3-5 Equations to Inequalities

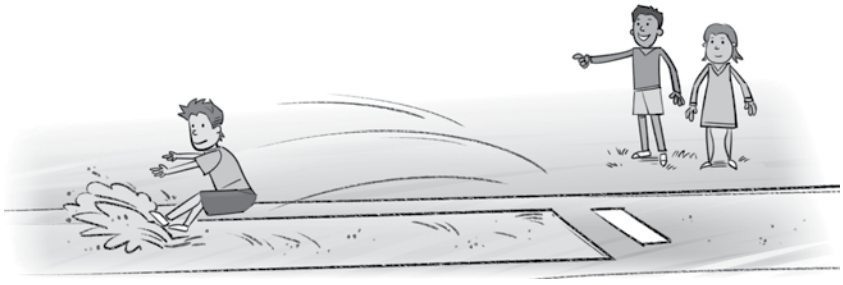
Digital Resources

CCSS: 6.EE.B.8: Write an inequality ... to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Launch

MP1, MP4, MP5

The long jump record at the local school is 18 feet. Describe a jump that could break the record in three different ways—using a picture, using words, and using symbols.



Picture	Words	Symbols

Reflect How many jumps could tie the record? How many jumps could break the record?

Got It?

PART 1 Got It

Which situation(s) could be modeled by inequalities?

I. You must be 13 or older to buy a certain DVD.

II. You should not drive over the speed limit of 70 mi/h.

PART 2 Got It

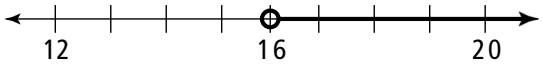
What inequality models the situation?

Got It?

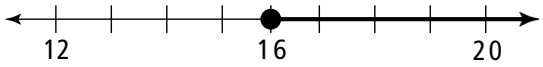
PART 3 Got It (1 of 2)

Which is the graph of $x \geq 16$?

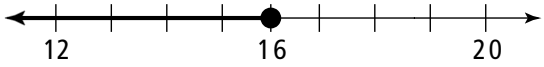
I.



II.



III.



PART 3 Got It (2 of 2)

Are the graphs of $x < 3$ and $x \leq 3$ the same? Explain.

Close and Check

Focus Question

MP2, MP4

How does the concept of inequality help you describe situations?

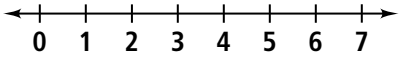
Do you know HOW?

1. Tell whether each statement can be written as an equality or an inequality. Write **E** for equality and **I** for inequality.

Statement	Equality or Inequality
The temperature will reach at least 72° today.	
My puppy is six months old today.	
There are no more than 31 days in any given month.	
There are less than 28 students in each classroom.	
There are the same number of boys as there are girls in my family.	

2. Use the number line to graph the inequality.

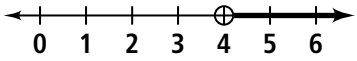
$x \leq 6$



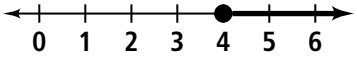
Do you UNDERSTAND?

3. Writing Which of the following graphs includes 4 in its solution set? Explain.

A:



B:



4. Reasoning For safety, riders of an amusement park roller coaster must be at least 4 ft 6 in. tall. Write the inequality to show this. Then describe why an inequality represents this situation better than an equation.