

Surviving the Month

I. UNIT OVERVIEW & PURPOSE:

Pre-activity and lessons will introduce key components of making a budget. During these first lessons, students will be determining costs of various things, and looking at options from which to make decisions. Then, each student will be given a scenario. For which they will research, make decisions and calculations, and eventually create a monthly budget. This will give students an opportunity to see how mathematics they've learned in a classroom applies in the real-world, while reinforcing and extending skills and concepts they've learned in their Economics and Personal Finance class. This unit is comprised of lessons that build to the final product of creating a monthly budget.

II. UNIT AUTHOR:

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III. COURSE:

Mathematical Modeling: Capstone Course

IV. CONTENT STRAND:

Number and Operations

V. OBJECTIVES:

EPF.11, EPF.12, EPF.13, EPF.15, EPF.17 (Economics and Personal Finance objectives)
NCTM: Number and Operations, Algebra, Problem Solving, Communications, and Connections

VI. MATHEMATICS PERFORMANCE EXPECTATION(S):

MPE.1: The student will solve practical problems involving rational numbers, percent, ratios, and proportions.

VII. CONTENT:

Upon completion of this unit, students will have reinforced and built upon their skills related to percent, estimation, rounding, and developing problem solving skills. By doing research, collaboration, and using technology they will develop a monthly budget based on actual data and research. Not only is budgeting a real-life skill they need, but research and collaboration are also important 21st century skills. This unit will involve 5 lessons, which all build to the final outcome of a monthly budget. Each student will be given a scenario describing a person who is developing a monthly budget. They will personalize the scenario by applying their own gender and race. This will allow for diversity and relevance for the students. By working in groups for some of the lessons, the students will have an opportunity to share and discuss the various scenarios along with any challenges or decisions they faced.

VIII. REFERENCE/RESOURCE MATERIALS:

The resource and reference materials the students will use include worksheets, calculators, journals, and the Internet (Excel and PowerPoint are optional resources)

IX. PRIMARY ASSESSMENT STRATEGIES:

The primary unit assessment will be the final budget along with the presentation of that budget. Additional assessments will be a journal each student will keep throughout the unit, as well as the activities/worksheets for each lesson.

X. EVALUATION CRITERIA:

The monthly budget will be assessed based on the following criteria: Research of occupation, mathematics supports the values used in the monthly budget.

The journal will be assessed three different times throughout the unit, using a rubric for each. The first check will be after the pre-activity. The second check will occur after the completion of lessons 1 thru 3. The final check will occur after the completion of the unit.

Rubrics are included at the end of each lesson.

XI. INSTRUCTIONAL TIME:

This unit will take 8.5-90 minute blocks or 17-45 minute blocks.

Pre-Activity

Description:

The month prior to the start of this unit, students will be required to keep a detailed journal of all their family's expenses. They will be required to communicate with their family about monthly spending habits and financial choices that have been made. Entries should be made (and dated) daily as much as possible.

Objective:

Students will gain insight into budgeting so they can realize how math applies in everyday life.

NCTM Standards

- Connections: Recognize and apply mathematics in contexts outside of mathematics.
- Problem Solving: Monitor and reflect on the process on mathematical problem solving.

Materials/Resources

The only material needed for this is a journal. The journal can be a hard copy (i.e. notebook) or electronic (i.e. productivity apps, Word document, Excel spreadsheet).

See attached for detailed assignment (entitled Pre-Activity).

If students cannot use or access personal information for this assignment, they can research for information online.

Setting up the Task

- Time: 1 month
- Students will keep a journal of monthly expenses.
- As a result of interactions with their families (or research), students will draw on the experiences and knowledge of their families (or fictitious families) to guide them in eventually creating a personal budget.

Monitoring Student Responses

- Students will communicate their thinking and new knowledge in their journals.
- Teacher will monitor journal activity randomly at least once during the month.
- Teacher will be available to help guide students who may be in challenging family situations. This could be accomplished by having a prepared document for those students with a sample family's information or interviewing other adults the student may have a relationship with.

Assessment

- **Journal/writing prompts**

- Calculate the total amount your family (or the fictitious family) spends per month based on the information you have gathered in your journal.
- What is the minimum amount of money required to support this family based on these expenses?
- What do you notice about this family's spending habits?
- Talk with your family about what deductions are taken out of their income (i.e. medical, dental, taxes, 401K, life insurance, other..)
- Evaluation criteria:
 - Prompts: all prompts answered with thought and detail (rubric attached at end of lesson)
 - Expenses: at least 4 weekly entries (rubric attached at end of lesson)

Pre-Activity Directions:

You will keep a journal with some of your family's monthly expenses. Please include as many of the following as possible:

- Weekly cost of food
 - Groceries
 - Restaurant/ Fast food
- Housing cost (rent or mortgage)
- Utilities (electricity, water, sewage, trash, gas, oil)
- Other household expenses (cable, internet, phone)
- Transportation
 - Car (include gas, insurance, and maintenance)
 - Bus
- Entertainment
 - Movies
 - Vacations
 - Outing (sporting events)
- Other
 - Clothing
 - Gym

This list is not all inclusive. There may be other expenses that your family incurs monthly and there may be some that your family does not incur. This journal should be kept throughout the month, with entries being made weekly, and will be checked at least once during the month.

After your journal entries are complete please respond to the following in your journal:

1. Calculate the total amount your family spends a month based on the information you have gathered in your journal.
2. What is the minimum amount of money required to support your family for a month based on these expenses?
3. What do you notice about your families spending habits?
4. Talk with your family about what deductions are taken out of their income. (i.e. medical/dental/taxes/401K plan/insurance)

Journal Check 1: Monthly Expense Journal Entries

How many entries does the journal have?

No Entries	1 Entry	2 – 3 Entries	4 or more Entries
0 points for no response made	5 point	15 points	20 points

How detailed is the expense report?

No details	Cost but no detailed descriptions	Cost with limited detailed descriptions	Meets expectations	Exceeds expectations
0 points	5 points	10 points	15 points	20 points

Questions for Pre-Activity (1-4)

No response	Answers questions	Answers questions with limited detail	Meets expectations	Exceeds expectations
0 points	5 points	10 points	15 points	20 points

Lesson 1: Why Budget?

Description:

Students will learn the different types of expenses (fixed costs versus variable costs); learn how to distribute income in order to meet expenses. Students will learn about living beyond their means, dealing with unexpected expenses, making choices about cutting costs and/or saving money.

Mathematical Objective(s)

Students will analyze pre-made budgets and infer the differences between the actual and budgeted total expenses. Students will calculate social security, federal and state tax deductions.

NCTM Standards

- Number and Operations: Compute fluently and make reasonable estimates.
- Algebra: Analyze change in various contexts.
- Problem Solving: Apply and adapt a variety of appropriate strategies to solve problems.

Materials/Resources

- Each student will need his/her journal.
- Calculators, if available, would be helpful but not necessary.
- Internet

Setting Up the Mathematical Task

- Time: Two 90-minute blocks or 4-45 minute periods.
- Prior to this lesson, the teacher should review the following vocabulary: budget, fixed expenses, variable expenses, federal income tax, state income tax, and social security. The teacher should also discuss what a balanced budget is.
- Students will do several explorations for this lesson. In groups, they will compare and contrast their findings from their journals, make decisions/choices about their spending, create a budget based on their findings and what they would like to spend on the items, and analyze various scenarios related to income, expenses, and balanced budget. (See attached exploration sheets at the end of this lesson).

Student Exploration 1: Looking at Expenses

Small Group Work: Students will form groups of 3-4 students, where they will compare and contrast the differences in their expense findings in their journal. They will answer some

questions, and perform a few tasks in order to encourage them to begin thinking about choices and decisions made related to a budget. (See sheet attached at the end of this lesson.)

Monitoring Student Responses

- students will communicate their thinking and their new knowledge by collaboratively answering the given questions and performing the tasks;
- teacher will assist students who have difficulties by using questioning techniques to help direct their thinking;
- each group will submit responses to Exploration 1

Student Exploration 2:

Individual Work

Student/Teacher Actions:

- Students will complete Exploration 2, which is a chart where they will enter expenses they expect to incur in one month. Then, they will use the information from their journals to enter the exact amounts, and finally calculate the difference between these two amounts.
- The teacher will circulate around the room while the students are working to keep them focused and answer questions that may arise.
- For this exploration, students may use the Internet to research what possible costs may be and can also use calculators to do their calculations.

Monitoring Student Responses

- teacher will assist students who have difficulties by trying to direct their thinking through questioning; and
- Evidence of their learning will be realized from completion of the chart. (attached at end of this lesson)

Student Exploration 3:

Individual Work

Student/Teacher Actions:

- Students will work individually to answer questions based on given situations.
- Teacher will circulate around the classroom to keep students focused and answer any questions.
- Students may use calculators for this exploration, but they are not required.

Monitoring Student Responses

- students will communicate their thinking and their new knowledge by answering questions;

- Teacher may need to assist students who have reading difficulties by reading the scenarios to them.
- evidence of student learning will be assessed by the answers to the given questions. (See attached Exploration 3 at the end of this lesson)

Assessment

- Exploration 1 will be assessed on complete and thoughtful answers.
- Exploration 2 will be assessed on accuracy.
- Exploration 3 will be assessed on completion, thoughtful, and correct (where appropriate) answers.

Strategies for Differentiation

- ELL students should have access to a dictionary for vocabulary they may not understand.

Exploration 1: Form groups of 3 to 4 students. Within your group, compare and contrast your monthly expenses from your journal. As a group answer the following questions.

1. Examine and list any expenses that are the same. You may choose to make categories for the expenses, but be sure to name those categories and what they include.
2. Devise a plan that would cut the cost of your monthly expenses by \$200. Each member of the group should use their individual expense journal to answer
 - a. Where would you choose to make the cuts?
 - b. Explain why your group decided to make those cuts.
 - c. Discuss any different opinions your group had about where to make those cuts.
3. Your family is planning on taking a trip in the next few months. They would like to save at least \$350 for spending money. Write a plan for your family to use to start saving money.

Exploration 2:

Column 1: Use the information below to make a budget of your expenses for a month (what you think your family will pay). You must use the information to complete your planned budget. Assume all deductions have already been removed from the income. Any amounts in bold can't be changed. Total expenses CANNOT be more than total income. You are not to use your journal for this part.

Category	Monthly Budget	Monthly Actual Amount	Difference
Monthly Income (after taxes)	\$2500		
Expenses			
Housing	\$600.00		
Utilities			
<i>Electricity</i>			
<i>Water and sewer</i>			
<i>Natural gas</i>			
<i>Telephone</i>			
Food			
<i>Groceries</i>			
<i>Eating out</i>			
Transportation			
<i>Car payment</i>			
<i>Bus</i>			
<i>Gas</i>			
<i>Insurance</i>			
<i>Maintenance</i>			
Debt Payments <i>(credit cards/ student loans)</i>	\$125.00		
Entertainment			
Clothing			
Other (ex. Donations or personal savings)			
Total Expenses			

Column 2: Use the information from your journal to complete the actual amounts. Calculate the difference between your budget and the actual amount, and enter those in Column 3. Use 0 to indicate no difference. Use a minus to indicate if the Column 2 exceeds Column 1 and a plus to indicate if Column 1 exceeds Column 2.

Exploration 3: Below you will find three different scenarios.

Scenario 1: Tammy has a monthly income of \$3000. Her total expenses for the month are \$2500. Describe Tammy’s spending habits. Include in your response if you think she is living within her budget. If she is not, discuss changes and/or adjustments Tammy can make in order to meet her monthly budget.

Scenario 2: Albert has a monthly income of \$2000. His total expenses for the month are \$2500. Describe Albert’s spending habits. Include in your response if you think he is living within his budget. If he is not, discuss changes and/or adjustments Albert can make in order to meet his monthly budget.

Scenario 3: Jennifer is planning to attend a concert next month, so she needs to save \$175. Below you will find Jennifer’s budget for the month.

Wages (including any deductions)	\$3245.00
Extra income	100.00
Rent or Mortgage	\$1800
Car Insurance	\$ 75
Utilities	\$139
Food	\$375
Debt	\$500
Entertainment	\$340

- What is the total income?
- What are the total expenses?
- Is the budget balanced? Explain your response.
- Will Jennifer be able to attend the concert next month? Explain your response.
- Will Jennifer have money left to put in a savings account? If so, how much? If not, why not?

Lesson 1, Exploration 3 Sample Answers

Scenario 1: Tammy has \$500 left after her expenses. She appears to be living within her budget.

Scenario 2: Albert has expenses that exceed his income, and therefore is not living within his budget. He must either cut expenses in some way, or get a second job to supplement his income.

Scenario 3:

- a. \$3345
- b. \$3229
- c. Her expenses are less than her income, so no it is not balanced. However, she does have extra money to spend.

She cannot afford to go to the concert. She only has \$116 left after paying her expenses

Lesson 2: Where Do I Live? How Do I Get There?

Mathematical Objective(s)

Students will use the compound interest formula to calculate monthly payments. They will also use this formula to make decisions related to getting a loan.

NCTM Standards

- Numbers and Operations: Compute fluently and make reasonable estimates.
- Algebra: Analyze change in various contexts.
- Connections: Recognize and apply mathematics in contexts outside of mathematics.

Materials/Resources

- Calculators
- Before the lesson, the teacher will discuss how to calculate a home mortgage and car payment. The following should be included in this discussion: how to compute simple interest, compound interest, and finance charges. There should also be a discussion of the pros and cons of buying and renting.

Setting Up the Mathematical Task

- Time: 1.5-90 minute blocks, or 3-45 minute periods.
- Students will calculate monthly payments for loans for various scenarios. Based on these calculations and given information, they will make decisions about different options presented. This will be done through the three explorations for the lesson.
- Students will work individually on this lesson.

Student Exploration 1:

Individual Work

Student/Teacher Actions:

- The students will read the problem presented, which presents an unexpected situation that must be immediately resolved. Students will calculate the monthly payment if they borrow the full amount and compare that to the payment if they use their savings to make some cash payment (lowering the loan amount). They will answer related questions that encourage them to consider options in this situation.
- Teacher will circulate around the room to keep students focused and answer any questions that arise.
- Calculators are the only technology needed for this lesson.

Monitoring Student Responses

- students will communicate their thinking and their new knowledge by completing the activity and answering the questions;
- teacher will assist students who have difficulties by trying to focus their thinking using questioning techniques; and
- evidence of learning will be collected when they finish the exploration.

Student Exploration 2:

Individual Work

Student/Teacher Actions:

- Students will complete Exploration 2, which explores buying a car and options associated with that process.
- Teacher will circulate around the room to keep students focused and answer any questions that arise.
- Calculators will be used for this activity.

Monitoring Student Responses

- students will communicate their thinking and their new knowledge by completing the exploration and answering the questions;
- teacher will assist students who have difficulties by trying to focus their thinking using questioning techniques; and
- Evidence of student learning will be realized by assessing the completed exploration.

Student Exploration 3:

Individual Work

Student/Teacher Actions:

- Students will complete Exploration 3, which explores buying a house and options associated with that process.
- Teacher will circulate around the room to keep students focused and answer any questions that arise.
- Calculators will be used for this activity.

Monitoring Student Responses

- students will communicate their thinking and their new knowledge by completing the exploration and answering the questions;
- teacher will assist students who have difficulties by trying to focus their thinking using questioning techniques; and
- evidence of student learning will be realized by assessing the completed exploration.

Assessment

- The completed explorations for this lesson will be assessed for accuracy and thoughtful, well-supported answers.

Strategies for Differentiation

- ELL learners should have access to a dictionary for any unfamiliar vocabulary
- Teachers should read, and re-phrase if necessary, for students with reading challenges.

Exploration 1: As a result of a heavy storm the roof of your home was damaged. You don't have enough money budgeted for the month to pay for the repair, therefore you can't afford the \$6000 cost of fixing the roof. The loan will be for 3 years at a rate of 4%.

- a. Calculate your monthly payment.
- b. You have \$1000 in your savings account. If you pay this towards the cost, and get a loan for the balance, how much would your monthly payment be?
- c. By paying some of the cost in cash, how much money would you save per month? How much would you save over the term of the loan?
- d. Which option (a or b) would you choose? Why?

Exploration 2: You would like to purchase a car but are not sure how much you can afford. Your target monthly payment is \$230. You would like to spread your payments over 5 years. The current percentage rate is 4.5% for new cars and 9.5% for used cars.

- a. The new car you would like has a sticker price of \$12,000. Based on your target payment, can you afford this car? Why or why not?
- b. Your neighbor has a used car for sale and is asking \$11,000. Based on your target payment, can you afford this car? Why or why not?
- c. If you have \$1500 as a down payment, how much will your monthly payment for the new car be? What would the monthly payment for the used car be? For each type of car, how much money would you save over the term of the loan if you made the down payment?
- d. Which option would you prefer – new or used car? Making a down payment, or borrowing the full amount? Explain your answer.

Exploration 3: You would like to purchase a home for \$200,000. Mortgage loan rates are currently 4.25% and are available for terms of 10 years, 15 years, and 30 years. Calculate the monthly payment for each of these options. Consider pros and cons of each of these options, and list at least one pro and one con for each.

Lesson 2, Exploration 1 Answer Key

- a. \$177.14
- b. \$147.62
- c. $\$6377.04 - \$5314.32 = \$1062.72 - \1000 (down payment) = savings of \$62.72
- d. Answers may vary

Lesson 2, Exploration 2 Answer Key

- a. \$223.72 would be the monthly payment. Since this is less than \$230, then I can afford it.
- b. \$231.02 would be the monthly payment. Since this is more than \$230, then I cannot afford it.
- c. New car: \$195.75; total = $\$13423.20 - (\$11745 + \$1500) = \178.20
Used car: \$199.52; total = $\$13861.20 - (\$11971.20 + \$1500) = \390
- d. Answers may vary

Lesson 3, Exploration 3 Answer key

10 years: \$2072.77 TOTAL paid: \$248,732.40

15 years: \$1529.99 TOTAL paid: \$275,398.20

30 years: \$1013.37 TOTAL paid: \$364,813.20

Answers may vary.

Lesson 3: Defining Me

Objective:

Students will develop their personal information from which they will be creating a budget. Some of the information will be assigned to them, some will be actual facts about them, and some will be chosen by them.

Additional Objectives for Student Learning:

- Students will learn to research potential careers and jobs.

Materials/Resources

- Students will go to the websites listed in Exploration 1 to determine federal and state income tax deductions. If Internet (or computers) is not available, then the chart attached after the lesson can be given to the students. They will also complete the biography form.
- Students will need their journals.
- Before the students begin Exploration 1, the teacher will discuss how to calculate federal and state income tax and social security deductions.

Setting up the Task

- In this lesson, you will develop your personal biography based on a combination of fact and fiction.
- Time: Two 90 minute blocks or 4- 45 minute periods.
- The students will each be given a scenario that describes their educational background, marital status, and number (if any) of children. They will use that information, along with their own information, to create their biography by filling in the form (see attachment at end of lesson).
- Students will complete Explorations 1 and 3 individually and Exploration 2 will be done in groups.
- The students will use the sheet to complete the biography sheet after thought and research. The research can be done using the Internet, current books, and/or interviews with friends or family. At the end of the lesson, each student will answer given questions in his/her journal.

Student Exploration 1:

Individual Work

Student/Teacher Actions:

- Students will take their given scenario (see attached list at end of this lesson), and add their actual age, gender, and race (the facts about the student). Students will then choose a career based on their education/training at that point in their life, determine the mode of transportation they will be using, make their housing preference, and pick an occupation. The teacher will provide the students with a locality in which they will be living.
- Teachers should circulate around the room to keep students focused on the task at hand.
- Technology can be used as students research career options.

Monitoring Student Responses

- students will communicate their thinking and their new knowledge by writing their findings in their journal; and
- Teacher will assist students who have difficulties by helping to direct their thinking using questioning techniques.
- evidence of students' knowledge of the content described will be collected by looking at the students' responses to the journal prompts.

Student Exploration 2:

Small Group Work

Student/Teacher Actions:

- Students will work in groups with students that have a similar scenario. By communicating and collaborating with their group, they will create their individualized personal biography.
- While students are working, teacher will be circulating around the room, directing students' thinking and focus as needed.
- Technology can be used to further conduct research for information to complete the biography.

Monitoring Student Responses

- students will communicate with each other by discussing options for the biography; and

- Teacher will assist students who have difficulties by trying to direct their thinking through questioning techniques.
- evidence of students' knowledge of the content described will be realized by their individual, unique biographies.

Student Exploration 3:

Individual Work

Student/Teacher Actions:

- Students will respond to prompts in their journals.
- Teacher will circulate around the room to keep students focused.

Monitoring Student Responses

- students will communicate their thinking by answering the prompts; and
- Teacher to assist students who have difficulties by reading the prompts and using questioning techniques to direct their thinking.

Assessment

- Assessments are attached at the end of this lesson.
- Exploration 2 will be assessed based on completion.
- Exploration 3 will be assessed with the other journal entries, using the rubric at the end of this lesson.

Strategies for Differentiation

- ELL students should have a dictionary to help with unfamiliar vocabulary.

Scenarios for Exploration 1

Each student should be assigned one of the following so that there are an equal number of students with each scenario.

1. High School drop out with 1 child
2. Unmarried college graduate with a degree in English
3. High School graduate that completed the tech program for cosmetology with 1 child
4. High School graduate that attended ECPI
5. College graduate with a degree in biology married with 2 children
6. College student

Exploration 1

Using the information you have been given, you will create a biography using the attached sheet. Be sure you research your career by using either the Internet or talking with a family member, or other adult. You will need to calculate the amount of federal (<http://www.irs.gov/pub/irs-pdf/i1040tt.pdf>) and state (<http://www.tax.virginia.gov/site.cfm?alias=TaxCalculator>) income tax withheld, and social security deductions (http://ssa-custhelp.ssa.gov/app/answers/detail/a_id/240/~social-security-and-medicare-tax-rates%3B-maximum-taxable-earnings). These amounts are to be written in your journal.

Exploration 2

Biography		
PERSONAL INFORMATION		
Name:		
Date of birth:		Phone:
Current address:		
City:	State:	ZIP Code:
EMPLOYMENT INFORMATION		
Current employer:		
Employer address:		How long?
Phone:		
City:	State:	ZIP Code:
Position:	Hourly Salary (Please circle)	Annual income:
EDUCATION		
Name of High School:		
Diploma earned: yes or no	If so year:	
Technical Training Program		
Program:	Certificate earned: yes or no	Year earned:
College Attended:	Program:	Degree earned: yes or no
Type of Degree		
Year earned:		
EMPLOYMENT INFORMATION		
Current employer:		
Employer address:		How long?
Phone:		
City:	State:	ZIP Code:
Position:	Hourly Salary (Please circle)	Annual income:
HOUSING		
Rent or Own:	Monthly payment:	
Do you share the housing cost?		
TRANSPORTATION		
Type	Balance, if applicable	Monthly cost

Exploration 3

Respond to each question in your journal.

1. Explain why you have chosen your occupation.
2. What research did you do to make that decision? Provide links and/or names of people interviewed.
3. Now that you have completed this activity how has your biography changed? Why?
4. How do you think this compares to your own family's expenses?
5. What did you consider when deciding on housing? Transportation?

Journal Check 2: This should be completed after lesson 1-3.

Completion of Questions	Lesson 1: Exploration 1	Questions after lessons 2 & 3
0 points for 0 entries	0 points for no response made	0 points for no response
1 point for 1-2 questions completed	1 -2 points for 1 or 2 insightful replies	1 -2 points for 1 or 2 insightful replies
2 points for 3-4 questions completed	2 -3 points for some insightful and detailed replies	2 – 3 points for some insightful and detailed replies
3 points for 5 - 6 questions completed	3 - 4 points for some detailed and making mathematical connections	3 – 4 points for some detailed and making mathematical connections
4 points for all questions completed		

Lesson 4: The Price is Right

Mathematical Objective(s)

Students will use all the tools and skills they have learned about so far in this unit and apply them to create a personal monthly budget based on the biographical information from the previous lesson.

NCTM Standards

- Number and Operations: Compare fluently and make reasonable estimates.
- Problem Solving: Apply and adapt a variety of appropriate strategies to solve problems.
- Connections: Recognize and apply mathematics in contexts outside of mathematics

Materials/Resources

- Calculators
- Pencil and paper (budget can be done in Excel or other similar program, if it is available and the students are familiar with the program)
- Optional: Budget template similar to the one used for Exploration 2, or other template teacher has.

Assumption of Prior Knowledge

- The student should now understand the various formulas, techniques, and areas for consideration when planning a budget.
- The Pre-Activity gave students an introduction to this exercise, and throughout this unit, students have not only developed their personal biography but also explored and considered options different than what they may experience in their current situation.

Introduction: Setting Up the Mathematical Task

- For this lesson, students will use their biographies to develop a personal monthly budget.
- Time: 2-90 minutes blocks, or 2-4 45 minutes blocks.

Student Exploration

Individual and Small Group Work

Student/Teacher Actions:

- Students will use all that they know and have learned to create a reasonable monthly budget.
- Students can use a template that is provided, or one they create themselves.

- Teacher will circulate around the room to keep the students focused, answer questions using questioning techniques.
- Technology used for this lesson will be calculators.

Monitoring Student Responses

- students will communicate their thinking and their new knowledge by completing a well-planned, balanced budget;
- Evidence of student learning will be assessed upon the completion of the budget.

Assessment

- If there are students in the class with unique circumstances, the teacher will help to make fill in the gaps, while trying to keep this project as unique and relevant to the individual as possible.

Strategies for Differentiation

- ELL students should have a dictionary to help with vocabulary ;
- For students that may need some extra help, they could use a form similar to the one in Lesson 1 to provide more of a structure, “guided”, budget outline.

Lesson 5: Show Me What You Got

Mathematical Objective(s)

In this lesson, students will share their budgets with classmates and discuss similarities and differences, and choices they made.

NCTM Standards

- Communication: Organize and consolidate their mathematical thinking through communication.
- Communication: Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.
- Communication: Analyze and evaluate the mathematical thinking and strategies of others.

Materials/Resources

- Journals
- List of discussion questions (attached at end of this lesson)

Introduction: Setting Up the Task

- In this lesson, you will be looking at others' budgets and discussing them.
- Time: 1-90 minute block or 2-45 minute periods
- The task should be introduced by dividing the students into groups. Each group should have one person representing each of the scenarios presented in Lesson 3. This will provide for diversity and therefore discussion. Each student will present his/her budget to the small group, and then each group will address the discussion questions.

Student Exploration 1:

Small Group Sharing/Discussion

Student/Teacher Actions:

- Once in groups, students will each share their budget with the group. Students will have an opportunity to ask questions of each other, and then will answer the discussion questions.
- The teacher should be circulating around the room trying to keep everyone focused to the task at hand, helping to prompt discussions (if/when needed), and answering questions students may have.
- Students could present their budgets using presentation software (such as PowerPoint), but only if adequate computer access is available.

Monitoring Student Responses

- students will communicate with each other to learn about others' perspectives;

- students will share their thinking and new knowledge through discussions with their groups;
- teacher will assist students who have difficulties by using questioning techniques; and
- When the groups have completed presentations and discussions, there should then be a whole class discussion to provide closure to the unit. During this time, students can share what they have learned and if any of their perspectives on things have changed. Students will then respond to final journal prompts individually.
- evidence of student knowledge and learning will be realized through the discussions with classmates as well as the journal entries at the end of the lesson.

Assessment

- **Journal prompts for end of lesson** (rubric attached at end of lesson)
 - What have you learned from this project? Explain.
 - How has this project impacted your views on your future?
 - When you are spending money, will you consider other factors now? Explain.
- **Discussion Questions for small groups**
 - Discuss any similarities and/or differences within your groups' budgets.
 - Compare your fictitious budget to your family's actual expenses in your journal.
 - a. What similarities and differences do you notice?
 - b. Are YOUR similarities and differences the same as your group's? Explain.
 - Is it important to have a budget? Why or why not?
 - How do your occupation and education affect your budget? Explain.

Journal Check 3: Final check.

No response	Answers questions	Answers questions with limited detail	Meets expectations	Exceeds expectations
0 points	5 points	10 points	15 points	20 points