LESSON MAKER PRO

Factor the Sum

Turn a sum into a product.

GRADE 6 · 6.NOS.B.4.c

6.NOS.B.4.c "Express the sum of two whole numbers within 100 using the distributive property to factor out the common factor of the addends (e.g., express 36 + 8 as 4(9 + 2))."

NAME _____ DATE _____

FIND THE COMMON FACTOR

Find the greatest common factor (GCF) of the two addends. Divide each addend by the GCF. Write the GCF outside parentheses and the two quotients inside.

WORKED EXAMPLE

Factor 42 + 30 using the greatest common factor.

1. The GCF of 42 and 30 is 6.
2. 42 / 6 = 7 and 30 / 6 = 5.
3. 42 + 30 = 6(7 + 5).

Answer: 6(7 + 5)

PRACTICE 6 problems

1 Factor 18 + 24 using the GCF.

ANSWER _____

2 Factor 32 + 40 using the GCF.

ANSWER _____

3 Factor 27 + 45 using the GCF.

ANSWER _____

4 Factor 56 + 28 using the GCF.

ANSWER _____

5 Factor 14 + 35 using the GCF.

ANSWER _____

6 Factor 48 + 36 using the GCF.

ANSWER _____

APPLY IT Show your work

1 In an online game, you earn 24 points in one round and 64 points in the next. Write your total as a product by factoring out the GCF. Then find your total points.

WORK SPACE

ANSWER _____

2 You use 54 blue beads and 18 green beads to make bracelets. Write the total number of beads as a product by factoring out the GCF. Then find the total.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Factor 24 + 40 in every possible way using a common factor greater than 1. Explain how you know your list is complete.

WORK SPACE AND ANSWER

ANSWER KEY

Factor the Sum

GRADE 6 · 6.NOS.B.4.c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Factor 18 + 24 using the GCF.	**6(3 + 4)**
2	Factor 32 + 40 using the GCF.	**8(4 + 5)**
3	Factor 27 + 45 using the GCF.	**9(3 + 5)**
4	Factor 56 + 28 using the GCF.	**28(2 + 1)**
5	Factor 14 + 35 using the GCF.	**7(2 + 5)**
6	Factor 48 + 36 using the GCF.	**12(4 + 3)**

PART 2 · APPLY IT

1. **8(3 + 8) = 88 points** The GCF of 24 and 64 is 8. Divide both addends by 8, then add to find 88 points.
2. **18(3 + 1) = 72 beads** The GCF of 54 and 18 is 18. Divide both addends by 18, then add to find 72 beads.

CHALLENGE

2(12 + 20), 4(6 + 10), and 8(3 + 5). The GCF of 24 and 40 is 8, and its factors greater than 1 are 2, 4, and 8.

Accept addends in the opposite order inside the parentheses. For the challenge, require all three forms and a reason that no other common factor greater than 1 works.