LESSON MAKER PRO

Limits on a Line

Write inequalities and show their solutions.

GRADE 6 · 6.AT.C.9

6.AT.C.9 "Write an inequality of the form x > c (using ≥, >, ≤, <) represent a constraint or condition in context. Recognize that inequalities of this form have infinitely many solutions; represent solutions of such inequalities on number lines."

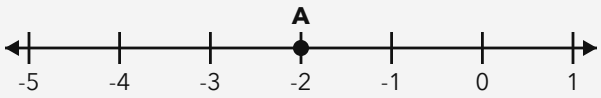
NAME _____ DATE _____

THE BIG IDEA

Use x for a number that can change. An open dot means the limit is not included; a filled dot means it is included. Shade left for < or ≤ and right for > or ≥. Each shaded ray has infinitely many solutions.

WORKED EXAMPLE

Point A marks the limit. Write an inequality for numbers at or below A, then show the solutions.



1. A is at -2.
2. At or below includes -2, so use ≤.
3. Put a filled dot at -2 and shade left.

Answer: x ≤ -2; filled dot at -2, shaded left.

PRACTICE 4 problems

1 Write an inequality: x is greater than 4.

ANSWER _____

2 Write an inequality: x is at most 9.

ANSWER _____

3 Write an inequality: x is at least -3.

ANSWER _____

4 For x < 6, state the dot type and shading direction.

ANSWER _____

APPLY IT Show your work

1 A video game badge needs at least 12 coins. Let x be the number of coins. Write an inequality. Does 12 qualify?

WORK SPACE

ANSWER _____

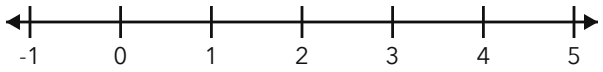
2 A skate event accepts riders under age 14. Let x be age in years. Write an inequality. Does age 14 qualify?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Graph x > 2 on the number line. Why are there infinitely many solutions even though the line ends at 5?



WORK SPACE AND ANSWER

ANSWER KEY

Limits on a Line

GRADE 6 · 6.AT.C.9

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write an inequality: x is greater than 4.	**x > 4**
2	Write an inequality: x is at most 9.	**x ≤ 9**
3	Write an inequality: x is at least -3.	**x ≥ -3**
4	For x < 6, state the dot type and shading direction.	**Open dot at 6; shade left.**

PART 2 · APPLY IT

1. **x ≥ 12; yes.** At least includes 12, so use ≥.
2. **x < 14; no.** Under 14 does not include 14, so use <.

CHALLENGE

Open dot at 2, shaded right with an arrow. The line shows only part of the ray; numbers above 5 also work.

Accept any clear mark showing the ray continues past the printed line. For the challenge explanation, students may also note that numbers between ticks are solutions.