Rent or Buy? The Housing Decision — Teacher Guide

Financial Algebra · Unit 7: Housing: Rent or Buy

3–4 class periods | Pairs or small groups | Skills: Skill 1, Skill 2, Skill 3, Skill 4

Overview

Rent or buy is one of the biggest financial decisions people make, and the right answer depends on time, prices, and personal plans. Your team will act as housing advisors for the Okafor-Reyes household.

Skills covered

- Compare rental and ownership costs (housing-skill-01)
- Model a mortgage (housing-skill-02)
- Estimate ownership expenses (housing-skill-03)
- Analyze opportunity cost (housing-skill-04)

Required materials

- Student packet
- Spreadsheet software
- Decision Lab “Rent or Buy a Home?”

Suggested pacing

Session	Focus
Day 1	Tasks 1–2
Day 2	Task 3
Day 3	Task 4 and presentation prep
Day 4	Presentations

Implementation guidance

- Model the net-cost formula with the class before Task 3.
- The Decision Lab uses the same model and can verify answers.

Worked calculations

Task 1

1. Gross monthly = $9,000.
2. 28% → $2,520; 36% − 380 → $2,860; limit $2,520.
3. Rent $1,965 fits; ownership PITI (Task 2) exceeds $2,520 — a warning sign.

Task 2

1. Loan $310,500; P&I $2,013.90; tax $345.00; insurance $133.33; PMI $181.13; PITI $2,673.36.
2. Maintenance ≈ $287.50 → true monthly ≈ $2,960.86.
3. Cash to close = 34,500 + 10,350 = $44,850.

Task 3

1. 3 yr: rent $72,867.06; buy net $104,317.85 (equity $54,506.20, opportunity cost $7,069.48).
2. 7 yr: rent $180,561.62; buy net $197,152.89 (equity $116,953.30, opportunity cost $18,258.45).
3. 12 yr: rent $334,253.49; buy net $303,529.54 (equity $210,940.96, opportunity cost $35,694.16).

Sample student responses

> “If the household is likely to move within about 7 years, renting costs less in our model. Buying wins only for a longer stay, and only if prices keep rising. Because Luis may relocate, we recommend renting and continuing to save.”

Common misconceptions

- Equity equals all payments made.
- Ignoring closing and selling costs.
- Assuming prices always rise.

Differentiation

Support

- Provide the net-cost formula organizer.

Extend

- Include a 20%-down scenario and compare PMI savings.

Extension opportunities

- Compare with a real local listing (no personal data).

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)	Affordability, PITI, cash-to-close, and net-cost calculations correct.	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.
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)

Listings (fictional)

	Rent: Brookside Commons Apt 4B	Buy: 18 Willow Ct condo
Price / rent	$1,950/month, +3%/yr expected	$345,000
Deposit / down	$1,950 security deposit	10% down ($34,500)
Monthly extras	Renters insurance $15	Taxes 1.2%/yr, insurance $1,600/yr, PMI 0.7%/yr of loan
Other	Landlord handles repairs	Maintenance ≈ 1% of value/yr; closing 3%; selling 6%

Market assumptions (adjust in Task 4)

Assumption	Base case
Mortgage rate	6.75%, 30-year fixed
Home appreciation	3% per year
Rent growth	3% per year
Return on invested cash	5% per year