Objectives: I can write equations to model real world problems.

SOLVING WORD PROBLEMS USING EQUATIONS

When a rate and a starting amount are given in a word problem, a similar equation can usually be written and solved.

Total = Start Amount + Rate * How Many

Starting Amount A flat fee or starting value. This value is a constant. It never changes.

A Rate The following are examples of a rate

- $3 per day
- $2 an hour
- 60 mph

Per is a key word that is often associated with rate.

Examples: Write an equation for each situation. Do NOT solve yet!

Sometimes the total is unknown and therefore it will be assigned the variable.

1) A plumber charges $25 for a service call plus $50 per hour of service. Write an equation for the cost, C, for 2 hours and 30 minutes.

Start + #

Total ~~150min~~ 2.5 rate

$C = 25 + 50 \cdot 2.5$

2) Nick collected 100 pounds of aluminum cans to recycle. He plans to collect an additional 25 pounds each week for 2 months. (assume four weeks for each month) Write the equation for the total pounds, P, of aluminum cans.

rate

Start Total 8weeks

$P = 100 + 25 \cdot 8$

Sometimes there is an amount to be determined and therefore it will be assigned the variable.

3) For babysitting, Nicole charges a flat fee of $10, plus $5 per hour. Write an equation if Nicole wants to make a total of $50 after *h* hours of babysitting.

Total

$50 = 10 + 5h$

4) Suppose that the water level of a river is 34 feet and that it is **receding** at a rate of 0.5 foot per day. Write an equation for the water level after *d* days to determine how many days will the water level be 26 feet.

in

$26 = 34 + -0.5d$