Cornell Notes	Topic/Objective: Writing Equations & Inequalities	Name:
AVID Decades of College Dreams	I can write equations and inequalities to represent	Class/Period:
	real-world situations.	Date:

Essential Question: How do I write an equation or inequality from a word problem?

Questions:	Notes:

Equations have an equal sign in them.

Inequalities have an inequality symbol in them.

Phrase	Operation
Sum, More than, Increased by, Plus, Added to, Total	addition +
Difference, Less than, Decreased by, Subtracted from, Minus, Less	subtraction −
Product, Of, Multiplied by, Times, Twice, Double, Triple, Multiply	multiplication ·
Quotient, Divide, Into, Divided by, Shared	division ÷
Equals, Gives, Is, Was, Should be, Amounts to, Is the same as	equal =

At Silver Gym, membership is $25.50 per month, and personal training sessions are $30 each. At Fit Factor, membership is $65.75 per month and personal training sessions are $20 each. **Write an equation** to show how many personal training sessions someone would have to buy to make the two gyms cost the same for one month.

x = # of sessions

$25.50 + 30x = 65.75 + 20x$

The charges for an international call made using the calling card for two phone companies are shown in the table. **Write an equation** to show the length of a phone call that would cost the same no matter which company is used.

Phone Company	Charges
Company A	35¢ plus 3¢ per minute
Company B	45¢ plus 2¢ per minute

$0.35 + 0.03m = 0.45 + 0.02m$

m = # of minutes

Turn-Around Words

Word	Phrase	Example
Than	Six less than a number	$x - 6$
From	10 subtracted from a number	$x - 10$

Circle any turn-around words and then translate the phrases into equations.

a) 12 more than a number equals fifty percent of the number. $12 + x = .5x$

b) 5 less than twice a number is one third of a number. $2x - 5 = \frac{1}{3}x$

Summary:	

Questions:	Key words/phrases for inequalities

Symbol	Words
$<$	Less than; fewer than
$\leq$	Less than or equal to; No more than; At most
$>$	Greater than; more than
$\geq$	Greater than or equal to; No less than; At least

Bob's Bagels offers pre-paid cards and has the specials shown. Diego has a \$50 card he uses to buy coffee and a bagel for \$3 each week. Carol has a \$60 card she uses to buy tea and a breakfast sandwich for \$5 each week. Write an inequality to find the number of weeks in which the balance on Diego's card will be no more than the balance on Carla's card. w = # of weeks

D ≤ C

$50-3w \leq 60-5w$

The temperature in Amarillo is 74 °F and is increasing at a rate of 2 °F per hour. In Houston, it is 68 °F and increasing 4 °F per hour. Write an inequality to find how long it will take for the temperature in Houston to be at least the same temperature as Amarillo. h = # of hrs

Houston ≤ Amarillo

$68+4h \leq 74+2h$

One fish tank contains 200 gallons of water and is being emptied at a rate of 5 gallons per minute. Another fish tank contains 150 gallons of water and is being filled at a rate of 2 gallons per minute. Write an equation to show how many minutes it will take for the two fish tanks to contain the same volume of water.

m = # of minutes

$200-5m = 150+2m$

A yellow hot-air balloon is 100 feet off the ground and rising at a rate of 8 feet per second. An orange hot-air balloon is 160 feet off the ground and rising at a rate of 5 feet per second. Write an inequality to show how long the yellow balloon will be higher than the orange balloon.

x = # of seconds

yellow > orange

$100+8x > 160+5x$

Sarah has 300 stamps in her collection and adds 5 more stamps each month. Her sister Sabrina has 450 stamps in her collection and sells 6 stamps per month. Write an equation to show how long it will take before Sarah and Sabrina both have the same number of stamps in their collections.

x = # of months

$300+5x = 450-6x$

Super-Clean house cleaning company charges a fee of \$384 to power wash a house plus \$2 per linear foot. Power Bright charges \$6 per linear foot, but no flat fee. Write an inequality that can be solved to find the number of linear feet a house must have to make the total cost charged by Super-Clean less than the cost charged by Power Bright.

x = # of linear feet

SC < PB

$384+2x < 6x$

Summary:	