

Graphing Inequalities on a Number Line

Name: _____ Date: _____

LEARNING OBJECTIVE

The student will graph the solution to an inequality on a number line using correct open/closed circles and direction.

MATERIALS NEEDED

- Ruler
- Notebook paper or graph paper
- Pencil
- Colored pencils

HANDS-ON ACTIVITY

1. Using your ruler, draw 4 number lines on your paper, each spanning from -10 to 10, evenly marked.
2. Solve these four inequalities: $x > 3$, $x \leq -2$, $x < 5$, and $x \geq 0$.
3. Graph each solution on its own number line: use an open circle for $>$ or $<$, and a filled/closed circle for $\geq$ or $\leq$, then shade the arrow in the correct direction with a colored pencil.
4. Label each number line clearly with the inequality it represents.
5. Pick one graph and list 3 whole numbers that satisfy the inequality and 1 number that does not, writing them below the number line.

QUESTIONS

1. **Graph $x > 3$ in words: what kind of circle do you use and which direction does the arrow point?**

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2. **Graph $x \leq -2$ in words: what kind of circle do you use and which direction does the arrow point?**

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3. **Give 3 whole numbers that satisfy $x \geq 0$ and 1 that does not.**
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4. Why does $>$ use an open circle while $\geq$ uses a closed circle?
