Escape the Debt Trap — Teacher Guide

Financial Algebra · Unit 4: Credit Cards & Debt

3 class periods | Small groups (3) | Skills: Skill 1, Skill 2, Skill 3, Skill 4

Overview

Credit card debt grows quietly. In this project your team acts as a nonprofit credit counselor for Marcus. You will read his statements, calculate interest, simulate repayment plans, evaluate a balance-transfer offer, and present a debt-freedom plan.

Skills covered

- Calculate monthly interest (credit-skill-01)
- Evaluate credit card repayment (credit-skill-02)
- Compare repayment strategies (credit-skill-03)
- Interpret credit costs (credit-skill-04)

Required materials

- Student packet
- Spreadsheet software
- Decision Lab “Credit Card Payoff Explorer” (optional check)

Suggested pacing

Session	Focus
Day 1	Tasks 1–2
Day 2	Tasks 3–4
Day 3	Presentations

Implementation guidance

- Assign roles: analyst (spreadsheet), counselor (writing), presenter.
- Build one simulation row together before groups start.

Worked calculations

Task 1

1. Northstar Visa: $\$3{,}200 \times \frac{0.2499}{12} = \$66.64$
2. Trendy Threads store card: $\$640 \times \frac{0.2899}{12} = \$15.46$
3. Bayline Mastercard: $\$1{,}850 \times \frac{0.1999}{12} = \$30.82$
4. Utilization = $\frac{5{,}690}{9{,}000} \approx 63.2\%$ (high).

Task 2

1. Northstar Visa: 192 months, interest $5,529.40
2. Trendy Threads store card: 41 months, interest $369.12
3. Bayline Mastercard: 127 months, interest $2,065.51

Task 3

1. Avalanche: 17 months, interest $1,004.49, order Trendy Threads store card → Northstar Visa → Bayline Mastercard.
2. Snowball: 17 months, interest $1,070.78, order Trendy Threads store card → Bayline Mastercard → Northstar Visa.

Task 4

1. Visa transferred: 3,200 × 1.04 = $3,328 (fee $128) at 0% for 15 months, then 21.99%.
2. With $400/month (avalanche on the remaining cards, then the transferred balance): debt-free in 16 months; interest + fee ≈ $348.59.
3. Compared with avalanche without a transfer ($1,004.49), the transfer saves about $655.90 — if approved and no new charges are made.

Sample student responses

> “We recommend the avalanche method: Marcus is debt-free in 17 months and pays $1,004.49 in interest, compared with years on minimum payments. Because the store card is both smallest and highest-rate, he still gets an early win.”

Common misconceptions

- Forgetting minimums on non-target debts.
- Ignoring the transfer fee.
- Assuming transfer approval.

Differentiation

Support

- Provide a simulation template with formulas.

Extend

- Add $50/month of new charges and show the effect.

Extension opportunities

- Research what a nonprofit credit counseling agency offers.

100-point rubric

Category (points)	Exemplary (100%)	Proficient (~80%)	Developing (~60%)	Beginning (~30%)
Financial understanding (20)	Uses vocabulary precisely and explains every financial concept involved, including assumptions.	Mostly accurate explanations with minor vocabulary gaps.	Partial understanding; some concepts misapplied.	Little evidence of understanding.
Mathematical accuracy (25)	Interest, minimum-payment, and strategy simulations are accurate.	1–2 minor errors that do not change conclusions.	Several errors or missing work.	Calculations largely missing or incorrect.
Analysis & comparison (20)	Compares every option on the same basis and tests at least one changed assumption.	Compares options with small gaps.	Comparison superficial or uneven.	Little analysis.
Justification (15)	Recommendation is supported by specific numbers and weighs non-financial factors and risks.	Mostly supported.	Mostly opinion.	No justification.

Category (points)	Exemplary (100%)	Proficient (~80%)	Developing (~60%)	Beginning (~30%)
Communication & presentation (10)	Clear, organized, well-labeled tables, charts, and writing.	Minor clarity issues.	Hard to follow in places.	Disorganized.
Completion (10)	Every checklist item complete.	One item missing.	Two or three items missing.	Most items missing.

Total: 100 points. Alternative recommendations earn full credit when supported by accurate evidence.

Student documents (reference)

Marcus's debts

Card	Balance	APR	Minimum payment	Credit limit
Northstar Visa	$3,200	24.99%	$96	$5,000
Trendy Threads store card	$640	28.99%	$30	$1,000
Bayline Mastercard	$1,850	19.99%	$55	$3,000

Balance-transfer offer (fictional)

Term	Detail
Promo APR	0% for 15 months on transferred balances
Transfer fee	4% of amount transferred
APR after promo	21.99%
Credit limit if approved	$4,000
Approval	Not guaranteed; based on credit