

## **WAMC Lab Template**

Math Concept(s): Average Daily Balance

Source / Text: Financial Algebra

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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: Average Daily Balance

Prerequisite skills: Adding/subtracting rational numbers, calculating average, percent conversions.

Lab objective: Students will be able to calculate the finance charge on a credit card statement by first calculating the average daily balance.

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

#### **Mathematics K–12 Learning Standards:**

- HSS-MD: Calculate expected values and use the to solve problems

#### **Standards for Mathematical Practice:**

- 1. Make sense of problems and perseverer in solving them
- 6. Attend to precision

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

- Speaking and Listening: Comprehension and Collaboration
  - Work with peers to set rules for collegial discussions and decision-making
  - Propel conversations by posing and responding to questions that related to the current information

#### **K-12 Science Standards**

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#### **Technology**

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#### **Engineering**

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#### **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 andResponsibility

- Guide and Lead Others
- Be Responsible to Others

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

### Materials

- Scratch paper
- Pen/pencil
- Blank calendar
- Credit card statement
- Calculator

### Set-Up Required:

- Assign students to their groups and their individual roles
- Clean and clear workspaces with all appropriate materials accessible and available

### **Lab Organization Strategies:**

Leadership (Connect to 21<sup>st</sup> Century Skills selected):

### Cooperative Learning:

- Students will be assigned specific roles in their groups
  - Group leaders will be responsible for leading their group to successful completion of the lab through delegation and constructive support of their group members

### Expectations:

- Students will be able to calculate the average daily balance from transactions listed on a credit card statement; students will use the average daily balance to calculate the statement's finance charge and fill in the missing information on the statement

### Timeline:

- One 50-minute class period

### **Post Lab Follow-Up/Conclusions:**

Discuss real world application of learning from lab:

### Career Applications

- Understanding the details of a credit card statement is an essential skill in managing one's personal finances (business finances if using a credit card for business-related purchases)

### Optional or Extension Activities

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**Objective:** For this project, you will apply your knowledge of credit card statements and average daily balances. You will first write in the debits and credits from Mr. Sanchez' credit card statements on a calendar. Next, you will calculate the daily balances in Mr. Sanchez' billing cycle. Finally, you will calculate the average daily balance and use the amount to fill in the missing information on Mr. Sanchez' credit card statement.

**Steps:**

Part I - The Calendar

1. On Mr. Sanchez' credit card statement you can find that the number of days in the billing cycle is 30 days. Block out the last 5 days on the calendar that will not be used.
2. Enter the billing date, May 6, in the corner section of the last day on the blank calendar. Number the days back from that date until the calendar is completely filled in. Notice that although the billing date is in May, the billing cycle includes some days from April. Enter the month of the first date in your calendar and the month of the first day of the next month.
3. Look at the posted dates of each of the charges (debits). Put a plus sign (+) and the charged amount on the calendar dates that have debits posted. Next look at the posted date of the payment made. Put a minus sign (-) and the payment made on that calendar date. *Note: some dates may contain more than one debit and/or credit or a combination of both. Make sure to include ALL activity on that date in the calendar.*
4. The first day of the billing cycle is April 7. The previous balance of \$3,240.50 is the amount Mr. Sanchez owed on April 7. Enter that balance on that day. Continue to enter the daily balance on each day of the calendar, adding debits and subtracting credits.
5. To find the average daily balance, add all the daily balances and divide by the number of days in the billing cycle, 30. *Tip: find the total weekly balance of each week and add those together to calculate the final total balance.*

Part II - The Credit Card Statement

1. Enter the average daily balance into the yellow cell below "Average Daily Balance."
2. Calculate the monthly periodic rate and enter the percentage into the yellow cell below "Monthly Periodic Rate."
3. Total Mr. Sanchez' payments/credits and enter the amount into the yellow cell below "Payments/Credits."
4. Total Mr. Sanchez' new purchases and enter the amount into the yellow cell below "New Purchases."
5. Calculate Mr. Sanchez' finance charge and enter the amount into the yellow cell below "Finance Charge."
6. Calculate Mr. Sanchez' new balance and enter the amount into the yellow cell below "New Balance."
7. Calculate Mr. Sanchez' total available credit and enter the amount into the yellow cell below "Total Available Credit."

**Grading Rubric:**

- \_\_\_\_\_ Dates in calendar are labeled correctly (2 points)
- \_\_\_\_\_ Starting balance, credits, and debits (4 points)
- \_\_\_\_\_ Daily balances are entered correctly (10 points)
- \_\_\_\_\_ Final total balance is calculated correctly (5 points)
- \_\_\_\_\_ Average daily balance is calculated correctly (1 point)
- \_\_\_\_\_ Monthly periodic rate is calculated correctly (1 point)
- \_\_\_\_\_ Payments/credits are calculated correctly (1 point)
- \_\_\_\_\_ New purchases are calculated correctly (2 points)
- \_\_\_\_\_ Finance charge is calculated correctly (1 point)
- \_\_\_\_\_ New balance is calculated correctly (2 points)
- \_\_\_\_\_ Total available credit is calculated correctly (1 point)

Total (30 points) \_\_\_\_\_

Saul Sanchez							
ACCOUNT INFORMATION							
Account Number	4-1077289			Billing Date	6	Payment Due	31 M
TRANSACTIONS				DEBITS / CREDITS (-)			
9 Apr	Gingham Pastry Shop						\$27.68
10 Apr	Federal Express						\$45.90
11 Apr	Corner Clothes						\$127.35
12 Apr	Computer Depot						\$848.60
16 Apr	Le Petite Menu						\$87.40
22 Apr	Payment						-\$190.60
22 Apr	Propane Home Heat						\$250.50
23 Apr	TJ Marsha's Department Store						\$87.60
25 Apr	Payment						-\$2,000.00
26 Apr	Dutchess Pharmacy						\$57.30
28 Apr	Sparrow Jewelers						\$325.90
1 May	Middle Island Auto Parts						\$470.63
2 May	Brighton University						\$1,300.00
3 May	Al's Mobile Gas Station						\$34.76
4 May	Elder's Antiques						\$870.21
5 May	Stop, Shop and Go						\$102.71
SUMMARY	Previous Balance	Payments/Credits	New Purchases	Late Charge	Finance Charge	New Balance	Minimum Payment
	\$3,240.50			\$0.00			\$35.00
Total Credit Line	\$6,000.00			Average Daily Balance	Days in Billing Cycle	APR	Monthly Periodic Rate
Total Available Credit					30	19.80%	

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