

CUTTING EXPENSES		Student/Class Goal Students need math for the GED test and in their everyday lives. Working on a project to reduce household expenses gives students a chance to see how math works in their lives.
Outcome <i>(lesson objective)</i> Students will apply strategies for reducing expenses. They will practice operations with whole numbers and will construct bar graphs.		Time Frame Two 4 hour sessions Up to a month of documentation
Standard <i>Use Math to Solve Problems and Communicate</i>		NRS EFL 2-5
COPS Understand, interpret, and work with pictures, numbers, and symbolic information.	Activity Addresses Components of Performance Construct and use a chart to track expenses, use subtraction to find the difference, decide what information to use to construct a bar graph.	
Apply knowledge of mathematical concepts and procedures to figure out how to answer a question, solve a problem, make a prediction, or carry out a task that has a mathematical dimension.	Track expenses, find how much money is saved, construct a bar graph.	
Define and select data to be used in solving the problem.	Expenses before and after savings strategies, information to construct a bar graph.	
Determine the degree of precision required by the situation.	Computations need to be precise enough to make comparisons and construct graphs.	
Solve problem using appropriate quantitative procedures and verify that the results are reasonable.	Subtract to find how much expenses are reduced.	
Communicate results using a variety of mathematical representations, including graphs, chart, tables, and algebraic models.	Construct a bar graph, compare results, discuss results.	
Materials Flip chart paper and markers or overhead projector and blank film <i>Expense Comparison Chart</i> Example for Bar Graph Cutting Expenses Learning Objects		
Learner Prior Knowledge Students have performed operations with whole numbers. Students have read and interpreted		
Instructional Activities Step 1 - Students will brainstorm ways to reduce their household expenses. For example: using coupons, turning the heat down two degrees, making coffee instead of buying a famous brand, taking the bus instead of driving. The teacher or a student will record answers on the board or on flip chart paper. The teacher will guide the students to group the ideas into related categories and label the categories. For example: using coupons and making coffee might be grouped together under the category of Groceries; turning down the heat and taking the bus might be grouped together and labeled Household Expenses or Transportation. When students are finished grouping and labeling these ideas, they can use the web links included in this lesson to read about more expense reducing strategies. These strategies can be added to the appropriate categories. When all ideas are grouped and labeled, have students share which strategy they would start with to try to reduce their expenses. Each student will make a list of ideas that he/she will try by choosing strategies from each category. Step 2 - Students may want to use the <i>Expense Comparison</i> chart to track how much they spent on items in the previous month and how much they spend on these items during the month they are using the cost-cutting strategies they chose. Students may want to group their strategies using the broad categories from the activity in Step 1 and discuss short and long-term strategies. For example, it may take only a week to get information about how much they save using coupons at the grocery store but it may take a month to get information about how much their electric or gas bill goes down.		

Step 3 – When the students have finished collecting their expense information, they can do the following math activities. Teachers may want to assign the computations based on the students’ educational level so all students can contribute to the data.

- find how much they have reduced costs on each “item” and overall
- compare with other students how much they reduced expenses for each item and overall
- find the class average
- find what fraction of the original cost their saving is
- find what percent of the original cost their saving is

Step 4 - Because of the wide range of ability levels, the teacher may want to group students into multilevel groups with the more experienced students assisting the less experienced.

Explain to the class that they will use the data they have collected to construct a graph as a class. On an overhead or chart paper, reproduce the bar graph format found in the handout section of this lesson plan. Have the students find the total amount of money they saved for the month. Using these numbers and the students’ names, show the students the process for constructing a bar graph. Make sure the students are able to see bar graphs they have worked with before so they can use them for models. Guide the students through discussion about the vertical and horizontal axis, the units of measurement, etc. Once the bar graph is finished have students identify who reduced their costs the most, the least, etc.

Step 5 - Have students work in pairs or triads to help each other construct either individual or group bar graphs. Group graphs could show reduced costs in certain areas. Individual graphs could show how much was reduced in each area and overall.

Step 6 - The students who saved the most overall and who saved the most in each category could act as class experts and share the strategies they used to reduce their expenses.

WRITING STANDARD EXTENSION Students may want to write in their journals about their cost cutting experiences and what they learned.

Assessment/Evidence *(based on outcome)*

Lists of strategies, completed comparison chart, bar graphs and observations.

Teacher Reflection/Lesson Evaluation

Not yet completed.

Next Steps

Cutting Expenses Learning Objects will give students additional practice with their monthly expenses, needs and wants, and their personal spending plan.

Technology Integration

Money Saving Techniques <http://www.money-saving-techniques.net/>

5 Ways to Cut Household Costs <http://www.smartmoney.com/spend/family-money/5-ways-to-cut-household-costs/>

Top 7 Ways to Save on Household Expenses http://frugalliving.about.com/od/householdsavings/tp/Household_Save.htm

Household Expenses Tips http://www.everylastpenny.com/Household_Expenses/

How to Reduce Household Expenses <http://www.frugalmom.net/reducing-household-expenses.htm>

The Spending Plan <http://www.knowdebt.org/education/ACC.TheSpendingPlan.pdf>

Help With Life’s Financial Decisions <http://www.smartaboutmoney.org/>

Purposeful/Transparent

Improving math skills will help students pass the GED test; learning strategies to reduce expenses may help students be more efficient family members.

Contextual

Students are improving their math skills using their own expense information.

Building Expertise

These mathematical operations are not new to students, so this learning activity allows them time to practice math operations and graph construction.

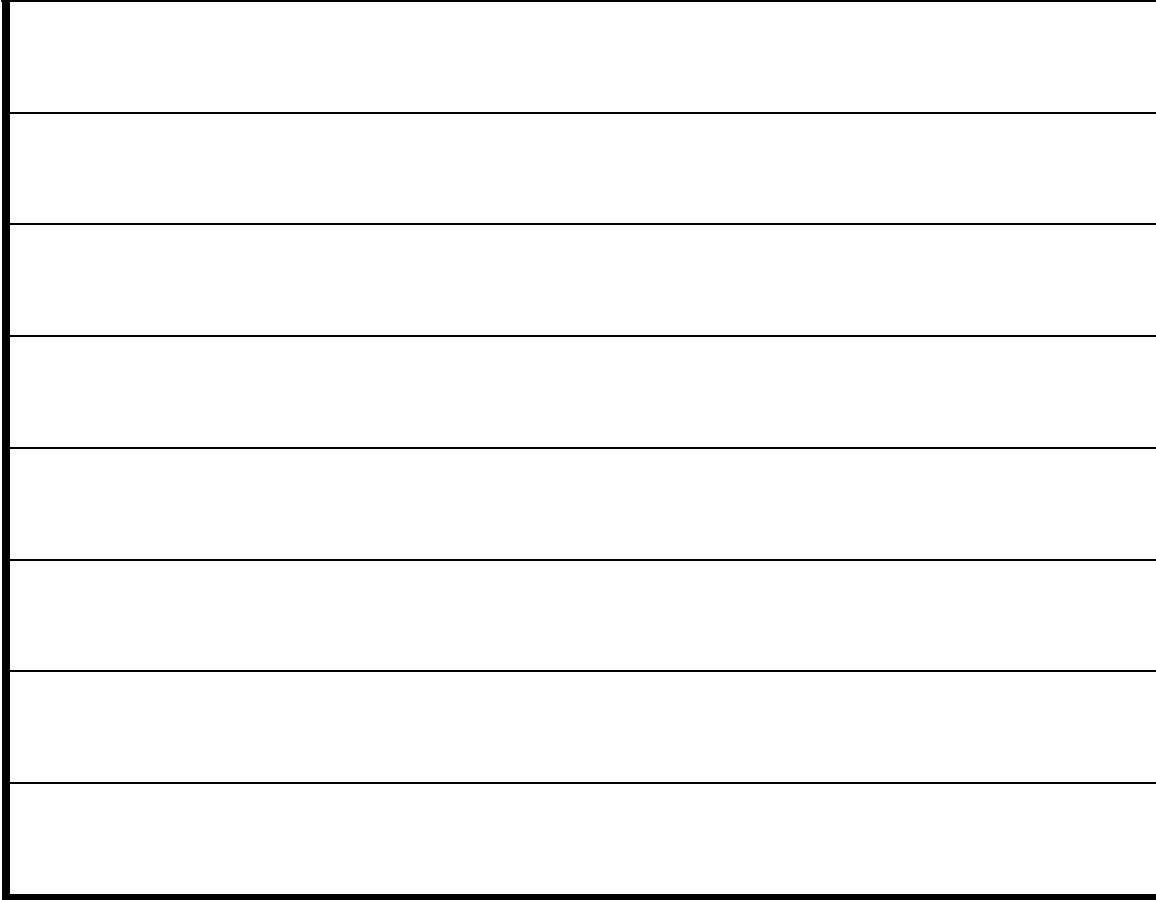
Expense Comparison Chart

Expense Categories	Expenses Last Month	Expenses This Month
Household		
phone bill		
house payment/rent		
transportation		
Groceries		
coffee		
eating out		
Total		

Name _____ Date _____

Example for Bar Graph

Dollar
Amount



Student Names



<http://www.wisconline.org>

Monthly Expenses Worksheet

Author: Kristin Biekkola

School: Fox Valley Technical College **Date:** 4/16/2002

Description: Students are provided with a Monthly Expenses Worksheet to help them understand the basics of budgeting, income, and spending.

http://www.wisc-online.com/objects/index_tj.asp?objID=ABM3202a

Needs vs. Wants

Author: Kristin Biekkola

School: Fox Valley Technical College **Date:** 4/8/2002

Description: The student reads information about the concept of needs and wants related to building a personal budget. In an interactive activity, the student identifies general purchases as "needs" or "wants" and lists the needs and wants in his/her own life.

http://www.wisc-online.com/objects/index_tj.asp?objID=ABM3302

Personal Savings/Spending Plan for Adults-Actual

Author: Kristin Biekkola

School: Fox Valley Technical College **Date:** 4/16/2002

Description: Students are provided with review information and exercised from the planning part of the "Personal Savings/Spending Plan for Adults" learning object. This activity provides students with a printout of their actual spending for their personal needs and wants.

http://www.wisc-online.com/objects/index_tj.asp?objID=ABM3202b

Personal Savings/Spending Plan for Adults - Projected

Author: Kristin Biekkola

School: Fox Valley Technical College **Date:** 4/10/2002

Description: Students are provided with information and exercises to understand the concept of needs and wants relating to building a personal budget. This activity provides students with a printout of their planned personal needs and wants.

http://www.wisc-online.com/objects/index_tj.asp?objID=ABM3202