BETTER PAYING SUMMER JOB

Transparencies #26-27:   Computing Wages
Activity #26:   Better-Paying Summer Job

Let students work in small cooperative groups to answer the questions on the activity sheet.

1. Job offer #1 - 4.5
   Job offer #2 - 3.5
2. The y-intercept indicates the amount of money owed at the start because of the uniform purchase.
   The x-intercept indicates the number of hours that Johnny would have to work to break even.
3. $f(n) = 4.5n - 45$; $855
4. $g(n) = 3.5n$; $700
5. Johnny will need to work 45 hours to be paid the same amount ($157.50) from both jobs. The equation that can be used to find the solution is $4.5n - 45 = 3.5h$
6. Job offer #1 pays more beyond 45 hours. The inequality that can be used to find the solution is $4.5n - 45 > 3.5n$

Emphasize Algebra I TEKS, Linear Functions #5

5.a.   The student determines whether or not given situations can be represented by linear functions.
5.b.   The student determines the domain and range values for which linear functions make sense for given situations.
5.c.   The student translates among algebraic, tabular, graphical, or verbal descriptions of linear functions.

Emphasize Algebra I TEKS, Linear Functions #6

6.c.   The student determines the intercepts of linear functions from graphs, tables, and algebraic representations.
6.d.   For situations, the student interprets the meaning of the slope and intercepts and interprets them with respect to data, symbolic representations, or graphs.
6.g.   The student interprets and predicts the effects of changing slope and y-intercept in applied situations.

Reference:
Heid, K. (1995). Job-Offer Problem. *Curriculum and Evaluation Standards for School Mathematics, Addenda Series, Grades 9 - 12: Algebra in a Technological World*, pp. 57-58. Reston, VA: National Council of Teachers of Mathematics.

4th Six weeks Lesson 5. page 30

BETTER-PAYING SUMMER JOB

Johnny has received two summer job offers.

Offer #1 involves working at Deli Whopper where he will earn $4.50 an hour. He will be expected to purchase a uniform for $45.00 and to work 20 hours each week.

Offer #2 involves working at Sparkle Car Service where Johnny will earn $3.50 an hour. No special attire is required, but he is expected to work 20 hours a week.

Question: Which offer is the better-paying summer job?

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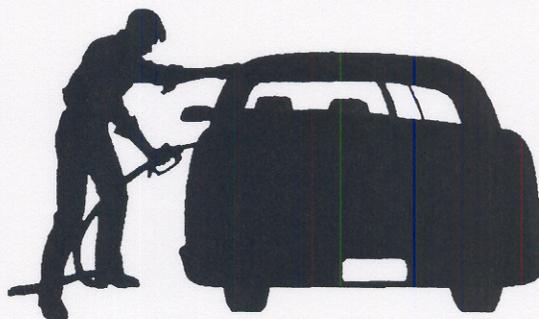
COMPUTING WAGES

Use the table building capabilities of your graphing calculator to complete the table.

# of Hours Worked	Amt. Earned Job #1	Amt. Earned Job #2
0		
20		
40		
60		
80		
100		
120		
140		
160		
180		
200		
n		

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BETTER PAYING SUMMER JOB

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Question: Which offer is the better-paying summer job?

Use the table building capabilities of your graphing calculator to complete the table.

# of Hours Worked	Amt. Earned Job #1	Amt. Earned Job #2
0		
20		
40		

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BETTER-PAYING SUMMER JOB

Answer each of the following questions about Johnny's two summer job offers.

1. What is the rate at which wages increase for job offer #1 as the number of hours worked increases? for job offer #2?

2. What does the intersection of the graph for job offer #1 with the y-axis at "-45" mean?
   What does the intersection of the graph for job offer #1 with the x-axis at "10" mean?

3. Write a function rule that describes the relation between the number of hours "n" worked in job offer #1 and the wages earned. Use your rule to predict how much job offer #1 will pay for 200 hours of work.

4. Write a function rule that describes the relation between the number of hours "n" worked in job offer #2 and the wages earned. Use your rule to predict how much job offer #2 will pay for 200 hours of work.

5. How many hours will Johnny need to work to be paid the same amount from both jobs? What is the exact amount? Write an equation that can be used to find the solution.

6. When does job offer #1 pay more? Write an inequality that can be used to find the solution.

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