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GRADE 7 • DISCOVERY STATIONS • CCSS 7.EE.B.4b

Two-Step Inequality Real-World Word Problems

Discovery Stations • 4 Stations + Anchor Chart • 16 Problems + Extensions

*Write → Solve → Graph → Interpret***4**Discovery
Stations**16**Real-World
Problems**100%**CCSS
Aligned

INSIDE THIS RESOURCE

- 4 Station Cards (4 problems each)
- Printable Anchor Chart
- Student Recording Sheet
- Worked-Solution Answer Key
- CCSS 7.EE.B.4b Alignment Chart
- Exit Ticket + Extension Tasks

CCSS Alignment Chart — 7.EE.B.4b

Every station, extension task, and exit-ticket question in this resource is explicitly mapped to a sub-component of CCSS 7.EE.B.4b. Use this chart to document standards coverage for your lesson plans or for parent communication.

Resource Component	Standard Code	Learning Objective	Bloom's Verb	Evidence of Mastery
Station 1 Spending Limits	7.EE.B.4b	Write and solve inequalities of the form $4b + 6 \leq 50$ from a gift-card context.	Apply	Correct inequality set-up, accurate inverse operations, correctly shaded number-line graph.
Station 2 Time Constraints	7.EE.B.4b	Translate an evening time budget into $12c + 45 \leq 180$ and interpret the result.	Analyze	Whole-number interpretation; correct use of $<$ vs $\leq$ in context.
Station 3 Speed & Distance	7.EE.B.4b	Use distance = rate $\times$ time to build inequalities like $2.5r \geq 180$ from a trip scenario.	Evaluate	Unit conversions correct; strict vs non-strict inequalities distinguished.
Station 4 Savings Goals	7.EE.B.4b	Construct $px + q \geq r$ inequalities from weekly-deposit stories and round answers up or down.	Create	Whole-week rounding matches inequality direction; boundary point correctly identified.
Extension Tasks (all stations)	7.EE.B.4b	Author a new real-world problem that yields a two-step inequality.	Create	Story yields a valid $px + q > r$ or $< r$ form; key context facts present.
Exit Ticket	7.EE.B.4b	Independently write, solve, graph, and interpret a two-step inequality.	Apply / Evaluate	All four stages accurate; reflection articulates open vs closed circle rule.

Cross-Curricular Connections

Math $\leftrightarrow$ ELA: The interpretation step asks students to write a complete sentence using context vocabulary, supporting CCSS ELA Writing standards for short explanatory text.

Math $\leftrightarrow$ Science: Station 3 (Speed & Distance) uses the same distance = rate $\times$ time relationship students will encounter in 7th-grade physical science when studying motion.

Math $\leftrightarrow$ Financial Literacy: Stations 1 and 4 introduce spending limits and weekly savings — the same structure used in personal-budget planning, an essential real-world skill.

Anchor Chart — The Four-Step Inequality Workflow

Print this anchor chart at 8.5×11 inches and post it in your classroom for the duration of the unit. Students can also glue a copy into their interactive math notebooks as a personal reference.

STEP 1 WRITE	STEP 2 SOLVE	STEP 3 GRAPH	STEP 4 INTERPRET
Define a variable for the unknown. Read the word problem carefully and decide whether the relationship is $<$, $>$, $\leq$, or $\geq$. Write the inequality in the form $px + q > r$ or $px + q < r$.	Undo operations in reverse order: 1) Subtract q from both sides. 2) Divide both sides by p . ■ If p is negative, FLIP the inequality symbol.	Draw a number line. Place a circle at the boundary: • closed circle for $\leq$ or $\geq$ • open circle for $<$ or $>$ Shade the side of the line that contains the solutions.	Write a sentence in the original context that names the units. If the context requires whole units (people, items, weeks), round DOWN for $\leq$ limits and UP for $\geq$ minimums.

Worked Mini-Example: $3x + 4 \leq 19$

Watch how the four steps work together on a single example.

WRITE: The inequality is already written: $3x + 4 \leq 19$

SOLVE:

$$3x + 4 \leq 19$$

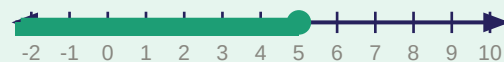
$$3x \leq 15 \text{ (subtract 4)}$$

$$x \leq 5 \text{ (divide by 3)}$$

INTERPRET: Any value of x that is 5 or smaller makes the original inequality true. Because the inequality is $\leq$, the boundary point 5 is included in the solution set — use a **closed circle**.

GRAPH:

$$x \leq 5$$



Key Vocabulary

Term	Definition
Inequality	A mathematical sentence that compares two expressions using $<$, $>$, $\leq$, $\geq$, or $\neq$.
Coefficient	The numerical multiplier of the variable (the p in $px + q$).
Constant	The fixed number added or subtracted (the q in $px + q$).

Station 1 — Spending Limits

STATION 1 • Spending Limits

Gift Cards • Per-Item Cost • Flat Shipping

Maya, Jonah, Priya, and Devon each have a fixed-amount gift card to spend at an online store. Each item they want costs the same price, and every order carries a flat shipping fee. Your job: figure out how many items each student can buy without going over their gift-card balance.

Problem 1. Maya has a \$50 gift card. She wants to buy friendship bracelets that cost \$4 each. The store charges a flat shipping fee of \$6 per order. How many bracelets can Maya buy without exceeding the value of her gift card?

WRITE	Let b = number of bracelets. Write your inequality here: _____
SOLVE	Show every inverse-operation step below.
GRAPH	Graph the solution set on the number line provided. 
INTERPRET	Explain what the solution means in the context of the problem.

Problem 2. Jonah has a \$35 gift card. He is shopping for comic books that cost \$3 each. Shipping is a flat \$5 per order. What is the greatest number of comic books Jonah can order?

WRITE	Let c = number of comic books. Write your inequality here: _____
SOLVE	Show every inverse-operation step below.

Student Recording Sheet

Name: _____ Date: _____ Class: _____

Directions: At each station, record your work in the matching section below. Use the Write / Solve / Graph / Interpret structure for every problem. Show all inverse-operation steps. Round your final answer to a whole number if the context requires it.

Station 1 — Spending Limits

Gift Cards • Per-Item Cost • Flat Shipping

Problem 1. _____

WRITE	Inequality: _____
SOLVE	
GRAPH	
INTERPRET	

Problem 2. _____

WRITE	Inequality: _____
SOLVE	
GRAPH	
INTERPRET	

Problem 3. _____

WRITE	Inequality: _____
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Exit Ticket — Formative Assessment

Name: _____ Date: _____ Class: _____

Complete all three questions independently. You have 5 minutes. Show your work on this page.

Question 1. Write and solve a two-step inequality.

Aiden has \$42 to spend on snacks for a movie night. Each snack pack costs \$5 and the delivery fee is \$7. What is the greatest number of snack packs Aiden can order? Write the inequality, solve it, and answer the question.

Write: Let n = number of snack packs. Inequality: _____

Solve:

Answer: _____

Question 2. Graph the solution set.

Graph the solution of $2x + 5 > 17$ on the number line below.

Solve:

Your graph here



Question 3. Reflect.

How can you tell whether to use an **open** circle or a **closed** circle on the number-line graph of an inequality? Explain in 1–2 complete sentences.

Mastery Rubric — Teacher Use

Emerging (1): Student writes the inequality but cannot solve it or graph it accurately.

Proficient (2): Student writes, solves, and graphs the inequality with one minor error; interpretation is correct.

Advanced (3): All four steps (Write / Solve / Graph / Interpret) are correct; reflection names the open-vs-closed circle rule and applies it to the new context.

Write: Let the variable represent the unknown quantity. Let c = number of comic books.

Inequality: $3c + 5 \leq 35$

Solve:

$$3c + 5 \leq 35$$

$$3c \leq 30 \text{ (subtract 5)}$$

$$c \leq 10 \text{ (divide by 3)}$$

Graph:

Solution: $c \leq 10$



Interpret: Jonah can buy up to 10 comic books. With 10 books the order totals $3(10) + 5 = \$35$, exactly the value of his gift card.

WATCH OUT — Common Mistake

Watch the direction: this is a $\leq$ inequality, so dividing by the positive coefficient 3 keeps the symbol pointing the same way.

Problem 3. Priya has a \$60 gift card. Each puzzle costs \$7 and shipping is \$4. Priya wants to keep at least \$5 on the card after this order. How many puzzles can she buy?

Write: Let the variable represent the unknown quantity. Let p = number of puzzles. The order must leave at least \$5 unused.

Inequality: $7p + 4 \leq 55$

Solve:

$$\text{Total spent must be at most } \$60 - \$5 = \$55.$$

$$7p + 4 \leq 55$$

$$7p \leq 51 \text{ (subtract 4)}$$

$$p \leq 7.2857... \text{ (divide by 7)}$$

Since p must be a whole number, $p \leq 7$.

Graph:

Solution: $p \leq 7$ (whole-number context)



Interpret: Priya can buy up to 7 puzzles. The inequality allows any value up to about 7.29, but since puzzles come in whole units, 7 is the maximum. She will keep $60 - (7 \times 7 + 4) = \$7$ on the card — meeting her minimum reserve of \$5.

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GRADE 7 • CCSS 7.EE.B.4b • DISCOVERY STATIONS

What's Inside This Resource

A complete 41-page unit for real-world two-step inequality problem solving.

41

PAGES

4

STATIONS

16

PROBLEMS

4

EXTENSIONS

INCLUDED IN THE FULL 41-PAGE PDF

Cover & Table of Contents

- Branded cover plus contents overview.

CCSS 7.EE.B.4b Alignment Chart

- Standards mapping with learning objectives
- and evidence of mastery.

4 Discovery Station Cards

- 16 problems across Spending Limits, Time
- Constraints, Speed & Distance, Savings Goals.

7-Page Student Recording Sheet

- Work space for Write / Solve / Graph / Interpret
- across the four stations.

13-Page Worked-Solution Answer Key

- Worked solutions, number-line graphs,
- interpretations, and common-mistake notes.

Teacher Notes & Pacing

- Learning targets, rotations, differentiation,
- assessment plan.

Anchor Chart & Worked Example

- WRITE → SOLVE → GRAPH → INTERPRET
- workflow, example, and vocabulary.

4 Write-Your-Own Extensions

- One open-ended inequality-authoring task
- at each station.

Exit Ticket — Page 27

- Three-question formative assessment
- with a three-level mastery rubric.

Final Review / Thank-You Page

- Closing branded page for the 41-page resource
- and UMPrintables.com review request.

RESOURCE STRUCTURE

Teacher support → alignment → anchor chart → station practice → student recording → exit ticket → answer key

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