

The = sign: a balance, not an answer

CURRICULUM ALIGNMENT

ALG.EXP.2 interpret the meaning of symbols or pictures in number sentences.

INTERACTIVES Balance Scales · challenge, display, explore

WHAT THIS LESSON TEACHES

The equals sign means 'is the same as'. Both sides must hold exactly the same amount so the balance pans sit level.

→ $3 + 2 = 5$ because both sides are the same amount.

→ $4 + 4 = 8$ so the school-yard seesaw sits level.

MODEL THIS ON THE BOARD

LEVEL PANS ON THE YARD SEESAW

- 1 Look at the number sentence $9 = 6 + \underline{\quad}$.
- 2 The left pan holds **9**. The right pan holds **6** and a gap.
- 3 **6** and **3** make **9**, so write **3** in the gap: $9 = 6 + 3$.
- 4 The pans sit level because both sides hold the same amount.

LESSON ARC

Open with the playground seesaw — when both sides sit level, the weights match. Move to the balance-scales interactive and walk three pictures: $3 + 2$ with 5 (level), $4 + 1$ with 5 (level), $4 + 4$ with 7 (tips). Pupils call level or tips before pans settle, then write $3 + 2 = 5$ in copy reading equals as 'the same as'. Class Challenge finds the missing number so pans sit level. Student Activity Book page follows.

TEACHING MOVES

1. **Getting Started.** Show the seesaw image and take three hands-up answers. Steer every reply toward 'same weight' or 'same number of children' — that phrase becomes the bridge into equals.
2. **Watch and Notice.** Run the three balance pictures slowly. On $3 + 2 = 5$ and $4 + 1 = 5$, pause on the level pans and say 'is the same as' aloud. On $4 + 4$ against 7, let the tip land, then ask 'why can we not write equals here?' before naming it.
3. **Try It Together.** One pupil loads each maths line at the board; the class calls level or tips before the pans settle. Reload $3 + 2$ with 5, $5 + 1$ with 6, then $4 + 4$ with 7 — celebrate the catch on the tip. Swap the loader each turn.
4. **Write the sentence in your copy.** Pupils write $3 + 2 = 5$ and read it as 'the same as'. Walk the rows watching the = sign only — listen for 'makes' or 'the answer is' and gently revoice to 'the same as'.
5. **Class Challenge.** Keep turns brisk: $4 + ?$ against 6, $5 + ?$ against 8, $7 + 3$ against ?, $8 + 4$ against ?. Wait for the class to name the missing number aloud before moving on — not just the pupil at the board. If you hear 'the answer goes here', revoice: level means both sides hold the same amount.
6. **What Did We Notice?.** Ask: when do we write equals — when pans sit level, or whenever we finish adding? Revoice any solid answer as 'equals means is the same as, not the answer goes here', and point back at a level pan if 'makes' language creeps in.

COMMON MISCONCEPTIONS

⚠ Pupils read $3 + 2 = 5$ as 'three plus two makes five' and treat the right side as the only place an answer can sit.

Freeze on a level pan and cover the right side first: 'what does the left hold?' Then uncover. Both sides name the same amount — equals is the match, not a one-way arrow.

⚠ On a tip ($4 + 4$ against 7), pupils still want to write = because 'we finished the adding'.

Leave the tipped pans on screen. Ask 'are both sides the same amount?' When the class says no, withhold the = sign out loud: we only write it when the pans sit level.

⚠ On missing-number turns, pupils stare only at the right pan and guess any number that 'feels finished'.

Cover the empty pan and ask what the loaded side already holds. Then: 'what must the other side hold to sit level?' Build from the full side, not from a blank.

DIFFERENTIATION

EMERGING

- Stay on whole-number balances with totals to 6 only; pre-load one pan so the pupil places counters on the other pan until it sits level.
- During copybook, have them trace a level-pan sketch above $3 + 2 = 5$ before writing the signs.

DEVELOPING

- After a Class Challenge find, flip the sentence (e.g. $? + 4$ against 6) and ask whether the missing number changes.
- On a level result, ask 'name a different pair that would also sit level against 8' before the next board turn.

PROFICIENT

- Narrate a harder board variant: both pans start empty — give a total of 10 and ask for two different level number sentences, written in copy as 'the same as'.
- Fast finishers move to the Student Activity Book page and justify each = by whispering 'both sides hold...'.

✦ **Cross-curricular:** Link back to PE or yard time — two children on the school seesaw only sit level when both sides match.

ANSWER KEY

Your turn • Make both sides the same. A) 9 B) 5 C) 11

Is it right? • Both sides are the same. ☐ tick • Both sides are the same. ☐ cross

Star challenge • Make both sides the same. 4

EXTENSION SHEET • STRETCH ANSWERS

S1: level

S3: 10

S2: 3

S4: true