

WAMC Lab Template

Math Concept(s): estimating, averages, probability.

Source / Text: Cengage Financial Algebra, Building Blocks Student Handbook, FEPPP

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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):

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Lab Plan

Lab Title: Mutual Aid & budgeting

Prerequisite skills: vet internet sources, calculate percentages, use variables.

Lab objective: Prepare students to engage in mutual aid with their support networks in ways that support their career goals.

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. 3. HSN-Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Standards for Mathematical Practice:

- Mathematical Practices 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

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

- **Integration of Knowledge and Ideas**
- Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.
- **Research to Build and Present Knowledge**
- Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

- **Comprehension and Collaboration**
- Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.

K-12 Science Standards

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Technology

- 6.d. Students publish or present content designed for specific audiences and select platforms that will effectively convey their ideas to those audiences. Samples of student performance (by the end of grade 8):
 - Students evaluate the effectiveness of a digital tool to communicate information with multiple audiences.
 - Students share what is learned about a topic, problem, or question with multiple audiences.
 - Students use digital tools to document personal learning experience and receive feedback from peers.

Engineering

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Leadership/21st Century Skills:

21st Century Interdisciplinary themes (Check those that apply to the above activity.)			
<input checked="" type="checkbox"/> Global Awareness	<input checked="" type="checkbox"/> Financial/Economic/Business/Entrepreneurial Literacy	<input checked="" type="checkbox"/> Civic Literacy	
<input checked="" type="checkbox"/> Health/Safety Literacy	<input type="checkbox"/> Environmental Literacy		
21st Century Skills (Check those that students will demonstrate in the above activity.)			
LEARNING AND INNOVATION	INFORMATION, MEDIA & TECHNOLOGY SKILLS	LIFE & CAREER SKILLS	Productivity and Accountability
<u>Creativity and Innovation</u>	<u>Information Literacy</u>	<u>Flexibility and Adaptability</u>	<u>Accountability</u>
<input type="checkbox"/> Think Creatively	<input type="checkbox"/> Access and Evaluate Information	<input checked="" type="checkbox"/> Adapt to Change	<input type="checkbox"/> Manage Projects
<input type="checkbox"/> Work Creatively with Others	<input type="checkbox"/> Use and manage Information	<input checked="" type="checkbox"/> Be Flexible	<input type="checkbox"/> Produce Results
<input type="checkbox"/> Implement Innovations	<u>Media Literacy</u>	<u>Initiative and Self-Direction</u>	<u>Leadership and Responsibility</u>
<u>Critical Thinking and Problem Solving</u>	<input type="checkbox"/> Analyze Media	<input type="checkbox"/> Manage Goals and Time	<input type="checkbox"/> Guide and Lead Others
<input type="checkbox"/> Reason Effectively	<input type="checkbox"/> Create Media Products	<input type="checkbox"/> Work Independently	<input type="checkbox"/> Be Self-Directed Learners
<input type="checkbox"/> Use Systems Thinking	<u>Information, Communications and Technology (ICT Literacy)</u>	<u>Social and Cross-Cultural</u>	<input checked="" type="checkbox"/> Be Responsible to Others
<input checked="" type="checkbox"/> Make Judgments and Decisions	<input checked="" type="checkbox"/> Apply Technology Effectively	<input type="checkbox"/> Interact Effectively with Others	
<input type="checkbox"/> Solve Problems		<input checked="" type="checkbox"/> Work Effectively in Diverse Teams	
<u>Communication and Collaboration</u>			
<input checked="" type="checkbox"/> Communicate Clearly			
<input checked="" type="checkbox"/> Collaborate with Others			

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

Materials

- White Board, case studies, pen/ paper, overhead projector

Set-Up Required:

- Table groups & whole group discussion.

Lab Organization Strategies:

Leadership (Connect to 21st Century Skills selected):

- Cooperative Learning: Pre-frame discussion around perspective/ expertise/ experience

- Expectations: Take risks and contribute, respect personal boundaries, own perspective; “I have experienced...”/ “I have heard or seen...”/ “I wonder if...”

- Timeline: 1h component of larger personal budgeting unit

Post Lab Follow-Up/Conclusions:

Discuss real world application of learning from lab

- Help graduates manage their networks basic needs without jeopardizing their career.

Career Applications

- Apprenticeship/ early wage earning.

Optional or Extension Activities

- Students who miss this unit could make up activity through an elder interview assignment

<https://wa-appliedmath.org/>