

# Write Equations

Lesson 7-1

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Class: \_\_\_\_\_

## Key Vocabulary

Level 1 support

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

$x + 5 = 12$  means 'some number plus 5 equals 12'

### Equation

A math sentence with an equal sign showing both sides are the same.

In  $n + 3 = 10$ , the letter  $n$  stands for the unknown number ( $n = 7$ )

### Variable

A letter that stands for an unknown number.

$7 + 3 = 10$  — both sides equal 10

### Equal sign

The = sign, showing both sides are the same.

$2x + 5$  is an expression; it becomes an equation when you write  $2x + 5 = 15$

### Expression

A math phrase with numbers and letters, but no equal sign.

## Key Ideas & Notes

- Detective Ruiz received a tip: 'A number of stolen gems plus 8 more equals 20 total gems.' She needs to write an equation to represent this clue before she can solve the case.
- How would you write this situation as an equation?
- Use the balance scale to see how each word problem translates into an equation. Drag the correct expression to each side of the scale to make it balance.

### Think About It

- What quantity is unknown in this situation?
- What does 'plus 8 more' tell you about the operation?
- What does 'equals 20 total' tell you?

### My Notes

---

---

---

---

---

## Guided Examples

### Example 1

**Which equation represents: 'A number plus 12 equals 30'?**

**Solution:** 'Plus' means addition, so the equation is  $n + 12 = 30$ .

**Answer:** A.  $n + 12 = 30$

### Example 2

**Which equation represents: 'Seven less than a number is 18'?**

**Solution:** 'Seven less than a number' means start with the number and subtract 7:  $n - 7 = 18$ .

**Answer:** A.  $n - 7 = 18$

### Example 3

**Which equation represents: 'Three times a number equals 21'?**

**Solution:** 'Three times' means multiply by 3, so the equation is  $3n = 21$ .

**Answer:** A.  $3n = 21$

# Write About the Math

## The Writing Revolution

I can explain my equation using the words equation, variable, equal sign, and expression.

### 1. Kernel Sentence subject + verb

**Model:** Equation is a math sentence with an equal sign showing both sides are the same.  
*Ecuación es una oración matemática con un signo igual que muestra que ambos lados son iguales.*

**Write a kernel sentence about equation. Use a subject and a verb.**

*Escribe una oración base sobre ecuación. Usa un sujeto y un verbo.*

---

---

### 2. Sentence Expansion because · but · so

**Kernel:** Equation matters in math  
*Ecuación importa en matemáticas*

Expand the kernel three ways. Add a reason, a contrast, and a result.

**because**  
*porque* **Equation matters in math because \_\_\_\_.**  
*Ecuación importa en matemáticas porque \_\_\_\_.*

---

**but**  
*pero* **Equation matters in math, but \_\_\_\_.**  
*Ecuación importa en matemáticas, pero \_\_\_\_.*

---

**so**  
*entonces* **Equation matters in math, so \_\_\_\_.**  
*Ecuación importa en matemáticas, entonces \_\_\_\_.*

---

### 3. Sentence Types 4 ways to write a math idea

**Statement**  
*Afirmación*

Tell one true fact about equation.  
*Di un hecho verdadero sobre equation.*

**Equation** \_\_\_\_.

---

**Question**  
*Pregunta*

Ask a question about equation.  
*Haz una pregunta sobre equation.*

**How does** \_\_\_\_ ?  
*¿Cómo \_\_\_\_ ?*

---

**Exclamation**  
*Exclamación*

Show excitement about equation.  
*Muestra entusiasmo sobre equation.*

**Wow,** \_\_\_\_ !  
*¡Guau, \_\_\_\_ !*

---

**Command**  
*Mandato*

Tell a partner what to do with equation.  
*Dile a un compañero qué hacer con equation.*

**First,** \_\_\_\_ .  
*Primero, \_\_\_\_ .*

---

### 4. Explain Your Reasoning use a sentence starter

**The unknown is** \_\_\_\_ .  
*La incógnita es* \_\_\_\_ .

**My equation is** \_\_\_\_ .  
*Mi ecuación es* \_\_\_\_ .

**I would write one to** \_\_\_\_ .  
*Escribiría una para* \_\_\_\_ .

---

---

---

## Try It

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

**1. Which equation represents: 'A number divided by 4 equals 8'?**

A.  $n / 4 = 8$

B.  $4n = 8$

C.  $n - 4 = 8$

D.  $n + 4 = 8$

Show your work:

---

---

---

**2. A detective found some fingerprints on Monday and 14 more on Tuesday, for a total of 30. Which equation represents this?**

A.  $f + 14 = 30$

B.  $f - 14 = 30$

C.  $14f = 30$

D.  $f / 14 = 30$

Show your work:

---

---

---

## Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

**Write a real-world situation that can be modeled by the equation  $n / 5 = 9$ . Explain what  $n$  represents and verify your equation makes sense.**

*Sentence starter: Situation: \_\_\_\_\_. In this problem,  $n$  represents \_\_\_\_\_. Check:  $n =$  \_\_\_\_\_ because \_\_\_\_\_  $\div 5 = 9$ .*

Show your work:

---

---

---

---

## Reflect — Exit Ticket

**Which equation represents: 'A number divided by 6 equals 9'?**

- A.  $n / 6 = 9$
- B.  $6n = 9$
- C.  $n - 6 = 9$
- D.  $n + 6 = 9$

Your answer:

---

---

---

---

## Answer Key & Teacher Guide

1. **Try It 1:**  $A. n / 4 = 8$  — *'Divided by 4' means division:  $n / 4 = 8$ .*
2. **Try It 2:**  $A. f + 14 = 30$  — *The detective's Monday fingerprints ( $f$ ) plus 14 more equals 30:  $f + 14 = 30$ .*
3. **Exit Ticket:**  $A. n / 6 = 9$  — *'Divided by 6' means division:  $n / 6 = 9$ . Check:  $54 / 6 = 9$  ✓*

### Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Equation is a math sentence with an equal sign showing both sides are the same.
- **Expansion:** *because* gives a reason, *but* shows a contrast or exception, *so* shows a result. Answers vary; each must keep the kernel idea and add the correct kind of detail.
- **Sentence types:** Statement ends with a period, question with "?", exclamation with "!", and a command starts with an action verb (a "bossy" verb).