UNIT 7 · STANDARD 6.EE.7

Equations and Inequalities Problem Solving

Lesson 7-7

Name: Type your name **Date:** Today's date **Class:** Class period

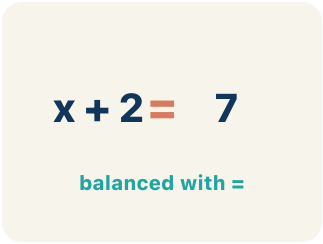
Key Vocabulary Level 2 Standard

Picture first, then the word, then a plain-language meaning. Say each word out loud.

'Twice a number is 18' → 2n = 18 — the equation models the words

Model

Write the definition:



x + 5 = 12 — exactly one answer: x = 7

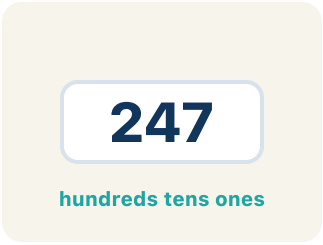
Equation

Write the definition:

x + 5 > 12 — many answers: x = 8, 9, 10, …

Inequality

Write the definition:



If the problem asks for a number of people and you get x = −3, that is NOT reasonable

Reasonableness

Write the definition:

stands for a number

"5 less than a number is 12" becomes x − 5 = 12, where x is the variable.

Variable

Write the definition:

number

"You can spend at most $20" is a constraint: cost ≤ 20.

Constraint

Write the definition:

Guided Notes Level 2 Standard

🎯 **WHAT WE'RE LEARNING TODAY**

I can model and solve real-world problems using equations and inequalities.

✏️ **Fill in each blank as we go. Use the Word Bank to help you.**

📚 **WORD BANK — FILL EACH BLANK WITH THE BEST WORD**

Model | Equation | Inequality | Reasonableness | Variable | Constraint

☝️ *Tap any word to see what it means and a picture.*

1 A drawing, equation, or diagram that represents a situation is a _____.

2 A math sentence with an equal sign is an _____.

3 A math sentence that compares values with <, >, ≤, or ≥ is an _____.

4 Checking whether an answer makes sense for the problem is checking its _____.

5 A letter that stands for the unknown amount in a problem is a _____.

6 A limit that tells which values are allowed in a problem is a _____.

🧱 Watch & Try — Worked Examples

See the notes in action: watch one worked all the way through, then try the next with the same steps.

👀 I do — watch

Follow each step as your teacher solves it.

Problem: A museum has some paintings. After adding 12, they have 45. Which equation models this?

A. $p + 12 = 45$

B. $p - 12 = 45$

C. $12p = 45$

D. $p / 12 = 45$

Step 1 'Adding 12' to the original number gives 45: $p + 12 = 45$.

Step 2 Solve: $p = 33$.

✅ **Answer:** A. $p + 12 = 45$

🧩 Try — put the steps in order

Drag the cards (or use the ▲▼ buttons) to put the solution steps in the right order, then press **Check**.

Solve: $p = 33$.

'Adding 12' to the original number gives 45: $p + 12 = 45$.

🤝 We do — together

Solve this one with your class using the same steps.

Problem: A detective needs more than 8 hours to finish the investigation. She has already worked 3 hours. Which inequality represents the additional hours h she needs?

A. $3 + h > 8$

B. $3 + h = 8$

C. $h > 3$

D. $8 + h > 3$

Step 1 _____

Step 2 _____

Answer: _____

✏️ **You do — your turn**

Now try one on your own. Show every step.

Problem: Which model is correct for: 'A number divided by 6 equals 7'?

A. $n / 6 = 7$

B. $6n = 7$

C. $n - 6 = 7$

D. $n + 6 = 7$

Show your work:

Try It

Solve on your own. Check the answer key when you are done.

1. Room 3: A sign warns, 'The safe holds at most 20 gold bars.' Which inequality models the number of bars x?

A. $x \leq 20$

B. $x \geq 20$

C. $x > 20$

D. $x = 20$

Show your work:

2. Room 4: A locked drawer clue reads, 'Five identical evidence boxes weigh 60 pounds in all.' Solve $5w = 60$ for each box's weight w.

A. $w = 12$

B. $w = 55$

C. $w = 300$

D. $w = 65$

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

Create two word problems about the same situation: one that requires an equation and one that requires an inequality. Solve both and explain why the models are different.

Sentence starter: Equation problem: ____. Model: ____. Solution: ____. Inequality problem: ____. Model: ____. Solution: ____. The models are different because ____.

Show your work:

Reflect — Exit Ticket

A box of donuts has some donuts. After giving away 7, there are fewer than 5 left. Which inequality represents the starting number of donuts d?

A. $d - 7 < 5$

B. $d + 7 < 5$

C. $d - 7 > 5$

D. $d - 7 = 5$

Your answer: