

Introducing letter-symbols as variables

CURRICULUM ALIGNMENT

ALG.EXP.4 articulate, represent and solve mathematical situations through the use of expressions and equations that include letter-symbols.

INTERACTIVES **Balance Scales** · challenge, display, explore

WHAT THIS LESSON TEACHES

A letter such as x or n stands for an unknown number we have not found yet.

→ Let n be counters hidden in a game bag.

→ $x + 3$ balances 7 so x is unknown.

MODEL THIS ON THE BOARD

FINDING x IN $x + 3 = 7$

- 1 Write $x + 3$ on the left pan.
- 2 Write 7 on the right pan.
- 3 Take 3 from both pans to leave $x = 4$.

ANSWER KEY

a) $x = 1$

b) $x = 6$

c) $x = 3$

Q1: 4

Q2: 6

Q3: 0

a) Always : That is the rule of the lesson.

b) Always : One balance fixes one value for x .

c) Never : Only 7 makes $x + 3 = 10$ true.

d) Always : Two bags with the same unknown amount.

EXTENSION SHEET · STRETCH ANSWERS

S1: 19

S2: 16

S3: 22

S4: 26

S5: 32