Walt understand coefficient and multiplication in an algebraic way
Success Criteria I know in algebra we remove the multiplication and division symbols.

Video

Fluency

1 For each of the following:

(i) $3d + 4f - 3bd - 3 + 7b$ **(ii)** $5g - 3r + 5rf = 7 - 3b$ **(iii)** $b + f - 3bf + 8$

(a) identify whether this is an equation or an expression

(b) write down the coefficient of b

(c) write down all the terms in the equation or expression

(d) list the variables

(e) write down any constants.

2 Rewrite the following using algebraic conventions.

(a) $d \times 4 \times c$ **(b)** $2 \times t \div 7$ **(c)** $k \times g \times 4 \times k$ **(d)** $6 \div (f \times g)$

3 Nerida has w watches and r rings. Donna has two times as many watches and 2 fewer rings than Nerida.

(a) Write an expression for the number of watches and rings Nerida has altogether.

(b) If Nerida has 8 watches and rings to start with, write an equation to show this information.

(c) Write an expression for the number of watches Donna has.

(d) Write an expression for the number of rings Donna has.

(e) If Donna has 14 watches and rings altogether, write an equation to show this information.

(f) If Nerida loses 2 of her rings, write an expression in terms of w and r to show how many watches and rings Nerida has now.

4 (a) The coefficient of x in $6y + 7xy + 5x$ is:

A 5 **B** 7 **C** $5x$ **D** $6y$

(b) The coefficient of xy in $5 + 8xy - 2y + 4x$ is:

A 2 **B** 4 **C** 8 **D** $8xy$

(c) The coefficient of a in $5b + 2ab + 6$ is:

A 0 **B** 2 **C** 5 **D** 6

(d) The coefficient of x in $4xy - 6y + x + 8$ is:

A 0 **B** 1 **C** 4 **D** 6

5 (a) The constant in the expression $\frac{1}{2}x^2y - 3 + 5xy$ is:

A -3 **B** $\frac{1}{2}$ **C** 3 **D** 5

(b) The constant in $3ef + 7efg + 12 + 11ef + 4e$ is:

A 2 **B** 7 **C** 11 **D** 12

6 Write the following without division and multiplication signs or brackets. Do not simplify your expressions.

(a) $x \div 6$

(b) $h \div 9$

(c) $6 \times a \div 11$

(d) $15 \div (3 \times r)$

(e) $21 \div (12 \times v)$

(f) $4 \times s \div 19$

(g) $8 \div x - u \div 6$

(h) $h \div 5 + 4 \div i$

(i) $c \times u \div 5 + 9 \times y$

(j) $q \div (7 \times c) - g \times h \div 4$

(k) $v \times z \div 6 - 8 \div (f \times s)$

(l) $3 \div (t \times r) + 6 \times w \div (y \times z)$

(m) $4 \times h \times b \div (2 \times r)$

(n) $6 \times c \times a \div (5 \times e \times u)$

7 There are a apples and p pears in a fruit dish. There are 5 apples and 4 pears in a second dish. The total number of pieces of fruit is:

A $a + p$ **B** $5a + 4p$ **C** $a + 5a + p + 4p$ **D** $a + p + 9$

8 Andrew has y number of pencils in his pencil case.

(a) Dina has $y + 7$ pencils in her pencil case. What does this mean?

(b) Simon has $2y$ pencils in his pencil case. What does this mean?

(c) Suppose Cindy has $2y - 2$ pencils in her pencil case. Does she have more or fewer pencils than Simon?

Check your answers

1 **(a)** **(i)** expression **(ii)** equation **(iii)** expression

(b) **(i)** 7 **(ii)** -3 **(iii)** 1

(c) **(i)** $3d, 4f, -3bd, -3, 7b,$ **(ii)** $5g, -3r, 5rf, 7, -3b$

(iii) $b, f, -3bf, 8$

(d) **(i)** b, d and f **(ii)** b, f, g and r **(iii)** b and f

(e) **(i)** -3 **(ii)** 7 **(iii)** 8

2 **(a)** $4cd$ **(b)** $\frac{2t}{7}$ **(c)** $4gk^2$ **(d)** $\frac{6}{fg}$

3 **(a)** $w + r$ **(b)** $w + r = 8$ **(c)** $2w$

(d) $r - 2$ **(e)** $2w + r - 2 = 14$ **(f)** $w + r - 2$

4 **(a)** A **(b)** C **(c)** A **(d)** B

5 **(a)** A **(b)** D

6 **(a)** $\frac{x}{6}$ **(b)** $\frac{h}{9}$ **(c)** $\frac{6a}{11}$ **(d)** $\frac{15}{3r}$

(e) $\frac{21}{12v}$ **(f)** $\frac{4s}{19}$ **(g)** $\frac{8}{x} - \frac{u}{6}$ **(h)** $\frac{h}{5} + \frac{4}{i}$

(i) $\frac{cu}{5} + 9y$ **(j)** $\frac{q}{7c} - \frac{gh}{4}$ **(k)** $\frac{vz}{6} - \frac{8}{fs}$ **(l)** $\frac{3}{rt} + \frac{6w}{yz}$

(m) $\frac{4bh}{2r}$ **(n)** $\frac{6ac}{5eu}$

7 D

8 **(a)** Dina has seven more pencils than Andrew.

(b) Simon has twice as many pencils as Andrew.

(c) Cindy has two fewer pencils than Simon.

(d) $y - 3$ **(e)** $y + 10$ **(f)** $2y - 3$ **(g)** $2y + 1$