Protect a Household

Choose health, auto, and renters coverage for a family — balancing premiums, deductibles, and risk.

Unit 8: Insurance & Risk | 3 class periods | Small groups (3–4)

Name(s) _____ Period ____ Due _____

Introduction

Insurance is how households turn big, unpredictable losses into small, predictable payments. Your team will design an insurance plan for the Tran family: choosing a health plan using expected value, setting auto deductibles and liability limits, and deciding what to self-insure — all within a budget.

> The Tran family (two adults, one child) rents a home in fictional Maple Falls, owns a 9-year-old car worth $6,500, and has $3,800 in savings. Their insurance budget is about $850 per month. One adult has a chronic condition that requires regular specialist visits.

Learning goals

- Compare plans using premiums, deductibles, coinsurance, copays, and maximums.
- Use expected value to evaluate plans under uncertainty.
- Analyze auto coverage, deductibles, and liability limits.
- Decide what to insure and what to self-insure.
- Present a coverage plan with tradeoffs.

Supporting documents and data

Family health plan options (fictional, monthly premium for family)

Plan	Premium/mo	Deductible	Coinsurance	Copay	OOP max
Gold	$520	$1,000	10%	$25	$5,000
Silver	$380	$3,000	20%	$40	$9,000
Bronze HSA	$210	$7,000	20%	—	$12,000

Family medical-year estimates (hypothetical)

Scenario	Probability	Covered bills	Office visits
Typical	60%	$1,500	6

Scenario	Probability	Covered bills	Office visits
Busy	30%	$7,000	12
Major event	10%	$45,000	18

Auto insurance quotes (6 months)

Coverage	Option A	Option B
Liability limits	25/50/25 — $310	100/300/100 — $385
Collision	$500 deductible — $240	$1,000 deductible — $165
Comprehensive	$250 deductible — $70	$500 deductible — $48
No collision	Saves the collision premium	

Renters insurance

Coverage	Premium
$30,000 property + $100,000 liability, $500 deductible	$17/month
$30,000 property + $300,000 liability, $1,000 deductible	$19/month

Tasks

Task 1: Health plan math

1. For each plan and each scenario, compute out-of-pocket and total yearly cost.
2. Compute expected yearly cost and worst-case cost for each plan.

Deliverable: Health plan table.

Task 2: Health plan choice

1. Considering the chronic condition and $3,800 savings, choose a plan.
2. If you choose the HSA plan, how much should the family deposit monthly to cover its deductible within a year?

Deliverable: Justified health choice.

Task 3: Auto coverage

1. Compare yearly costs of the auto options.
2. Should the family keep collision on a $6,500 car? Use the maximum payout and expected value.
3. Explain why higher liability limits may be worth it.

Deliverable: Auto decision.

Task 4: Full plan and budget

1. Total all monthly premiums.
2. Stay at or under $850 per month or justify going over.
3. List the risks you chose to self-insure.

Deliverable: Household insurance plan.

Task 5: Presentation

1. Present the plan, the biggest tradeoff, and what would change it.

Deliverable: 5–6 slides.

Reflection

1. How did expected value help, and where did it fall short?

2. Which risk would worry you most as a household?

3. What questions would you ask an insurance agent?

Submission checklist

- ☐ Health plan table with EV
- ☐ Health choice and HSA deposit (if applicable)
- ☐ Auto decision
- ☐ Full plan within budget

- [ ] Presentation
- [ ] 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)	Out-of-pocket, EV, and premium totals 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.

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