

TEKS Planning with Timetable TEKS

TEKS:

6.9(A) write one-variable, one-step equations and inequalities to represent constraints or conditions within problems

6.9(B) represent solutions for one-variable, one-step equations and inequalities on number lines

6.9(C) write corresponding real-world problems given one-variable, one-step equations or inequalities

Vertical Standards

7.10(A) write one-variable, two-step equations and inequalities to represent constraints or conditions within problems

7.10(B) represent solutions for one-variable, two-step equations and inequalities on number lines

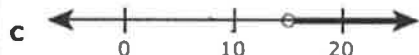
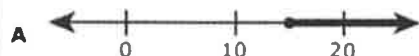
7.10(C) write a corresponding real-world problem given a one-variable, two-step equation or inequality

Big Idea

- determine if 2 expressions are equivalent
- create equivalent expressions using the properties
- apply order of operations and properties of operations to determine if 2 expression are equivalent.

Sample questions:

Alko is selling books for \$12 each. She wants to make more than \$180 in book sales. The inequality $12b > 180$ can be used to determine the number of books, b , she must sell in order to meet her goal. Which number line best represents the solution to the inequality?



15 Jamal wrote the inequality $\frac{x}{16} \leq 6$. Which situation is best represented by this inequality?

- A Jamal divided x pieces of paper among 16 students, and each student received fewer than 6 pieces of paper.
- B Jamal placed x cards in 16 stacks, and there were no more than 6 cards in each stack.
- C Jamal separated x shirts into 6 stacks, and each stack had at least 16 shirts.
- D Jamal shared 16 markers with x classmates, and each classmate had fewer than 6 markers.

Liang has a goal of walking at least 18 miles. She walks at a rate of 4 miles per hour. Which inequality can Liang use to find h , the number of hours she should walk in order to meet or exceed her goal?

- F $4h \geq 18$
- G $4h \leq 18$
- H $h + 4 \geq 18$
- J $h + 4 \leq 18$

Day 1- Equation vs Inequality 6.9b

- what's the difference
- how to read it with the symbols (i.e. $<$, $>$)
- what it looks like on number line

Example:

$x < 2$; x is less than 2

$x < 2$



Day 2/3 Equation vs Inequality 6.9a			
<ul style="list-style-type: none"> • what it looks like in a problem • vocabulary and phrases (i.e. at least means greater than or equal to) • continue to graph on a number line 			
Day 4/5 Equation vs Inequality 6.9c			
<ul style="list-style-type: none"> • write word problems from equations and inequalities 			
<u>Focus for Activities</u> 1. Represent on a number line 2. Given a problem write equation and inequalities 3. Give an equation/inequality write a problem			
Activity Options			
Number line	Write Equation/Inequalities	Write problems	Spiral
	EM p 155 EM p173-174 M.Math p 231-238	EM p157-158 EM p177 M. Math p239-246	Integers operation Decimal operation Fraction operation
*EM=Engaging Math II *M.Math= Motivation Math *G- Google Drive			
Other videos			

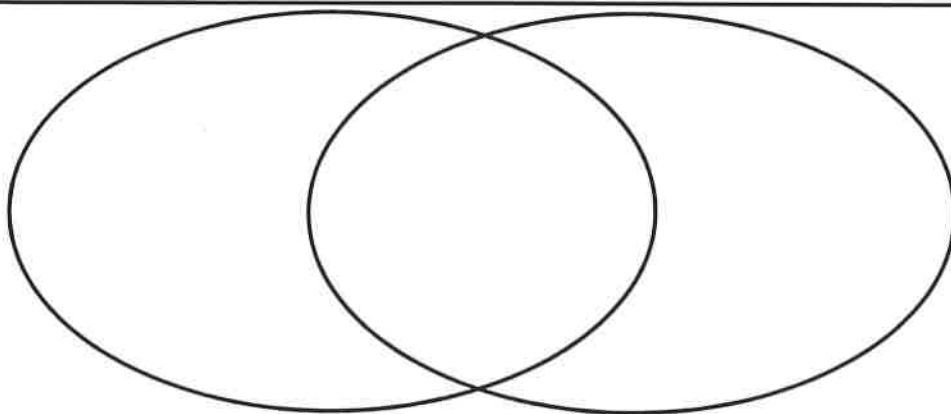
6.9b: Equation and Inequality on Number line

Date: _____

Question/Main Ideas:

Essential Question:

Equation vs Inequality



Reading Inequalities

Symbols:

$>$: _____

\geq : _____

$<$: _____

\leq : _____

Example:

$x > 2$: _____

$x \geq 2$: _____

$x < 2$: _____

$x \leq 2$: _____

Equation and Inequalities on a Number line

$=$

Example

$x = 2$ A number line from -5 to 5 with a closed circle at 2 and no shading.

$>$

$x > 2$ A number line from -5 to 5 with an open circle at 2 and shading to the right.

\geq

$x \geq 2$ A number line from -5 to 5 with a closed circle at 2 and shading to the right.

$<$

$x < 2$ A number line from -5 to 5 with an open circle at 2 and shading to the left.

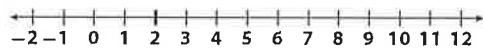
\leq

$x \leq 2$ A number line from -5 to 5 with a closed circle at 2 and shading to the left.

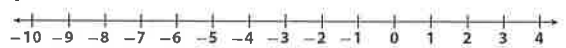
Practice together

Graph each equation/inequality.

1) $t \leq 8$



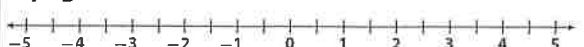
2) $-7 < h$



3) $X \geq -9$



4) $g = 2.5$



Write the equation/inequality

1) A number line from 0 to 10 with a closed circle at 6 and shading to the right.

2) A number line from -4 to 0 with an open circle at -1 and shading to the left.

3) A number line from -10 to 1 with a closed circle at -5 and shading to the left.

4) A number line from 0 to 7 with an open circle at 3 and shading to the right.

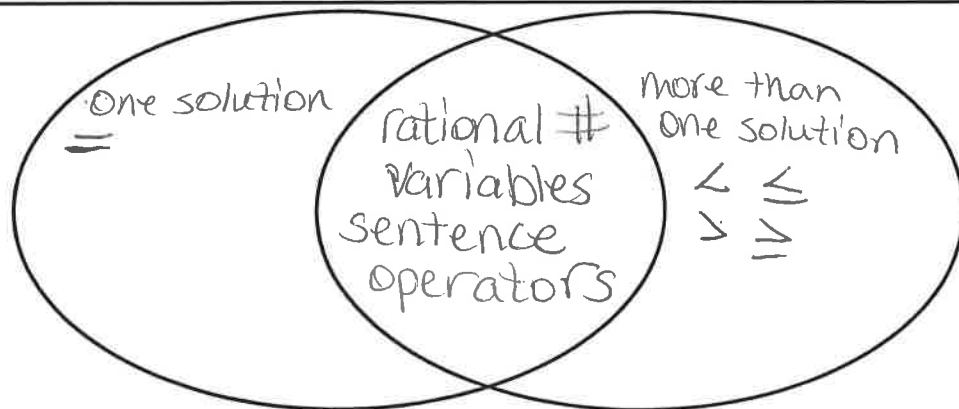
My Turn		

Summary:

Question/Main Ideas:

Essential Question:

Equation vs Inequality



Reading Inequalities

Symbols:

- >: greater than
- ≥: greater than or equal to
- <: less than
- ≤: less than or equal to

Example:

- $x > 2$: x is greater than 2
- $x \geq 2$: x is greater than or equal to 2
- $x < 2$: x is less than 2
- $x \leq 2$: x is less than or equal to 2

Equation and Inequalities on a Number line

= closed circle

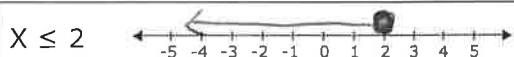
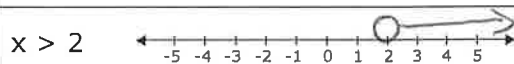
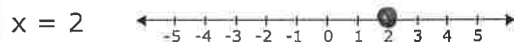
> open circle

≥ closed circle

< open circle

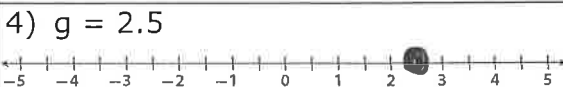
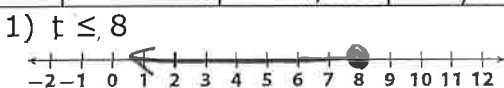
≤ closed circle

Example

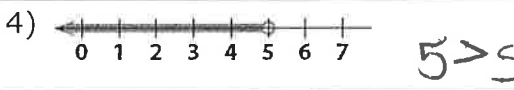
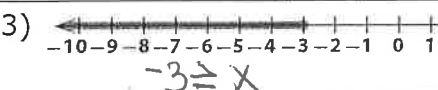
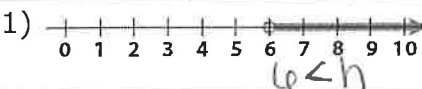


Practice together

Graph each equation/inequality.



Write the equation/inequality



My Turn		

Summary:

6.9a/b: Write Equation/Equality

Date:

Question/ Main Ideas:	Essential Question:			
Vocabulary				
	is less than is under is below shorter/smaller than fewer than is lower than beneath a better deal	at most maximum bottom is no more than	is more than is above over greater/larger than exceeds/increased longer than is higher than	at least minimum top is no less than
Write equation/ inequality	A pilot must complete at least 1000 training hours to fly an aircraft. Jim has completed 250 hours. Write an equation/inequality to find x , the number of hours needed to fly.			
	Meredith deposits \$150 into her bank account. With the deposit, she now has over \$500 in her account. Write the equation or inequality to find x , the original balance before the deposit was made?			
	London has a goal of walking at least 18 miles. She walks at a rate of 4 miles per hour. Write the equation or inequality to find h , the number of hours she needs to meet or exceed her goal?			
My Turn	1) A bookcase has 5 books on each shelf, and fewer than 315 books total. Write an inequality to find x , how many shelves does the bookcase have?		2) An elevators maximum load is at most 3,400 pounds. A group of people enter the elevator weighing 560 pounds. Write an inequality that could be used to determine t , how many more pounds the elevator could carry.	

Summary:

More Practice
(do not solve, write the equation/inequality)

a. A contractor is purchasing some tiles for a new patio. Each tile costs \$4 and he wants to spend less than \$1200. Find t , the number of tiles he can buy with this amount.

b. In 5 years, Sarah will be old enough to vote in an election. The minimum age for voting is at least 18 years. Find y , Sarah age now.

c. Sandra won 40 toffees in a competition. She gives one toffee to each of her classmates and has at least 8 toffees left at the end. Find s , the number of toffees she gave away to the class.

d. A large pizza cost c dollars. One fourth of the pizza cost \$5.25. What is t , the cost of the entire pizza?

e. Mark and seven friends shared the cost of twelve pizzas. The total cost was \$48. Find p , the amount each person had to pay.

f. Ginger received x dollars to go to the movies. Her ticket cost \$5.70, and she had \$3.25 left. How much money, x did Ginger receive?

g. Johnny worked out 90 minutes a day for 18 days. What is, x , the number of minutes he worked out during those days?

h. Felipe need to earn at least \$54 to buy a new video game. He earns \$9 per hour helping his grandmother with her yard work. Find s , the amount of hours he must help his grandmother to earn enough for the video game.

6.9a/c: Write Equation/Equality

Date:

Question/ Main Ideas:	Essential Question:							
Vocabulary	$<$ less than	\leq less than or equal to	$>$ greater than	\geq greater than or equal to				
	is less than is under is below shorter/smaller than fewer than is lower than beneath a better deal	at most maximum bottom is no more than	is more than is above over greater/larger than exceeds/increased longer than is higher than	at least minimum top is no less than				
Write equation/ inequality	A pilot must complete at least 1000 training hours to fly an aircraft. Jim has completed 250 hours. Write an equation/inequality to find x , the number of hours needed to fly.		at least 1000 hr Completed 250 hr x - hr needed	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="text-align: center;">≥ 1000</td></tr> <tr><td style="text-align: center;">$250 \mid x$</td></tr> </table> $250 + x \geq 1000$	≥ 1000	$250 \mid x$		
	≥ 1000							
	$250 \mid x$							
Meredith deposits \$150 into her bank account. With the deposit, she now has over \$500 in her account. Write the equation or inequality to find x , the original balance before the deposit was made?		deposit \$150 has over \$500 x - \$ balance before	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="text-align: center;">> 500</td></tr> <tr><td style="text-align: center;">$x \mid 150$</td></tr> </table> $x + 150 > 500$	> 500	$x \mid 150$			
> 500								
$x \mid 150$								
London has a goal of walking at least 18 miles. She walks at a rate of 4 miles per hour. Write the equation or inequality to find h , the number of hours she needs to meet or exceed her goal?		at least 18 miles 4 mph h - # of hours	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="text-align: center;">≥ 18</td></tr> <tr><td style="text-align: center;">$n \mid n \mid n \mid n$</td></tr> </table> $4h \geq 18$	≥ 18	$n \mid n \mid n \mid n$			
≥ 18								
$n \mid n \mid n \mid n$								
My Turn	<p>1) A bookcase has 5 books on each shelf, and fewer than 315 books total. Write an inequality to find x, how many shelves does the bookcase have?</p> <p>has 5 bks each shelf fewer than 315 b x - shelves</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="text-align: center;">< 315</td></tr> <tr><td style="text-align: center;">$x \mid x \mid x \mid x \mid x$</td></tr> </table> $5x < 315$		< 315	$x \mid x \mid x \mid x \mid x$	<p>2) An elevators maximum load is at most 3,400 pounds. A group of people enter the elevator weighing 560 pounds. Write an inequality that could be used to determine t, how many more pounds the elevator could carry.</p> <p>at most 3,400 lbs 560 lbs t - lbs</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="text-align: center;">≤ 3400</td></tr> <tr><td style="text-align: center;">$560 \mid t$</td></tr> </table> $560 + t \leq 3400$		≤ 3400	$560 \mid t$
< 315								
$x \mid x \mid x \mid x \mid x$								
≤ 3400								
$560 \mid t$								

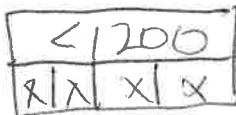
Summary:

More Practice

(do not solve, write the equation/inequality)

a. A contractor is purchasing some tiles for a new patio. Each tile costs \$4 and he wants to spend less than \$1200. Find t , the number of tiles he can buy with this amount.

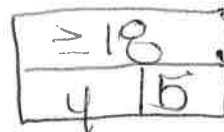
Cost \$4 each
less than \$200
 t - # tiles



$$4x < 1200$$

b. In 5 years, Sarah will be old enough to vote in an election. The minimum age for voting is at least 18 years. Find y , Sarah age now.

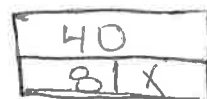
5 years
at least 18 yrs
 y = years now



$$y + 5 \geq 18$$

c. Sandra won 40 toffees in a competition. She gives one toffee to each of her classmates and 8 toffees left at the end. Find s , the number of toffees she gave away to the class.

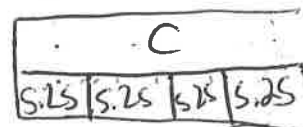
40 toffees
↓ 8 toffees
 s - # toffees



$$x + 8 = 40$$

d. A large pizza cost c dollars. One fourth of the pizza cost \$5.25. What is t , the cost of the entire pizza?

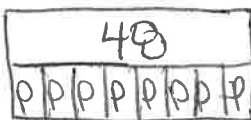
$\frac{1}{4}$ pizza
cost \$5.25
 t - entire pizza



$$\frac{c}{4} = 5.25$$

e. Mark and seven friends shared the cost of twelve pizzas. The total cost was \$48. Find p , the amount each person had to pay.

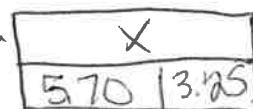
8 friends
total \$48
 p = each friend



$$8p = 48$$

f. Ginger received x dollars to go to the movies. Her ticket cost \$5.70, and she had \$3.25 left. How much money, x did Ginger receive?

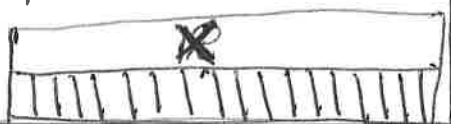
cost \$5.70
\$3.25 left
 x - dollar receive



$$x - 5.70 = 3.25$$

g. Johnny worked out 90 minutes a day for 18 days. What is, x , the number of minutes he worked out during those days?

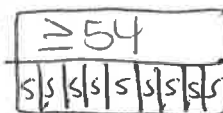
90 min a day
18 days
 x = # minutes



$$\frac{x}{18} = 90$$

h. Felipe need to earn at least \$54 to buy a new video game. He earns \$9 per hour helping his grandmother with her yard work. Find s , the amount of hours he must help his grandmother to earn enough for the video game.

at least \$54
\$9 per hour
 s = hours needed



$$9s \geq 54$$