Steady Steps Maths

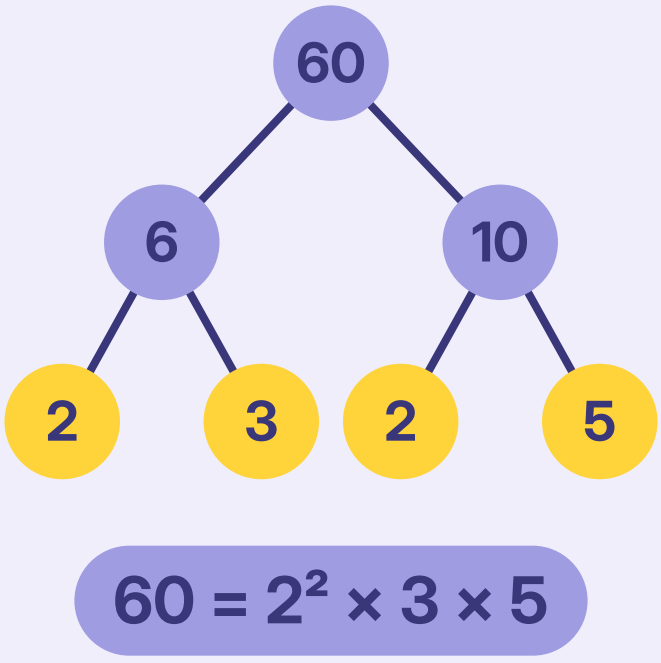
FREE SAMPLE WORKSHEET · TOPIC 5

FREE SAMPLE

Factors & Multiples

Free sample worksheet · with answers

GRADE 6



Common Core 6.NS.B.4

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Quick recap

The big idea from each pack in this topic. Read it first, then try the questions.

Learn it · Pack 1 · Prime factorization

A prime number has exactly two factors: 1 and itself.
A factor tree splits a number until only primes are left: 60 = 2 × 2 × 3 × 5 = **$2^2 \times 3 \times 5$**

Learn it · Pack 2 · Greatest common factor

List the factors of both numbers and pick the biggest one they share.
18: 1, 2, 3, 6, 9, 18 · 24: 1, 2, 3, 4, 6, 8, 12, 24 → GCF = **6**

Learn it · Pack 3 · Least common multiple

List the multiples until you reach the first one both numbers share.
6: 6, 12, 18, 24 · 8: 8, 16, 24 → LCM = **24**

Learn it · Pack 4 · Factoring with the GCF

Take out the GCF: 12 + 18 = 6 × 2 + 6 × 3 = **6(2 + 3)**
Check by multiplying out: 6 × 5 = 30 = 12 + 18 ✓

PACK 1 Prime Factorization

1 Which of these are prime?
21 23 27 29 33

Answer

2 Write 84 as a product of prime factors using exponents.

Answer

3 Which number has the prime factorization $2^3 \times 5$?

Answer

4 List all the factors of 36.

Answer

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PACK 2 Greatest Common Factor

5 Find the GCF of 24 and 36.

Answer

6 Find the GCF of 15 and 28.

Answer

7 Find the GCF of 42 and 56.

Answer

8 Rana has 32 pencils and 24 erasers. She makes identical packs using all of them. What is the greatest number of packs she can make?

Answer

PACK 3 Least Common Multiple

9 Find the LCM of 4 and 6.

Answer

10 Find the LCM of 8 and 12.

Answer

11 Find the LCM of 5 and 7.

Answer

12 Buns come in packs of 6 and sausages in packs of 10. What is the smallest number of each you can buy to have the same number?

Answer

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PACK 4

Factoring with the GCF

13 Write 20 + 35 as the GCF times a sum.

Answer

14 Write 8(3 + 5) as a sum without brackets.

Answer

15 Use the GCF to fill in the boxes: 27 + 45 = 9(☐ + ☐)

Answer

16 Write 36 + 60 as the GCF times a sum.

Answer

Real life

Read carefully, then show your working

17 Two lights flash at the same moment. One flashes every 6 seconds and the other every 9 seconds.
(a) After how many seconds do they next flash together? (b) How many times does the first light flash after that first moment, up to and including when they next flash together?

Answer

18 A florist has 48 roses and 36 tulips. She makes identical bunches, using every flower.
(a) What is the greatest number of bunches she can make? (b) How many roses and how many tulips are in each bunch?

Answer

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Answer key

For parents · check the steps as well as the final answer

Pack 1	**1)** 23 and 29 **2)** $2^2 \times 3 \times 7$ **3)** 40 **4)** 1, 2, 3, 4, 6, 9, 12, 18, 36
Pack 2	**5)** 12 **6)** 1 **7)** 14 **8)** 8 packs
Pack 3	**9)** 12 **10)** 24 **11)** 35 **12)** 30 of each (5 packs of buns, 3 packs of sausages)
Pack 4	**13)** 5(4 + 7) **14)** 24 + 40 **15)** 9(3 + 5) **16)** 12(3 + 5)
Real life	**17)** (a) 18 seconds (b) 3 times **18)** (a) 12 bunches (b) 4 roses and 3 tulips

Tip: Encourage your child to check a factorization by multiplying it back out. It catches most slips.

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Enjoyed this sample?

This sheet has 18 questions. The full topic has 152, plus 10 unit tests.

Everything a Grade 6 student needs on factors and multiples: prime numbers and factor trees, the greatest common factor, the least common multiple, and using the GCF with the distributive property to factor a sum.

What you get	What's inside	Questions
Pack 1 · Prime Factorization	Learn-it boxes, worked examples, practice, word problems, self-check and answer key · Common Core 6.NS.B.4	41
Pack 2 · Greatest Common Factor	Learn-it boxes, worked examples, practice, word problems, self-check and answer key · Common Core 6.NS.B.4	37
Pack 3 · Least Common Multiple	Learn-it boxes, worked examples, practice, word problems, self-check and answer key · Common Core 6.NS.B.4	37
Pack 4 · Factoring with the GCF	Learn-it boxes, worked examples, practice, word problems, self-check and answer key · Common Core 6.NS.B.4	37
Complete Topic book	All 4 packs in one book with a contents page	152
10 Unit Tests (A–J)	40 marks each, about 40 minutes, with a mark scheme and a "what to revise" table. **Test A is free.**	18 per test

How to use this sample

1. Let your child read the recap page and try the questions on their own.
2. Mark together with the answer key. Each section shows which pack it comes from.
3. If a section felt hard, that pack is the place to start. If it all felt easy, try the free Unit Test A.

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