

Multiples and factors

Learn and revise

Make sure you know the difference between **multiples** and **factors**.

Multiples

Multiples of any number can be divided exactly by that number.

For example:

- 8, 12, 16, 20 and 24 are all multiples of 4.
- 12, 18, 24, 30 and 36 are all multiples of 6.

12 and 24 are **common multiples** of 4 and 6.

The **lowest common multiple** (LCM) of 4 and 6 is 12.

Factors

Factors are whole numbers that will divide exactly into other whole numbers. For example:

- The factors of 32 are (1, 32), (2, 16), (4, 8).
- The factors of 18 are (1, 18), (2, 9), (3, 6).

Numbers which are factors of two or more numbers are called **common factors**.

The common factors of 18 and 32 are 1 and 2.

The **highest common factor** (HCF) of 18 and 32 is 2.

Practice activities

1. Find all the common multiples up to 99 for each pair of numbers.

a) 3 and 5 _____

b) 6 and 10 _____

c) 4 and 9 _____

d) 2 and 5 _____

2. Write the lowest common multiple for each pair of numbers in practice activity 1.

a) _____ b) _____

c) _____ d) _____

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3. What is the lowest common multiple for each of these?

- a) 6 and 8 _____ b) 9 and 5 _____
c) 2, 3 and 5 _____ d) 4, 9 and 6 _____
e) 6, 4 and 5 _____ f) 8, 3 and 2 _____

4. Write the factors of these numbers in pairs.

- a) 48 _____
b) 27 _____
c) 45 _____
d) 36 _____
e) 30 _____
f) 42 _____

5. Look at your answers for practice activity 4. Use them to help you find the **common factors** for each of these.

- a) Common factors of 30 and 42 _____
b) Common factors of 27 and 45 _____
c) Common factors of 36 and 42 _____
d) Common factors of 42 and 48 _____
e) Common factors of 30 and 45 _____
f) Common factors of 27, 36 and 45 _____
g) Common factors of 36, 42 and 48 _____

Now circle the **highest common factor** in each of your answers.