

Substituting values into expressions

CURRICULUM ALIGNMENT

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

INTERACTIVES Function Machine · challenge, display, explore

WHAT THIS LESSON TEACHES

A letter stands for a number we can choose or work out. Replace the letter with the given number then calculate.

- In $2n + 3$ replace n with 5 to get 2 times 5 plus 3 equals 13.
- For $4n + 1$ with n equals 3 multiply 4 times 3 first then add 1.

MODEL THIS ON THE BOARD

WORK OUT $2N + 3$ WHEN $N = 4$

- 1 Write the expression with the value shown: $2n + 3$ when $n = 4$
- 2 Replace the letter n with 4 to get 2 times 4 + 3
- 3 Do the multiplication first: $8 + 3$
- 4 Add the numbers: 11

ANSWER KEY

Scaffold: visual check on the page

Q1: 19

Q2: 37

Q3: 13

Q4: 9

Q5: 17

Q6: 36

- a) **Always** : The same number in the same rule gives the same output.
- b) **Sometimes** : True for $2n + 1$; false for $0 \times n$, which is 0 whatever n is.
- c) **Always** : Order of operations does multiplication before addition.
- d) **Never** : Different inputs produce different outputs for this expression.