

TRANSPORTATION DECISIONS

Calculating the Full Cost of Vehicle Ownership

Detailed practice, calculation, decision-making, and assessment

GRADES 9-12	TIME 2 x 42 min	GROUPING I / pairs / whole	PRODUCT Brief
YOUR CHALLENGE Calculate out-the-door price, annual operating cost, fuel use, and verification steps for a fictional used-vehicle purchase.			

Transportation Costs Include Money, Time, Access, and Risk

Vehicle affordability includes the purchase price, taxes and fees, financing, insurance, fuel, maintenance, repairs, parking, registration, and inspection. A used-car decision also requires title, history, condition, recall, and warranty checks.

Term	Student-friendly meaning
Out-the-door price	Total purchase price before financing, including stated taxes and fees.
Add-on	Optional product or service added to the transaction.
Operating cost	Ongoing cost to use and maintain the vehicle.
Fuel economy	Distance traveled per unit of fuel.
Buyers Guide	Dealer notice describing warranty or as-is status for a used car.
Independent inspection	Evaluation by a mechanic not controlled by the seller.
CLASSROOM USE All people, employers, figures, brackets, and documents in this packet are fictional. Never place a real Social Security number, employer ID, bank number, or tax document in classroom work.	

Part 1 - Calculate Out-the-Door Price

Use the fictional dealer sheet. Do not add costs not listed.

Item	Amount	Include?	Running total
Vehicle price	\$18,900		
Dealer discount	-\$700		
Sales tax	\$1,547		
Registration/title estimate	\$250		
Documentation fee	\$175		
Optional paint protection	\$895		

Calculate price with and without the optional add-on. Why must the buyer ask for a written out-the-door price?

Part 2 - Estimate Annual Ownership Cost

Assume the add-on is declined and loan payments are handled separately.

Cost	Monthly / annual rule	Annual amount
Insurance	\$210/month	
Fuel	900 miles/month ÷ 30 mpg x \$3.60	
Maintenance reserve	\$85/month	
Registration/inspection estimate	\$180/year	
Parking	\$65/month	

Calculate each annual amount and total annual operating cost.

Part 3 - Compare Fuel Efficiency

Both fictional cars travel 10,800 miles/year at \$3.60/gallon.

Vehicle	Miles per gallon	Gallons/year	Fuel cost/year
Vehicle R	30		
Vehicle S	40		

Calculate annual fuel savings for Vehicle S. Identify two real-world reasons actual fuel use may differ.

Part 4 - Build a Used-Car Verification Plan

A clean appearance does not verify mechanical condition, ownership, or warranty.

Check	Source/evidence	Red flag	Decision effect
Independent inspection			
Vehicle history			
Title/ownership proof			
FTC Buyers Guide			
Recall check			
Written warranty/as-is terms			

Explain why an inspection and history report answer different questions.

Part 5 - Write a Vehicle Affordability Memo

Lee has \$950/month available for all transportation costs, including a future loan payment.

Decision check	My evidence
Out-the-door price	
Optional add-on decision	
Annual operating cost	
Monthly operating cost	
Fuel comparison	
Inspection/title checks	
Amount left for payment	
Recommendation with limitation	

Write 150-200 words. State what must be verified before any deposit or signature.
