

WAMC Lab Template

Math Concept(s): Principal/Rate/Time

Source / Text: N/A

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Attach the following documents:

Lab Instructions

- The lab will begin with a demonstration of a negotiation to get a loan for a product like a car or a refrigerator
- Students are to pair up.
- Each pair will be assigned as either a lender or a borrower.
- Each pair will be matched up with a pair of the opposite side, borrower vs. lender.
- Each of the two pairs will be given a credit report and a credit application with the amount of money needed and the purpose for the borrowing pair.
- With the student handouts on the borrowing pair each pair/side of students will then prepare to debate as to why the borrowing pairs should be given the amount of the loan. They will also negotiate the terms of that loan to include the interest rate, the length of the loan, or why the borrowing pair should not receive the loan. If the borrowers are rejected, the lenders must be able to rationalize why the borrowers are rejected from the receiving the loan.
- Each pair of students must research the type of loan they believe the borrowers should get based on their credit worthiness, the value of the product, or whether the borrowers can repay the agreed upon loan.

Student Handout(s)

- Credit report
- Salaries/Income report
- Credit application
- Product report

Rubric and/or Assessment Tool

- Presentation rubric

Indicate “SPECIFIC” relationship to Science, Technology, or Engineering

Technology for banking

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

Students will gain understanding of how principal, interest rates, and time work when purchasing a product on credit. Students will use the CTE COW (Computer on Wheels) for their research and will be provided the posters or presentation board to use during their negotiations.

Lab Plan

Lab Title: Negotiating a loan

Prerequisite skills:

- Understanding of the formulas for credit (i.e. $P(1+r)^n$)
- Understanding what money and credit is.
- Understanding what credit is.
- Understanding credit scores and how they relate to the lending process.
- Understanding how to build credit, what builds credit and what hurts credit.
- Understanding how credit works and the different type of credit and how each of the different types are calculated

Lab objective:

- Each pair of students will try to negotiate the best loan situation for their position. This does not mean they do not lend, because lending to the borrowers makes for a possible win-win situation. The borrowers are able to make their purchase; the lenders make profit in the terms of interest. The pair that gets the best loan terms will “win” in the negotiations.

Standards:

Mathematics K–12 Learning Standards:

- A-SSE-1 Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P .*

Standards for Mathematical Practice:

- MP1, MP2, MP3, MP5, & MP6

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

- ELA – RI
- ELA – W

Leadership/21st Century Skills:

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

- Computers (laptop)
- Internet
- Presentation paper/poster board
- pencils/pens
- paper
- Student handouts

Set-Up Required:

- Get CTE COW (Computers on Wheels)
- Ensure Internet is operational

Lab Organization Strategies:

Leadership (Connect to 21st Century Skills selected):

- Cooperative learning/collaborate with others/complete tasks within group (pairs)
- Communicate clearly/works creatively with others
- Prepared to present on time

Cooperative Learning:

- Students will be in pairs.
- Each pair will be given a position of either a lender or borrower. Each pair will learn to negotiate their position with the information they are given.

Expectations:

- Students will gain understanding of how principal, interest rates, and time work when purchasing a product on credit.

Timeline:

- 200 minutes for research and negotiations.

Post Lab Follow-Up/Conclusions:

Discuss real world application of learning from lab

- Students need to learn how the flow of money through the credit system or banks works.

Career Applications

- Banking and lending,
- Procurement Specialist

Optional or Extension Activities

- Other labs that should be created on lending and borrowing.
- Labs on money and how money works

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