WAMC Lab Template

Math Concept(s): Expense Reports, Creating Excel equations
Source / Text: Next Gen
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Attach the following documents:

- Lab Instructions
- Student Handout(s)
- Rubric and/or Assessment Tool

Short Description (Be sure to include where in your instruction this lab takes place):

Lab Plan

Lab Title: Plan a Friendsgiving

Prerequisite skills: Spread Sheets, Budget, needs vs wants, unit price

Lab objective: Students will be able to create an accurate budget report for the event.

Standards: *(Note SPECIFIC relationship to Science, Technology, and/or Engineering)*

Mathematics K–12 Learning Standards:

- A. Reason quantitatively and use units to solve problems.
  1. HSN-Q.A.1 Use units as a way to understand problems and to guide the solution of multistep problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
  2. HSN-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.

Standards for Mathematical Practice:

- Making a mathematical model

K-12 Learning Standards-ELA (Reading, Writing, Speaking & Listening):

- Integration of Knowledge and Ideas
  7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table)

Speaking and Listening Comprehension and Collaboration

- Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
  - A. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.
  - b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed

Science

Select appropriate tools to collect, record, analyze, and evaluate data. Science SEP 3

Technology

- 1.b. Students build networks and customize their learning environments in ways that support the learning process.
- 5.b. Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.

Leadership/21st Century Skills:

21st Century Interdisciplinary themes (Check those that apply to the above activity.)

☐ Global Awareness ☐ Financial/Economic/Business/Entrepreneurial Literacy ☐ Civic Literacy
☐ Health/Safety Literacy ☐ Environmental Literacy

21st Century Skills (Check those that students will demonstrate in the above activity.)

LEARNING AND INNOVATION

Creativity and Innovation
- ☐ Think Creatively
- ☐ Work Creatively with Others
- ☐ Implement Innovations

Critical Thinking and Problem Solving
- ☐ Reason Effectively
- ☐ Use Systems Thinking
- ☐ Make Judgments and Decisions
- ☐ Solve Problems

Communication and Collaboration
- ☐ Communicate Clearly
- ☐ Collaborate with Others

INFORMATION, MEDIA & TECHNOLOGY SKILLS

Information Literacy
- ☐ Access and Evaluate Information
- ☐ Use and manage Information

Media Literacy
- ☐ Analyze Media
- ☐ Create Media Products

Information, Communications and Technology (ICT Literacy)
- ☐ Apply Technology Effectively

LIFE & CAREER SKILLS

Flexibility and Adaptability
- ☐ Adapt to Change
- ☐ Be Flexible

Initiative and Self-Direction
- ☐ Manage Goals and Time
- ☐ Work Independently
- ☐ Be Self-Directed Learners

Social and Cross-Cultural
- ☐ Interact Effectively with Others
- ☐ Work Effectively in Diverse Teams

Productivity and Accountability
- ☐ Manage Projects
- ☐ Produce Results

Leadership and Responsibility
- ☐ Guide and Lead Others
- ☐ Be Responsible to Others

Teacher Preparation: (What materials and set-up are required for this lab?)

Materials

- Computer
- Lab Packet
- Writing Utensil
- Excel
- Internet Access

Set-Up Required:

- None

Lab Organization Strategies:

Leadership (Connect to 21st Century Skills selected):

Cooperative Learning:

- Students will be working in teams of 4-5 people. Each member is required to take role in the group.
    - Team Facilitator
    - Recorder
    - Timer
    - Presenter Leader

Expectations:

- It is expected that all students take a role in the group, complete a budget report for their recipe, and report back to their team.

Timeline:

- 2 days

Post Lab Follow-Up/Conclusions:

Discuss real world application of learning from lab

- Creating TSA Po's and Budget Reports

Career Applications

- Retail
- Business

Optional or Extension Activities

- Plan a Friends/Family Trip

PROJECT: Plan a Friendsgiving Dinner

Imagine this: You and your friends (from class) are getting together for a "Friendsgiving Dinner" over the Thanksgiving holiday. One person's hosting at their house, and everyone's bringing dishes for a grand feast. Collaborate, using the steps below, to coordinate your Friendsgiving. Your goal is to complete a budget for what this event is going to cost.

Step 1: Form a group of a realistic size. Remember, more group members means you need more food, but you'll have more friends at the party and potentially more variety of dishes.

Step 2: Collaborate to plan a menu of what dishes you'll all bring to Friendsgiving. Depending on the size of your group, some people may need to bring more than one item.

Step 3: Each group member provides a recipe for the item(s) they're making. This allows us to see which groceries you'll need to buy.

Step 4: Each student will complete this Recipe Expense Report[1,2] for each recipe item in their Friendsgiving dish(es). Each column is described below:

- **Item**: The ingredient (ex: 2 pounds beef, 4 eggs, 5 green peppers, 2 trays store-bought cookies)
- **Store:** The grocery store, market, or online vendor where you're buying the item
- **Unit price:** The cost of buying the item in whatever quantity is best suited for your recipe (ex: $3.99 per pound, $2.50 per dozen, $1.50 per pepper, $4.99/tray)
- **Total cost:** The cost of the item as called for in your recipe (ex: $7.98 for the beef, $0.83 for 4 eggs, $7.50 for 5 peppers, $9.98 for two trays)
- **Cost per person:** Total cost of the item divided by the number of people you're serving
- *NOTE: You can assume your pantry includes basic staples -- any herbs or spices you need, cooking oil, flour and other baking needs, and drinking water. Everything else, you should plan on buying for your event.

[1] How To: Entering & Editing Data

[2] How To: Equations with Relative Cell References

Step 5: Bring each of your expense reports together and compile the information into this one Friendsgiving Dinner Budget.

What Your Group Will Submit:

A. A cover page for your event. It should provide (at least) the names of your group members and the menu.
B. A copy of each recipe on the menu
C. The Recipe Expense Report for each recipe
D. The Friendsgiving Dinner Budget
E. Appropriate Chart Showing How Much Each Person is spending
F. Collaborative, group response to the reflection questions asked below

Reflection Questions:

1. Are you surprised by the total cost of preparing your Friendsgiving dinner? Is it higher or lower than your group expected?

2. How does your price per person compare to the cost of one person eating at a fastfood restaurant? What about the cost of eating at a family restaurant like TGI Fridays or Applebees?

3. What makes hosting people for a meal at someone's home better than buying them a meal at a restaurant? In what ways is the restaurant a better option?

4. How much comparison shopping did you do in order to get the best prices? What was your strategy? Did every group member attempt to be equally thrifty?

5. If, for budgetary reasons, you determined you needed to cut your budget for this menu by 10%, how would you do it? What would be the tradeoffs?

6. Typically, with a potluck, each person brings a dish they've prepared, and they don't collect money from anyone. With the menu you've selected, is it equitable for everyone involved?

7. What recommendations would you give a group of friends considering a Friendsgiving Dinner?