Mrs_Lewis_Business_Math_B_ Period__7__Offsite_Learning_Packet_Day__3__

State Indicator/Competency: Calculate expected values and use them to solve problems.

Instructional Objective(s):

5.1 Promissory Notes

1. Students will be able to calculate interest on interest-bearing promissory notes with 80% accuracy.
2. Students will be able to calculate interest using the exact interest method with 80% accuracy.
3. Students will be able to calculate interest using the ordinary interest method with 80% accuracy.
4. Students will be able to calculate the rate of interest with 80% accuracy.

5.2 Calculating Interest

1. Students will be able to calculate interest using simple interest tables with 80% accuracy.
2. Students will be able to calculate interest using the daily interest factor with 80% accuracy.

5.3 Installment Loans

1. Students will be able to calculate the installment price and finance charge on an installment plan purchase with 80% accuracy.
2. Students will be able to calculate the number and amount of monthly payments with 80% accuracy.
3. Students will be able to calculate the interest, principal payment, and new balance on an installment loan with 80% accuracy

5.4 Early Loan Repayment

1. Students will be able to calculate the final payment to pay an installment loan off early with 80% accuracy.
2. Students will be able to calculate the savings in interest to pay an installment loan off early with 80% accuracy.

5.5 Annual Percentage Rates

1. Students will be able to calculate the APR on a loan with 80% accuracy.

Materials: textbook, calculator, binder, writing utensil

Method of Instruction: Independent Student Led

Activities:

1. Kendra signed a promissory note for $5,900 at 12% ordinary interest for 180 days. Find the interest and amount due she will pay when the note is due.

   $\text{Interest} = \$5{,}900 \times .12 \times \frac{180}{360} = \$354$

   Amount due: $6,254

2. Find the ordinary interest from November 8 to November 22 on $750 at 9% interest.

   $\text{Daily Interest Factor: } \$750 \times \frac{.09}{360} = \$0.1875$

   Number of days: 15 days

Ordinary Interest: $0.1875 × 15 = $2.81

3. A refrigerator sells for $1,044 on the installment plan. After making a down payment of $100, you pay $59 a month. How many months will it take to pay for the refrigerator?
   Remainder to pay: $1,044 - $100 = $944
   Number of months: $944 ÷ $59 = 16 months
4. Ben borrowed $1,000 on a one- year simple interest installment loan at 15% interest. The monthly payments were $90.26. Find the amount of interest, amount applied to the principal, and the new balance for the first monthly payment.
   Calculate the monthly interest rate: 15% ÷ 12 = 1.25%
   Interest = $1,000 × .0125 × 1 = $12.50
   Amount applied to the principal: $90.26 - $12.50 = $77.76 New balance:
   $1,000 - $77.76 = $922.24

5. Mario had a 12-month, $2,000 simple interest loan at 9% interest. He repaid the loan in full with the sixth payment when his balance was $1,188.40. How much was his final payment?

   Monthly Interest Rate: 9% ÷ 12 = 0.75%
   Interest = $1,188.40 × .0075 × 1 = $8.91
   Add balance to current month's interest: $1,188.40 + $8.91 = $1,197.31

6. The finance charge for a 6-month, $1,200 installment loan is $72. Find the annual percentage rate on the loan.

   $72 ÷ $1,200 = 0.06 x 100 = $6
   The annual percentage rate is 20 1/4%.

Directions Read through the entire project before you begin doing any work.

Carmen and Leon Espino have been shopping for a folding camper trailer they can use for family trips. They have shopped carefully for the trailer and think they have found the right trailer and dealer for their needs. They bargained for a cash price of $6,500 for the trailer.

The Espinos also shopped carefully to find the best deal for borrowing the money they will need to buy the trailer. They found four sources for the funds they need: the dealer, their bank, their credit union, and a special low-interest rate credit card. The information they have gathered about each loan follows. Answer the questions about each loan offer and then compare the offers.

The Dealer's Offer: Marsh Camping Equipment, Inc. has offered the Espinos an installment plan with these terms: 10% down and the remainder to be paid in 24 equal payments of $283.65 each.
Under this plan,

1. The amount financed is _____.

2. The installment price of the trailer is _____

3. The total finance charge is _____

4. The installment price of the trailer is _____% greater, to the nearest tenth percent, than the cash price.

5. Using the table below, the annual percentage rate for the dealer's offer is _____%.

Number of Payments	Annual Percentage Rate										
	14.00	14.25	14.50	14.75	15.00	15.25	15.50	15.75	16.00	17.00	18.00
	(Finance Charge per $100 of Amount Financed)										
6	4.12	4.2	4.27	4.35	4.42	4.49	4.57	4.64	4.72	5.02	5.32
12	7.74	7.89	8.03	8.17	8.31	8.45	8.59	8.74	8.88	9.45	10.02
18	11.45	11.66	11.87	12.08	12.29	12.5	12.72	12.93	13.14	13.99	14.85
20	12.70	12.93	13.17	13.41	13.64	13.88	14.11	14.35	14.59	15.54	16.49
24	15.23	15.51	15.80	16.08	16.37	16.65	16.94	17.22	17.51	18.66	19.82
30	19.10	19.45	19.81	20.17	20.54	20.90	21.26	21.62	21.99	23.45	24.92
36	23.04	23.48	23.92	24.35	24.8	25.24	25.68	26.12	26.57	28.35	30.15

The Bank's Offer: The Watertown National Bank has offered the Espinos the promissory note shown below. The Espinos will have to sign the promissory note and pledge the trailer as collateral. The bank will discount their note at 12%. The entire amount is due one year later. No monthly payments are required.

LOAN NO. 40839 DATE June 1 20 10

LOAN AMOUNT $ 7,386.36 MATURITY DATE June 1 20 11

One year AFTER DATE We PROMISE TO PAY TO

THE ORDER OF Watertown National Bank

Seven thousand, three hundred eighty-six and 36/100 DOLLARS

PAYABLE AT Watertown National Bank VALUE RECEIVED WITH INTEREST AT

THE RATE OF none % PER ANNUM, FOR VALUE RECEIVED, GIVING SAID BANK A

SECURITY INTEREST IN THIS COLLATERAL: Collateral, Seneca Camping Trailer

The rights We (am, are) giving said bank in this property, and the obligations this agreement secures are defined on the reverse side of this note.

Tina Espinos Marco Espinos

Under this plan,

6. The total amount of bank discount the Espinos will pay is _____.

7. The proceeds the Espinos will receive from this note are _____.

8. The true rate of interest on the note, to the nearest tenth of a percent, is _____%.

9. The total amount of money the Espinos will pay for the trailer is _____.

10. The total amount the Espinos will pay for the trailer, to the nearest tenth of a percent, is _____% greater than the cash price.

3. Jade Hameed's credit card statement for August showed these items: 8/ 1, previous balance, $ 108.15; 8/ 5, purchase, $ 56.89; 8/ 10, purchase, $ 61.88; 8/ 14, purchase, $ 190.23; and 8/ 25, payment, $ 150. Jade's card company uses a 1.6% monthly periodic rate and the average daily balance method including new purchases. What is Jade's finance charge for August and the new balance?

Make a chart:

Post Date	Transactions	Balance at End of Day	# of Days	Sum of Daily Bal.
8/1 (Bal.)	0.00	$108.15	1	$108.15
8/2-8/4	0.00	$108.15	3	$324.45
8/5	+56.89	$165.04	1	$165.04
8/6-8/9	0.00	$165.04	4	$660.16
8/10	+61.88	$226.92	1	$226.92
8/11-8/13	0.00	$226.92	3	$680.76
8/14	+190.23	$417.15	1	$417.15
8/15-8/24	0.00	$417.15	10	$4,171.50
8/25	-150.00	$267.15	1	$267.15
8/26-8/31	0.00	$267.15	6	$1,602.90

Average Daily Balance = $\frac{\textit{Sum of Daily Balances}}{\textit{Number of Days in the Billing Cycle}} = \frac{8{,}624.18}{31} = \$278.20$

Periodic Rate = 1.6%

Periodic Finance Charge = $278.20 × 0.016 × 1 = $4.45

New Balance = $108.15 + $4.45 + $56.89 + $61.88 + $190.23 - $150 = $271.60

Assessment: Worksheet Blizzard Bag #2 (10pts)