# Your First Car

Shop three cars, compare loan offers, build an amortization schedule, and find the true 5-year cost.

Unit 5: Auto Loans & Borrowing | 3 class periods | Pairs

Name(s) _____ Period ____ Due _____

## Introduction

A car is often the first big loan people take on. Dealers talk in monthly payments; smart buyers talk in total cost. You and a partner will help Isaiah choose a car by comparing loans, building an amortization schedule, and calculating 5-year total cost of ownership.

> Isaiah, 21, needs a car for a new job 20 miles away. He has $2,500 for a down payment, drives about 13,000 miles per year, and wants to keep the car 5 years. Gas costs about $3.50 per gallon.

## Learning goals

- Calculate loan payments, total of payments, and finance charges.
- Compare APRs and terms, including a promotional rate.
- Build and interpret an amortization schedule.
- Compute total cost of ownership including depreciation.
- Recommend a car and justify it.

## Supporting documents and data

### Car and financing options (prices include tax and fees)

| | Used sedan (dealer) | Certified hybrid (credit union loan) | New compact (dealer 0.9% promo) |
|---|---|---|---|
| **Price** | $15,800 | $22,400 | $26,900 |
| **Down payment** | $2,500 | $2,500 | $2,500 |
| **Loan** | 8.4% APR, 48 mo | 5.9% APR, 60 mo | 0.9% APR, 60 mo |
| **Insurance per year** | $1,300 | $1,550 | $1,800 |
| **Maintenance per year (est.)** | $950 | $450 | $300 |

| | Used sedan (dealer) | Certified hybrid (credit union loan) | New compact (dealer 0.9% promo) |
|---|---|---|---|
| **Fuel economy** | 31 mpg | 48 mpg | 36 mpg |
| **Value after 5 years (est.)** | 42% of price | 50% of price | 55% of price |

## Tasks

### Task 1: Loan math

1. Find the amount financed, monthly payment, total of payments, and finance charge for each car.
2. Which has the lowest payment? The lowest finance charge?

**Deliverable:** Loan comparison table.

### Task 2: Amortization schedule

1. For the car you think is best, build the first 6 rows and the last 2 rows of its amortization schedule.
2. Find the balance after 24 payments and compare with the estimated car value then.

**Deliverable:** Schedule excerpt + equity check.

## Task 3: Total cost of ownership

1. Compute 5-year fuel, insurance, and maintenance costs.
2. TCO = down + total of payments + insurance + maintenance + fuel − resale value.
3. Rank the cars by TCO.

**Deliverable:** TCO table.

## Task 4: What if?

1. Test one change: gas rises to $4.50, the used sedan needs a $1,800 repair in year 3, or Isaiah drives 18,000 miles/year.
2. Does your ranking change?

**Deliverable:** Sensitivity analysis.

## Task 5: Recommendation

1. Write a buyer's guide for Isaiah: the car, the financing, and three negotiation tips.

**Deliverable:** One-page buyer's guide.

## Reflection

**1.** Why do dealers focus on monthly payments?

**2.** What risks are not captured in your numbers?

**3.** What would you look for when buying your first car?

## Submission checklist

- ☐ Loan comparison table
- ☐ Amortization excerpt + equity check
- ☐ TCO table
- ☐ Sensitivity analysis

- ☐ Buyer’s guide
- ☐ Reflection

## Scoring 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)** | Payments, schedules, and TCO calculations correct for every car. | 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.

ALL PEOPLE, BUSINESSES, PLACES, AND NUMBERS IN THIS PROJECT ARE FICTIONAL. RATES AND COSTS ARE ILLUSTRATIVE ASSUMPTIONS.