

Mathematics Lesson Plan Middle School

Objective	The students will create a budget based on the 1900's oil field worker's income and their corresponding bills.
TEKS	<p>§111.26. Grade 6, Adopted 2012.</p> <p>(b) Knowledge and skills.</p> <p>(12) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to analyze problems. The student is expected to:</p> <ul style="list-style-type: none"> (A) represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots; (B) use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution; (C) summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution; (D) summarize categorical data with numerical and graphical summaries, including the mode, the percent of values in each category (relative frequency table), and the percent bar graph, and use these summaries to describe the data distribution. <p>(14) Personal financial literacy. The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor. The student is expected to:</p> <ul style="list-style-type: none"> (A) compare the features and costs of a checking account and a debit card offered by different local financial institutions; (B) distinguish between debit cards and credit cards; (C) balance a check register that includes deposits, withdrawals, and transfers; (D) explain why it is important to establish a positive credit history; (E) describe the information in a credit report and how long it is retained; (F) describe the value of credit reports to borrowers and to lenders; (G) explain various methods to pay for college, including through savings, grants, scholarships, student loans, and work-study; and (H) compare the annual salary of several occupations requiring various levels of post-secondary education or vocational training and calculate the effects of the different annual salaries... <p>§111.27. Grade 7, Adopted 2012.</p> <p>(b) Knowledge and skills.</p> <p>(4) Proportionality. The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to:</p>

- (A) represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including $d = rt$;
- (B) calculate unit rates from rates in mathematical and real-world problems;
- (C) determine the constant of proportionality ($k = y/x$) within mathematical and real-world problems;
- (D) solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems; and
- (E) convert between measurement systems, including the use of proportions and the use of unit rates.

(13) Personal financial literacy. The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor. The student is expected to:

- (A) calculate the sales tax for a given purchase and calculate income tax for earned wages;
- (B) identify the components of a personal budget, including income; planned savings for college, retirement, and emergencies; taxes; and fixed and variable expenses, and calculate what percentage each category comprises of the total budget;
- (C) create and organize a financial assets and liabilities record and construct a net worth statement;
- (D) use a family budget estimator to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs in the student's city or another large city nearby;
- (E) calculate and compare simple interest and compound interest earnings; and
- (F) analyze and compare monetary incentives, including sales, rebates, and coupons.

§111.28. Grade 8, Adopted 2012.

(a) Introduction.

(1) The desire to achieve educational excellence is the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on computational thinking, mathematical fluency, and solid understanding, Texas will lead the way in mathematics education and prepare all Texas students for the challenges they will face in the 21st century.

(b) Knowledge and skills.

(12) Personal financial literacy. The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor. The student is expected to:

- (A) solve real-world problems comparing how interest rate and loan length affect the cost of credit;
- (B) calculate the total cost of repaying a loan, including credit cards and easy access loans, under various rates of interest and over different periods using an online calculator;

- (C) explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time;
- (D) calculate and compare simple interest and compound interest earnings;
- (E) identify and explain the advantages and disadvantages of different payment methods;
- (F) analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility; and
- (G) estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the first year of college.

STAAR

C

F

- 1** Amber saved a total of \$3.20 over 5 weeks. She saved the same amount of money each week. How much money did Amber save each week?
- A** \$1.44
 - B** \$1.56
 - C** \$0.64
 - D** \$1.80

20 A definition of a financial term is shown in the box.

A tax that includes Social Security and Medicare taxes and is paid by an employer

Which term best fits this definition?

- F** Payroll tax
- G** Property tax
- H** Sales tax
- J** Gasoline tax

Struggling Learners

- The struggling learners will be given a income amount.
- The struggling learners will only have to do the bare necessity bills.

Advanced Learners	<ul style="list-style-type: none"> • The advanced learners will be given a job title and need to research how much that person makes. • The advanced learners will need to research how much the cost of living will be for a family of eight.
Helpful Links	Ocean Energy
Engage	<p>The students will be given a brief lesson over a budget, essentially to refresh their memory. Once this mini-lesson is over, there will be a lesson over what inflation is and how it affects people, businesses, and the economy as a whole.</p>
Explore	<p>Once the main lesson is completed, there will be a quick example of how to create a budget for rent, gas, phone, and electricity. The students will work in their tabletop groups to complete this budget for themselves.</p>
Explain	<p>When all students have completed, or nearly completed the budget they will be given an instruction sheet with a budget for an oil field worker in the 1900's. The budget will be considerably smaller than the initial budget they created because the income will be so much smaller. The students will then conduct another budget, at their tabletops, with the income and bills of a 1900's oil field worker.</p>
Elaborate	<p>Students will take 10-20, depending on the time available, to complete their budget. Once they have completed the budget there will be a comparison between the first budget and the second.</p>
Evaluate	<p>The students will do a quick critical writing about how the two budgets differ. What shocked them about the two budgets? What stayed consistent? The students will have 5 minutes to complete the critical writing. However, this may be taken home.</p>