



WSMC High School Competition

The Pros and Cons Credit Cards

Project Problem

2007

Soon, all of you will be able to have credit cards and accounts. They are an important element in the fabric of the United States economy as well as international economies. Some cultures find the credit card to be a symbol of American capitalism which they find offensive while other cultures embrace the economic advantages. Most teenagers and a large portion of adults don't really understand the advantages and disadvantages to having and using them. Your job is to produce a brochure for your peers that will help them understand how to choose a card wisely, how to use cards to their benefit, and to warn them of the dangers associated with their use.

The ten page project document will be the evidence that supports the concepts in the brochure. The project should include:

- Evidence of research on the positive aspects of credit cards
- Evidence of research on the negative aspects of credit cards
- A bibliography
- Mathematical example(s) of thoughtful use of credit cards
- Mathematical example(s) of poor use of credit cards and the many hazards that befall careless users
- Statistics on the likelihood that a new users will end up in trouble with their account
- Five preferred credit cards and why they are wise choices

There are four components to the Credit Card Project:

- The Ten Page Report
- The Brochure
- The Display
- The Presentation

Three copies of the Report and Brochure must be mailed to your regional director with a postmark of the 26th February, 2007 or earlier. At Regionals on the 7th of March you will have a display about your project and give a 5 minute presentation on your project.

Three copies of the Report and Brochure (revised if you wish) must be mailed to Jim Miller (201 Elk Haven Rd. Cle Elum, WA 98922) with a postmark of the 10th of April, 2007 or earlier. At State on the 21st of April you will have a display about your project and give a 5 minute presentation on your project.

SCORING GUIDE for the WSMC 2007 Team Project

Your investigation will result in four "products". The first will be a written report. The second will be a brochure. The third will be a very brief 5 minute presentation before an audience and a panel of judges. The fourth will be a display of some kind that you will use to summarize your findings for students, judges and others who will come to you and ask you questions about your work. In all but the brochure, you will need to explain your findings and conclusions and summarize and identify supporting evidence, and give examples. In the final evaluation, the report will account for 55% and the 15% of the total points. The presentation will account for 15% and the display will account for the remaining 15%. Below you will find explanations of these four products and the ways in which they will be evaluated.

The report, the brochure, the presentation, and the display will be evaluated according to your performance on the criteria shown below. You will receive 4 –0 points on each of these criteria. When you meet expectations for a criterion, you will be given 3 points for that criterion. Four points will be given to those who, in the judgment of the evaluators, exceed expectations. Zero points will be awarded if there is no effective response.

I. The Report and Brochure (70%)

The entire report should have ten pages or fewer. The pages should be numbered and have one inch margins all around. Please use a legible font and do not use a font smaller than 12 for the text of the report. Three copies shall be submitted to the regional director postmarked February 26, 2007. Here is a scoring guide for the report.

Addressing the problem 12 points
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Addressing the problem that was posed

**When you
meet
expectations**

The problem you addressed is the one that was given. It has been addressed within your context but it has not been substantially modified.

Restate the problem in your context

**When you
meet
expectations**

The problem is clearly and succinctly restated in the report's introduction so that the reader will know that you understood the problem.

Communicate your plan for addressing the problem

**When you
meet
expectations**

A clear and succinct plan for addressing the plan is outlined following your restatement of the problem. The plan should follow a logical progression. For example, "In order to address the problem we needed to know x . Therefore we did y ." etc.

Data 12 points

Data sources must be clearly identified and sited

When you meet expectations .

You clearly identify the sources of data you use to address the problem. Your citation should allow an informed and competent reader to find the same information.

Data sources must be appropriate and reliable

When you meet expectations .

The data sources you choose would be acceptable to an “expert”* in the relevant field. Do not identify any personal information (names, student numbers, etc.) that may be connected to real people. Explain why you use the sources you select.

Data sources must be sufficient

When you meet expectations .

You give evidence to show that if multiple sources of data are available you have investigated these to the point where you can make a reasoned choice about using one or more of these.

Mathematics 32 points (This section receives double weight, $16 \times 2 = 32$)

The mathematics you use must be appropriate

When you meet expectations .

You have selected mathematical tools (algorithms, techniques, procedures, models, etc.) that have the potential to address the problem effectively. A K-12 math “expert”* would probably make the same selection

The mathematics you use must be clearly justified

When you meet expectations .

You have given a clear and succinct justification for substantial choices among mathematical tools (e.g., You don't need to explain why you chose addition when you need the sum of a set of numbers. You should explain why you used a linear model for the behavior of a stock rather than an exponential model.)

The mathematics you use must be adequate / sufficient

When you meet expectations .

The mathematical tools you selected enable you to address the problem effectively and efficiently. You've done enough.

When you meet expectations

The mathematics you use must be correctly applied

You have used the mathematical tools (algorithms, techniques, procedures, models, etc.) successfully. There are no substantial mistakes in your mathematics.

Communicating the Results 20 points

When you meet expectations

Your conclusions must be clearly and correctly tied to and supported by the mathematical analysis.

You are able to explain how you have used mathematics to make sense of and solve the problem. Your explanation follows a clear and logical sequence that makes sense to a k-12 math “expert”*.

When you meet expectations

The figures and graphics must be necessary and sufficient.

You have used representations of mathematics (tables, graphs, charts, etc.) that assist the reader in understanding your work and your conclusions. Every representation has a clear and considered purpose.

When you meet expectations

The figures and graphics must be clearly labeled.

The meaning of the figure or graphic is clear to a competent reader. You have a succinct and informative title for each figure or graphic. The axes or dimensions are labeled, etc.

When you meet expectations

The figures and graphics must be tied to the text.

When a figure or graphic appears in the report it has a figure number in the lower left corner (i.e., figure 1, figure 2, etc.). Each figure is clearly connected to a point that you are making in the report. (e.g., “The data / results shown in figure 4 show that”)

Your grammar is correct.

When you meet expectations

You have very few (less than one per page?) grammatical errors**. You must have page numbers. You should use some acceptable style standard (e.g., Strunk and White, APA, etc.). While you do not have to be obsessive about this, deviations from a standard should not detract from the report’s readability. Your source citations must also conform to some standard format.



II. The Display (15%)

On the day of the contest, you will set up and "staff" a display where you will talk with people about your investigation. You should have some sort of visual display that summarizes the highlights of your investigation. This, however, is only part of the process. More importantly, you should be prepared to summarize the results generally and to answer specific questions from judges and students about your work. These questions can cover any aspect of the work you have done, including details from the report and will allow the judges to finish their evaluation of the investigation. These displays will be set up in an area that is available to all of the participants in the contest and so you may also get questions from others who are interested in your work. At least one member of the team must be present most of the time.

Here is a scoring guide for the display.

12 points. Your display and the people supporting it must:

When you
meet
expectations

explain your interpretation of the problem

Your display and your verbal explanation should allow a competent and interested reader or listener to understand the basis of the problem in the context of your school.

When you
meet
expectations

explain and justify the approach you took

Your display and your verbal explanation should allow a competent and interested reader or listener to understand why you selected major mathematical tool and techniques.

When you
meet
expectations

explain and justify your conclusions

Your display and your verbal explanation should allow a competent and interested reader or listener to understand your solution to the problem that was posed.

III. The Presentation (15%)

On the day of the contest, your team will give a very brief (five minutes) presentation summarizing your investigation. The evaluation of the presentation will focus on your communication skills more than on the quality of the mathematics which receives primary emphasis in the report and during the display.

Here is a scoring guide for the presentation.

24 points. The time allowed for the presentation is short or long.

When you
meet
expectations

Your presentation should be informative.

Your presentation should include sufficient information so as to enable listeners to understand what is important about this problem and your conclusion or solution to the problem.

When you
meet
expectations

Your presentation should be clear.

The style, structure, and sequence of your presentation should enable listeners to easily understand your work on the problem.

When you
meet
expectations

Your presentation should be convincing.

The style, structure, and sequence of your presentation should convince listeners that you used mathematics effectively to understand and address the problem.

When you
meet
expectations

Your presentation should be compelling.

The style, structure, and sequence of your presentation should keep listeners engaged, involved, and interested.

When you
meet
expectations

Your presentation should be succinct.

Your presentation must be completed within the time allowed.

When you
meet
expectations

Your presentation should be responsive to questions.

You must be prepared to answer reasonable questions from the audience or judges.

* An “expert” is someone who is very familiar with the context of this question and who has a very competent and informed grasp of k-12 mathematics.

** You should have the report proof read by an expert. How about an English teacher?