

Expressions & One-Step Equations: teacher script

Use with the Lesson presenter (room page -> Lesson presenter). Slides show only student cues; this script has what to say. Students need the printed lesson worksheet and a pencil.

Presenter keys: Right/left arrows change slides. N shows short notes. T pauses the timer. P picks a student. F is fullscreen.

Response routine: Students write each answer on their worksheet, then show it with fingers (1 = A, 2 = B, 3 = C, 4 = D). Scan the room before revealing.

SLIDE 1: TODAY'S TARGET

1 min

Say	Today's learning target is: "I can write and evaluate expressions and solve one-step equations using inverse operations." Read it with me.
Say	Here is how you will know you have it: the success criteria. You will prove it on the exit ticket at the end of class.
Point to	The agenda and the key vocabulary. Tell students they need their notebook, guided notes page, and pencil.

SLIDE 2: WARM-UP

0:00–0:08

Say	Turn to Part 2 of your lesson worksheet. Answer the three questions in complete sentences. You have 5 minutes of silent work. Go.
Do	Start the 8:00 timer. Circulate. At 5 minutes say: "Turn to your partner and compare answers for 2 minutes."
Look for	1) 11 (multiply first). 2) 8. I subtracted 7 from 15. 3) Examples: 5 more than a number; a number increased by 5.
Say	Call on 2-3 students for questions 1 and 2, then reveal. Say: "We will come back to question 3 at the end of class."

SLIDE 3: HOOK

1 min

Say	Read the question on the screen: "I multiplied a number by 4 and got 36. What was my number?" Circle your prediction in Part 3 of your worksheet and write why. Then vote.
Background	Say: "I'm thinking of a number. I multiplied it by 4 and got 36. What was my number?" Ask how students figured it out. That is solving an equation!
Do	Tap +1 for each vote. Do not give the answer. Say: "By the end of the lesson, you will be able to check your prediction."

SLIDE 4: LEARN 1: WORDS TO EXPRESSIONS**3 min**

Say	"5 more than n" = $n + 5$. "3 times a number" = $3n$. "A number divided by 4" = $n/4$. Careful: "3 less than n" is $n - 3$.
Worksheet	Say: "Part 5: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: "3 LESS THAN N" is written $n - 3$, not $3 - n$. (tap "Show the missing words" after students try.)
Explore	Flip each card only after students guess: 5 more than $n = n + 5$; twice a number = $2n$; 7 less than $x = x - 7$. Students do: Translate "5 more than n," "twice a number," and "7 less than x."
Turn and talk	Say: "Why is "3 less than n" written $n - 3$ and not $3 - n$?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: (B) $n - 4$. Start with n, then take away 4.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 5: LEARN 2: EVALUATE**3 min**

Say	Substitute the value, then follow the order of operations (parentheses, exponents, multiply/divide, add/subtract).
Worksheet	Say: "Part 6: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: To EVALUATE, substitute the value and follow the ORDER OF OPERATIONS. (tap "Show the missing words" after students try.)
Explore	Students do: Evaluate $2n + 3$ when $n = 5$.
Turn and talk	Say: "What happens if you skip the order of operations when evaluating?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: 20 . $4 \times 5 = 20$.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 6: LEARN 3: EQUIVALENT EXPRESSIONS**3 min**

Say	Combine like terms: $4x + 2x = 6x$. Distributive property: $3(x + 2) = 3x + 6$.
Worksheet	Say: "Part 7: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: Combine LIKE TERMS. The DISTRIBUTIVE property: $3(x + 2) = 3x + 6$. (tap "Show the missing words" after students try.)
Explore	Students do: Simplify $5y + 2 + 3y$.

Turn and talk	Say: "Why can you combine $4x$ and $2x$ but not $4x$ and 2 ?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: (B) $2x + 10$. Multiply both terms by 2.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 7: LEARN 4: SOLVE WITH BALANCE

3 min

Say	Solve one-step equations with inverse operations. Do the same thing to both sides to keep the balance. Check by substituting.
Worksheet	Say: "Part 8: fill in the blanks (A), do the task (B), write what your partner said (C), and answer the check (D)." Blank answers: Use INVERSE OPERATIONS and do the same to BOTH SIDES. (tap "Show the missing words" after students try.)
Explore	Point to the model: $x + 4 = 10$. Ask: "What do you notice?" Students do: Solve $x + 4 = 10$ and check your answer.
Turn and talk	Say: "Why must you do the same operation to both sides of an equation?" Start the 1:00 timer. Then pick a pair to share.
Check	Read the question aloud. Students write, then show fingers. Scan, then reveal. Answer: 6. Subtract 4 from both sides.
If < 80% correct	Go back to the Explore box and model a second example out loud, then re-ask the check with a partner discussion first. See "Misconceptions to watch for" at the end of this script.

SLIDE 8: WORKED EXAMPLE (I DO)

2 min

Say	Watch how I solve this. Write the final answer in Part 9 of your worksheet.
Think aloud	Solve $x + 7 = 15$ aloud with a balance drawing: "To get x alone, I undo $+7$ by subtracting 7 from both sides. $x = 8$. Check: $8 + 7 = 15$. (correct)"
Reveal	Problem: $x + 7 = 15$. Step 1: x has 7 added to it. Step 2: Undo $+7$ by subtracting 7 from BOTH sides: $x + 7 - 7 = 15 - 7$. Step 3: $x = 8$. Check: $8 + 7 = 15$ (correct)

SLIDE 9: WE DO

2 min

Say	Now we solve one together in Part 10. Read the problem with me.
Do	Before revealing each step, ask: "What should we do next?" Take one answer, then tap "Show next step."
Steps	x is multiplied by 5. The inverse of multiplying is dividing, so divide both sides by 5. $x = 9$. Check: $5 \times 9 = 45$ (correct)

Answer	$x = 9$
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SLIDE 10: YOU DO 2 min

Say	Now on your own: Part 11. Solve it with no talking. You have 2 minutes.
Answer	42. Multiply both sides by 6: $y = 42$.
Then	Students who got it: launch the room. Students who missed it: 3-minute reteach at your table, then start the room at the Explorer level.

SLIDE 11: WORK TIME: THE VARIABLE VILLAIN 0:20–0:48

Say	Open The Variable Villain on your device. Type your name, choose the level I assigned, and begin. Whisper voice with your partner only.
Do	Start the 28:00 timer and leave this slide up. Circulate with the answer key.
Checkpoints	At 10 minutes: stage 2 done. At 20 minutes: stage 4 done; give a 5-minute warning for the final lock and turn-in.
Turn-in	Students tap "Copy my work" and paste it into the Canvas assignment (Text Entry).

SLIDE 12: DEBRIEF 0:48–0:52

Ask	What is the difference between an expression and an equation? How do you know which inverse operation to use? Why should you check your solution?
Say	Back to warm-up question 3 and our hook vote: were our predictions right? What evidence changed your mind?
Answer	Examples: 5 more than a number; a number increased by 5.

SLIDE 13: EXIT TICKET 0:52–1:00

Say	Clear your desk except a pencil. Work silently and on your own. For every answer, write "I know because..." and use evidence.
Do	Hand out the exit ticket. Start the 8:00 timer. Collect and sort with page 3 (Mastered / Approaching / Beginning).

MISCONCEPTIONS TO WATCH FOR

- "3x means $3 + x$." It means 3 times x .
- "Do the operation you see." Use the inverse operation to undo it.

- "Only change one side of the equation." Whatever you do to one side, do to the other.