. You will use Mapquest (<http://www.mapquest.com>) for directions and number of miles.

After visiting your first city, you are very tired from all that driving and choose to fly to your second city. You have found that the best airline rates can be found at Continental Airlines (<http://www.continental.com>). You will determine the total flying mileage and determine the cost per mile.

After spending time in the second city, it is time to go to your third and final destination. This time, being tired of driving yourself and the expense of airfare, you choose to take a leisurely bus by going via Greyhound (<http://www.greyhound.com>). You analyze the cost per mile traveling by bus as compared to your previous means of transportation.

Your traveling is now almost done. You've left your car at that first city's airport, so now it's time to fly back from this third city to the first.

Looking back, you found all means of transportation interesting but choose to write about each. Being the responsible person that you are, you write down all your costs, even how you calculated your cost per mile, showing all of your work.

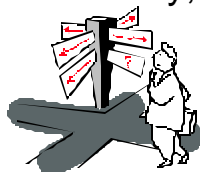
Next year, maybe you can do it again!

From Old Tappan, New Jersey to First City, _____, via car.

From First City, _____, to Second City, _____, via Continental Airlines.

From Second City, _____, to Third City, _____, via Greyhound.

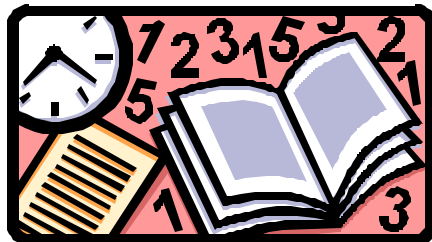
From Third City, _____, back to First City, _____, via Continental Airlines.



Math Geometry

As part of our study of geometry, we will be looking at the effect of geometry in art. Cubism is a school of modern art characterized by the use of cubes and other abstract geometric forms, rather than by a realistic representation of nature.

You are a fifth grade math teacher, teaching geometry. You want your students to appreciate how geometry is seen outside the math textbook and particularly in the world of art. You need to identify and discuss forms of cubism art, providing examples and having both you, the teacher, and the students explore the varied geometric shapes found in each piece of art. Your principal, Mr. Rossi, said that he would be observing you conduct this class, you better be well prepared. Remember that you, as the teacher, should be the expeditor of information, with your class exploring the concepts and sharing with each other. At the end of your presentation, remember you have to bring your presentation to a summary or conclusions.



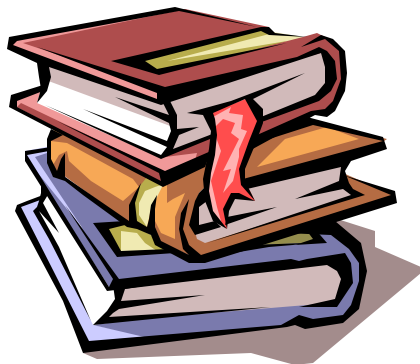
Math Geometry

You are to create a math lesson based on a popular children's story. You can work in groups of three or four and review the children's picture books in the front of the classroom. You are to present a math lesson using a revised version of a children's picture book.

Read a story quietly as a group, and determine what basic geometry concepts can be taught well using this story. Develop a lesson around this concept, using the story as a main focus. One person should assume the role of expeditor, one person a timekeeper, and one person writing down the group's discussions. Use your math textbook as one of your references.

Carefully think about the answers to the questions below as you rewrite your children's story:

- What do you want the students to learn?
- What prior knowledge will students need to know before this lesson can be taught? What math concepts will they need to know in order to learn these new concepts?
- How will you use your group's children's story to teach this math concept? You can be as creative as you wish – make a game, develop word problems, etc.
- What visual aids or manipulatives do you need in order to develop and teach this lesson?
- How will you know if students understand the concept? How will students demonstrate this understanding?
- What problems can you anticipate in using this lesson to teach this concept, and how might you eliminate those obstacles before or while teaching the lesson?



Social Studies
Geography
Southeast Asia
Vietnam

After speaking to a number of people and reading The New York Times article of April 24, 2000, "To Vietnam and Back. And Back. And Back." by Serge Schmemmann, you are to represent one of the three groups associated with the Vietnam Conflict: those who served in Vietnam, those who opposed the war, or those who stayed home and didn't have a strong opinion about the war. This is not a debate on whether the war should have been fought, but rather an attempt to capture why Vietnam veterans often didn't find themselves engaged in meaningful conversations about their experience once they returned home. Your presentation should highlight why it was difficult for veterans and civilians to candidly and comfortably discuss the war.



Social Studies
Geography
Southeast Asia
Borneo

Science
Plants and Ecosystems

There will be an exotic pet store opening soon in your neighborhood, and there is a lot of demand for exotic pets, despite the controversy that surrounds the trade of such animals. You will be assigned to either work on promoting the sale of exotic pets at this store (while disclosing the potential dangers) or will be assigned to picketing the store's opening. Within your group, you must include research on mammals, reptiles, and birds.

The store owners, who are promoting the sale of exotic pets are to include the following:

- Where is this animal usually found in the wild?
- Why would someone want to own this exotic animal rather than owning a domesticated animal?
- What are some special traits of this exotic pet?
- What potential pathogens or parasites could this animal be carrying, and how can they be treated?
- Are there regulations in your area to follow when owning this animal, and if so, what are they?
- How would this animal be marketed to consumers?

The store picketers, who are protesting the sale of exotic pets, are to include the following:

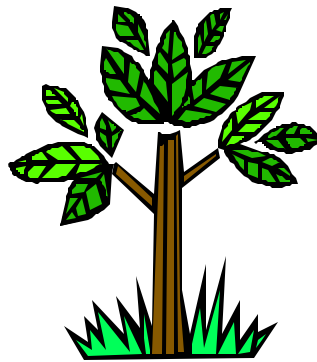
- Where is this animal usually found in the wild?
- Is the species exclusively captive-bred, or is it sometimes taken from the wild?
- How is this animal captured and transported?
- How has this animal's ecosystem been affected by the trade of this exotic pet?
- How will this animal's life be different in captivity, as opposed to in the wild?
- What are the risks to the animal during capture and importation?
- How could this animal potentially endanger its owner?



Science Plants

You are to put yourself in the position of an individual who is an expert in the field of plants. You are to create a problem that his individual might encounter, conduct research, and solve the problem.

For example, you may have a pond and you aquatic plants are dying (you may want to go to Waterford Gardens in Saddle River); you are botanist and want to think of better uses for plants in the future, you need to research how carnivorous plants might hurt animal life; you are stranded in the woods and need to live on edible plants (and also know what are poisonous plants); the Sierra Club is having financial difficulty and you need to create a fund raising activity highlighting the importance of this organization; you want to research the philosophy of Thoreau and see if you could live your life following his values and beliefs; you want to research why Jean Craighead George values ecology as evidenced in her writings, why she feels so strongly about the environment, and how you could pursued your classmates to embrace the same values; you want to continue the work that Rachel Carson began and convince you classmates of the importance of this work; or you have accepted a position with the EPA and are assigned to a problem with the sudden death of plant life in a community.



Geography South Africa

In South Africa, the Afrikaner-dominated National Party won the 1948 general election and immediately began to implement the policy known as apartheid, which in Afrikaans means “apartness.” All population groups classified as non-Europeans were governed separately and subordinated at every level to white South Africa.

You are a member of the United Nations Council on Equity. You, with your group, are to investigate apartheid, both historical and present day. It is rumored that white extremists are plotting to attempt to reintroduce formalized apartheid. You are to write a treaty to be shared with the other three group councils. The conclusion of your treaty will be your proposal of how to evaluate significant South African economic and demographic activities to insure that apartheid is eradicated.



Social Studies
Geography
The Middle East

Since the beginning of Passover, the intensity of the conflict in the Middle East has escalated. To be able to propose a peaceful solution, we must be aware of the chain of events, the history leading to this conflict, and the perspective of those involved.

You and your group have been assigned the role of President George Bush of the United States, Prime Minister Ariel Sharon of Israel, or President Yasser Arafat of Palestine. After conducting research collectively, you are to present an opening statement, rebuttal and proposal for peace.



Science Electricity and Magnetism

You are to put yourself in the position of an individual who is an expert in the field of electricity and magnetism. You are to create a problem that his individual might encounter, conduct research, and solve the problem.

For example, a doctor may have a problem with the results from a MRI; an electrician may have a problem with the wiring of a building; a third world country may want you to produce Maglev Trains for their country; your older sister, the minute before the senior prom, has severe static electricity in her hair and dress!

