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Expanding double brackets worksheet easy

Expanding double brackets easy worksheet.   How to expand double brackets.   Expanding double brackets example.   Expanding brackets worksheet with answers.   Expanding double brackets worksheet with answers.

In this lesson, we will learn more about expanding double brackets. We will use area models to visualise the process. Double brackets are two brackets written next to each other. The two brackets are multiplying each other. Expanding double brackets means multiplying terms in the pair of expressions to remove the brackets. Imagine we wanted to remove the brackets from the pair of expressions below. We have to expand the brackets.

Expanding double brackets worksheet with answers.

In this lesson, we will learn more about expanding double brackets. We will use area models to visualise the process. Double brackets are two brackets written next to each other. The two brackets are multiplying each other. Expanding double brackets means multiplying terms in the pair of expressions to remove the brackets. Imagine we wanted to remove the brackets from the pair of expressions below. We have to expand the brackets. Expanding double brackets is easy.
Expand the double brackets below.

Imagine we wanted to remove the brackets from the pair of expressions below. We have to expand the brackets.
Expanding double brackets is easy. Expand the double brackets below. Write the first term in the first brackets (x) in front of the second brackets (x + 2). x(x + 2) Write the second term in the first brackets (1) in front of the second brackets (x + 2), and add to the previous result. x(x + 2) + 1(x + 2) Note: The term is added because there is a + before the second term in the first brackets. We have written the double brackets as single brackets added together. Expand the first single brackets, x(x + 2). Multiply the first term inside the brackets (x) with the term outside the brackets (x).
x × x = x2 x2 Multiply the second term inside the brackets (2) with the term outside the brackets (x), and add to the previous result x × 2 = 2x x2 + 2x We have expanded the first single brackets x(x + 2) = x2 + 2x Expand the second single brackets, 1(x + 2). Multiply the first term inside the brackets (x) with the term outside the brackets (1).
Multiply the second term inside the brackets (2) with the term outside the brackets (1), and add to the previous result. We have expanded the second single brackets 1(x + 2) = x + 2 We have expanded all brackets. Replace the single brackets with their expansions. Simplify the expression if necessary by collecting like terms together. In our example, we can collect the x terms together. x2 + 2x + x + 2 = x2 + 3x + 2 We have expanded the double brackets. Lesson Slides The slider below shows another real example of how to expand double brackets. Multiplying a number with a variable Multiplying a number with a variable with a coefficient Multiplying a variable with a variable Each term in the brackets will have a sign. positive terms have a + sign in front of them, or no sign if it is the first term. negative terms have a − sign in front of them. These signs must be included when multiplying terms. Remember the rules for multiplying different signs: Same signs give a plus: Different signs give a minus: This test is printable and sendable GCSEKS3Level 1-3Level 4-5AQACambridge iGCSEEdexcelEdexcel iGCSEOCRWJEC Level 1-3GCSEKS3AQAEdexcelOCRWJECCambridge iGCSEEdexcel iGCSE The process by which we remove brackets is called expanding (or multiplying out) the brackets. This is the opposite process to factorising. To expand 3(x+2) we need to multiply 3 by x and by 2 \textcolor{red}{3}(\textcolor{limegreen}{x}+\textcolor{blue}{2}) = (\textcolor{red}{3}\times \textcolor{limegreen}{x}) + (\textcolor{red}{3}\times \textcolor{blue}{2}) = \textcolor{red}{3}\textcolor{limegreen}{x} + \textcolor{purple}{6} This can become harder as the terms get more tricky. Level 1-3GCSEKS3AQAEdexcelOCRWJECCambridge iGCSEEdexcel iGCSE Level 4-5GCSEKS3AQAEdexcelOCRWJECCambridge iGCSEEdexcel iGCSE When expanding double brackets, we need to multiply each of the things in the first bracket by each of the things in the second bracket. The FOIL method is a way of ensuring this every time. F – First ,   O – Outside,   I – Inner ,   L – Last Using the FOIL method will always give your answer in the same form, all you need to do is simplify by collecting the like terms. \textcolor{red}{x^2} \textcolor{limegreen}{-2x}\textcolor{purple}{+5x}\textcolor{blue}{-10} = \textcolor{red}{x^2} \textcolor{orange}{+ 3x} \textcolor{blue}{-10} Level 4-5GCSEKS3AQAEdexcelOCRWJECCambridge iGCSEEdexcel iGCSE Expand the following, 2(3a+5) [1 mark] The green arrow shows the first calculation 2 \times 3a = 6a The red arrow shows the second calculation 2 \times 5 = 10 This gives the final answer as 6a+10 Level 1-3GCSEKS3AQAEdexcelOCRWJECCambridge iGCSEEdexcel iGCSE Expand the following, -2y(2x-7y) [2 marks] The green arrow shows the first calculation -2y \times 2x = -4xy The red arrow shows the second calculation -2y \times -7y = 14y^2 This gives the final answer as -4xy+14y^2 Level 1-3GCSEKS3AQAEdexcelOCRWJECCambridge iGCSEEdexcel iGCSE Using FOIL expand and simplify the following (x + 3)(x - 4). [3 marks] Using the FOIL method we get F = \textcolor{red}{x \times x = x^2} O = \textcolor{limegreen}{x \times -4 = -4x} I = \textcolor{purple}{3 \times x = 3x} L = \textcolor{blue}{3 \times -4 = -12} We must collect like terms to simplify our answer \textcolor{red}{x^2} \textcolor{limegreen}{- 4x} \textcolor{purple}{+3x} \textcolor{blue}{-12} = \textcolor{red}{x^2}\textcolor{maroon}{ - x} \textcolor{blue}{- 12}. Level 4-5GCSEKS3AQAEdexcelOCRWJECCambridge iGCSEEdexcel iGCSE Expanding Brackets Example Questions We need to multiply everything inside the bracket by 3xy, thus 3xy(x^2 +2x-8) \\ = 3xy \times x^2 + 3xy \times 2x + 3xy \times (-8) \\ = 3x^3y + 6x^2y - 24xy Save your answers with Gold Standard Education We need to multiply everything inside the bracket by 9pq, thus 9pq(2 - pq^2 - 7p^4) \\ =9pq \times 2 - 9pq \times pq^2 - 9pq \times 7p^4 \\ = 18pq -9p^{2}q^3 - 63p^{5}q Save your answers with Gold Standard Education We need to make sure that we multiply everything in the left bracket by everything in the right bracket. By using FOIL or another method of remembering to do every multiplication, we get (y-3)(y-10) \\ = y\times y+y\times(-10)+(-3)\times y +(-3)\times(-10) \\ =y^2 -10y -3y +30 Then, collecting like terms we get the result of the expansion to be y^2 -13y + 30 Save your answers with Gold Standard Education We need to make sure that we multiply everything in the left bracket by everything in the right bracket. By using FOIL or some other method of remembering to do every multiplication, we get (m+2n)(m-n) \\ = m\times m+m\times(-n)+2n\times m +2n\times(-n) \\ = m^2 -nm +2nm - 2n^2 Then, collecting like terms we get the result of the expansion to be m^2 + nm - 2n^2 Save your answers with Gold Standard Education First, we can write this as two sets of brackets, (2y^2+3x)^2=(2y^2+3x)(2y^2+3x) By using FOIL and collecting like terms, we get (2y^2+3x)(2y^2+3x) \\ =2y^2\times 2y^2+2y^2\times 3x+3x\times 2y^2+3x\times 3x \\ =4y^4+6xy^2+6xy^2+9x^2 \\ = 4y^4+12xy^2+9x^2 Save your answers with Gold Standard Education Expanding Brackets Worksheet and Example Questions Expanding Brackets Drill Questions