LIKE AND UNLIKE TERMS

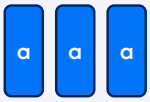
BUILDING BLOCKS

NAME _____ CLASS _____ DATE _____

KEY IDEA

3a means 3 × a or a + a + a.

The number in front of the letter is the coefficient.
In 3a the coefficient is 3. a on its own means 1a.



3a

1 Write each of these in a simpler way.

a) b + b + b + b = ☐

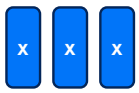
b) 5 × m = ☐

c) y × 7 = ☐

d) k + k = ☐

2 Write the term or expression shown by each set of tiles.

a)



☐

b)



☐

c)



☐

3 Write the coefficient of each term.

a) 8t ☐ **b)** 12h ☐ **c)** g ☐ **d)** 20w ☐

4 Sort the cards into the two groups.

2a	5b	a	7a	3b	b

a terms	b terms

LIKE AND UNLIKE TERMS

SUPPORT

NAME _____ CLASS _____ DATE _____

KEY IDEA

Like terms have exactly the same letters and powers.

4m and 9m are like. 3x and 3y are unlike.

x and x^2 are unlike — the tiles are different.



1 Are the terms like or unlike? Circle your answer.

a) 6p and 2p LIKE UNLIKE

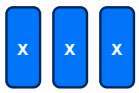
b) 5c and 5d LIKE UNLIKE

c) y and 4y LIKE UNLIKE

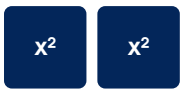
d) n and n^2 LIKE UNLIKE

2 Write the term shown by each group of tiles.

A



B



C



D



Which two groups are like terms? Group ☐ and group ☐

3 Circle the term that is like the following:

a) 7r — 7s, r^2, 2r, 7

b) $4k^2$ — 4k, k^2, k, 4

c) 10 — 10z, z, 3, z^2

4 Sort the terms into sets of like terms.

5h, 3g, h, 8, 2g, 11, 9h, g

h terms	g terms	numbers

LIKE AND UNLIKE TERMS

CORE

NAME _____ CLASS _____ DATE _____

KEY IDEA

Like terms have the same letters with the same powers. The coefficient does not matter: 5p, –3p and 0.5p are like terms. The order of the letters does not matter: 3ab and 8ba are like terms because ab = ba.

FLUENCY

1 Sort these terms into sets of like terms.

$4c$ $-2d^2$ c 6 $7d^2$ $-c$ $0.5d^2$ -9 $3d$

.....

.....

.....

.....

2 Write the coefficient of each term.

a) $9fg$ ☐ **b)** $-w$ ☐ **c)** $0.5k$ ☐ **d)** $-12n^2$ ☐

REASONING

3 Read what Jo and Ben say.

Jo says, "7a and 7b are like terms because they both have 7."
Ben says, "2mn and 5nm are unlike terms because the letters are in a different order."

Is either of them correct? Explain your answer.

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4 Write a term that fits each description.

a) It is like $3t^2$ and has a coefficient of –4. ☐

b) It is like 6pq and has a coefficient of 1. ☐

c) It is unlike 5x but has the same coefficient. ☐

d) Explain why $3x$ and $3x^2$ are unlike terms.

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LIKE AND UNLIKE TERMS

GREATER DEPTH

NAME _____ CLASS _____ DATE _____

REASONING

1 Is each statement always, sometimes or never true? Circle your answer.

If it is sometimes true, give an example of when it is true and when it is not.

a) Two terms with the same coefficient are like terms. ALWAYS SOMETIMES NEVER

b) ab and ba are like terms. ALWAYS SOMETIMES NEVER

c) x^2 and 2x are like terms. ALWAYS SOMETIMES NEVER

PROBLEM SOLVING

2 Here is a set of terms.

$2a$	$5ab$	$-a^2$	$3ba$	a	$4b^2$	$-ab$	$6a^2$

a) Which term has no like term? ____ **b)** Which set has the most terms? ____

3 Here are four rectangles. The lengths are in cm.

A



Area: ____

B



Area: ____

C



Area: ____

D



Area: ____

Which two pairs of rectangles have areas that are like terms? ____

★ CHALLENGE FOR ALL

4 I am thinking of a term.

- It is like $3s^2t$.
- Its coefficient is a negative even number.
- When it is added to $6ts^2$, the result has a coefficient of 2.

a) What is the term? ____ **b)** What can you add to $6ts^2$ to get 0? ____

LIKE AND UNLIKE TERMS

ANSWERS

BUILDING BLOCKS

1 a) 4b · b) 5m · c) 7y · d) 2k
2 a) 3x · b) 2x + 4 · c) $x^2 + 2x$
3 a) 8 · b) 12 · c) 1 · d) 20
4 a terms: 2a, a, 7a · b terms: 5b, 3b, b

SUPPORT

1 a) like · b) unlike · c) like · d) unlike
2 A: 3x · B: $2x^2$ · C: 4 · D: x · groups A and D
3 a) 2r · b) k^2 · c) 3
4 h terms: 5h, h, 9h · g terms: 3g, 2g, g · numbers: 8, 11

CORE

1 4c, c, –c · $-2d^2$, $7d^2$, $0.5d^2$ · 6, –9 · 3d
2 a) 9 · b) –1 · c) 0.5 · d) –12
3 Neither is correct. 7a and 7b are unlike because the letters are different (the coefficient does not matter). 2mn and 5nm are like because mn = nm.
4 a) $-4t^2$ · b) pq (or qp) · c) e.g. 5y · d) x and x^2 are different powers of x (x^2 means x × x), so the terms are unlike

GREATER DEPTH

1 a) sometimes (5a and 5a are like; 5a and 5b are not) · b) always · c) never
2 a) $4b^2$ · b) the ab set: 5ab, 3ba, –ab
3 A: 3x · B: x^2 · C: $2x^2$ · D: 5x · A and D are like terms; B and C are like terms
4 a) $-4s^2t$ · b) $-6ts^2$ (or $-6s^2t$)