



## GRADE 6 · EXPRESSIONS & EQUATIONS · PRACTICE

# WRITING & GRAPHING INEQUALITIES

**Today's goal:** I can write inequalities in the form  $x > c$  or  $x < c$  to represent a constraint or condition in a real-world problem, write inequalities in the form  $x \geq c$  or  $x \leq c$  to represent a constraint or condition in a mathematical problem, identify that inequalities in the form  $x > c$  or  $x < c$  have infinitely many solutions and represent solutions of inequalities in the form  $x > c$  or  $x < c$  on number line diagrams.



### Pick your peppers!

Everyone does Mild & Medium. Then climb as high as you can.



**Mild**

Tan the Turtle



**Medium**

Digit the Fox



**Spicy**

Blaze the Dragon



**Extra Spicy**

Pi the Owl

### WATCH MR DJ SOLVE

Write an inequality for at least 10 and say which circle you would draw.

- 1 'At least' includes 10, so the circle is filled in.
- 2 Arrow points right.

Answer:  $x \geq 10$ ; closed circle



### REMEMBER

Four phrases to know: 'more than'  $\rightarrow >$  (open circle) · 'less than'  $\rightarrow <$  (open circle) · 'at least'  $\rightarrow \geq$  (closed circle) · 'at most'  $\rightarrow \leq$  (closed circle). The **open circle means the boundary is excluded**; a closed circle means it counts.



**MILD**

**Tan the Turtle:** Slow and steady. Warm up!

- 1 Write an inequality for **more than 7**. Is 7 a solution?

Answer \_\_\_\_\_

- 2 From the set {0, 1, 3, 5}, list every solution of  $x < 3$ .

Answer \_\_\_\_\_

**OOPS ALERT**

**Careful on #1!** The slip Mr DJ sees most: Included 7.

**MEDIUM**

**Digit the Fox:** Stretch your brain.

- 3 Write an inequality for **at most 25** and describe its graph.

Answer

- 4 For  $x > 4.5$ , is 5 a solution? Is 4? Explain.

Answer

- 5 Write an inequality for **fewer than 100** and say whether 100 is a solution.

Answer

**SPICY**

**Blaze the Dragon:** Bring the heat!

- 6 A website requires users to be at least 13. Write an inequality, describe the graph, and give three different values that satisfy it.

Answer

- 7 A road has a speed limit of 65 km/h. Write an inequality for a legal speed  $x$ , and explain why 65 is allowed but 70 is not.

Answer



**EXTRA SPICY**

**Pi the Owl:** Big-brain challenge.

- 8 Jess says  $x > 0$  has exactly one solution because 'the answer is 1.' Explain her error and describe the real solution set.

Answer



**How did this sheet feel?**



Easy for me



Just right



Made me think

**Stuck? Watch Mr DJ explain it**

Step-by-step video lessons on YouTube: [youtube.com/@MathWithMrDJ](https://www.youtube.com/@MathWithMrDJ)

**Brain break: daily puzzles**

Three new math puzzles every day, free: [puzzles.mathwithmrdj.com](https://puzzles.mathwithmrdj.com)