

NOT EVERYTHING IS MORE EXPENSIVE

Student/Class Goal
When students shop, they need to compare the prices of many items and calculate the percent increase or decrease in order to make wise purchases.

Outcome (*lesson objective*)
Students will calculate percent increase or decrease.

Time Frame
40-45 minutes

Standard *Use Math to Solve Problems and Communicate*

NRS EFL 4-5

Number Sense	Benchmarks	Geometry & Measurement	Benchmarks	Processes	Benchmarks
Words to numbers connection		Geometric figures		Word problems	4.25, 5.25
Calculation	4.2, 5.1	Coordinate system		Problem solving strategies	
Order of operations		Perimeter/area/volume formulas		Solutions analysis	4.27, 5.27
Compare/order numbers		Graphing two-dimensional figures		Calculator	4.28, 5.28
Estimation	4.5, 5.4	Measurement relationships		Mathematical terminology/symbols	
Exponents/radical expressions		Pythagorean theorem		Logical progression	4.30, 5.30
Algebra & Patterns	Benchmarks	Measurement applications		Contextual situations	4.31, 5.31
Patterns/sequences		Measurement conversions		Mathematical material	
Equations/expressions		Rounding		Logical terms	
Linear/nonlinear representations		Data Analysis & Probability	Benchmarks	Accuracy/precision	
Graphing		Data interpretation		Real-life applications	4.34, 5.35
Linear equations		Data displays construction		Independence/range/fluency	4.35, 5.36
Quadratic equations		Central tendency			
		Probabilities			
		Contextual probability			

Materials
Current grocery store ads
Board or overhead projector

Learner Prior Knowledge
Students are able to identify and write ratios and proportions. They use ratio and proportion to solve percent problems.

Instructional Activities
Step 1 - Students should suggest items that have reduced prices over the past few years. List items, year purchased and the purchase price on the board or overhead transparency. (Suggested items: CD players, digital cameras, calculators, TVs, etc.)

Step 2 - Teacher will introduce the percent increase/decrease formula.

$$\frac{\text{Amount of increase or decrease}}{\text{Original Price}} = \frac{\text{Percent}}{100}$$

Teacher will demonstrate (model) this formula using some of the student data.

Step 3 – Students will calculate the percent decrease in prices for the items listed on the board.

Step 4 - Students will examine current grocery store ads and select some frequently purchased items (e.g., bread, eggs, fruit). They will use the Internet and find the prices for these same items for a different year. Then they will calculate the percent increase using the formula.

Step 5 - Using the same Internet sources, students will find the average annual income from the year used for Step 4 and for 2005

(or the current year). Students will calculate the percent increase in wages/income.

Step 6 - Teachers can use an exercise from a GED textbook for additional practice of percent increase or decrease.

WRITING EXTENSION Write an explanation for the decrease in prices for electronics and the increase in prices for food items or staples.

Assessment/Evidence *(based on outcome)*

Teacher observation

Calculation of percent increase or decrease in prices.

Teacher Reflection/Lesson Evaluation

Not yet completed.

Next Steps

Technology Integration

Purposeful/Transparent

This activity applies to the math standard.

Contextual

This plan is related to real life-everyone eats, grocery shops, etc. Students can apply this to planning future purchases.

Building Expertise

The plan builds on the students' knowledge of ratio and proportion.